



## **Bandwagon, Snob, and Veblen Effects in the Theory of Consumers' Demand**

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# BANDWAGON, SNOB, AND VEBLEN EFFECTS IN THE THEORY OF CONSUMERS' DEMAND

## SUMMARY

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### I. THE NATURE OF THE PROBLEM<sup>1</sup>

The desire of some consumers to be "in style," the attempts by others to attain exclusiveness, and the phenomena of "conspicuous consumption," have as yet not been incorporated into the current theory of consumers' demand. My purpose, in this paper, is to take a step or two in that direction.

#### 1. "*Non-additivity*" in *Consumers' Demand Theory*

This enquiry was suggested by some provocative observations made by Professor Oskar Morgenstern in his article, "Demand Theory Reconsidered."<sup>2</sup> After examining various aspects of the relationship between individual demand curves and collective market demand curves Professor Morgenstern points out that in some cases the market demand curve is not the lateral summation of the individual demand curves. The following brief quotation may indicate the nature of what he calls "non-additivity" and give some indication of the problem involved. "Non-additivity in this simple sense is given, for example, in the case of fashions, where one person buys because another is buying the same thing, or vice versa. The collective demand curve of snobs is most likely not additive. But the phenomenon of non-additivity is in fact much deeper; since virtually all collective supply curves are non-additive it follows that the demand of the firms for their labor, raw materials, etc. is also non-additive. This expands the field of non-additivity enormously."<sup>3</sup>

Since the purpose of Professor Morgenstern's article is immanent criticism he does not present solutions to the problems he raises. He does clearly imply, however, that since coalitions are bound to be important in this area only the "Theory of Games" (developed by Von Neumann and Morgenstern) is likely to give an adequate solution to this problem.<sup>4</sup> The present writer is not competent to judge

1. The writer wishes to take this opportunity to thank Professor Ansley Coale and Messrs. Carey P. Modlin and Norman B. Ryder for their painstaking criticism of an earlier draft of this paper.

2. This *Journal*, February 1948, pp. 165-201.

3. *Ibid.*, p. 175 n.

4. *Ibid.*, p. 201.

whether this is or is not the case, but he does believe that there are many markets where coalitions among consumers are not widespread or of significance, and hence abstracting from the possibility of such coalitions may not be unreasonable. Should this be the case we may be able to make some headway through the use of conventional analytical methods.

What we shall therefore be concerned with substantially is a reformulation of some aspects of the static theory of consumers' demand while permitting the relaxation of one of the basic implicit assumptions of the current theory — namely, that the consumption behaviour of any individual is independent of the consumption of others. This will permit us to take account of consumers' motivations not heretofore incorporated into the theory. To be more specific, the proposed analysis is designed to take account of the desire of people to wear, buy, do, consume, and behave like their fellows; the desire to join the crowd, be "one of the boys," etc. — phenomena of mob motivations and mass psychology either in their grosser or more delicate aspects. This is the type of behaviour involved in what we shall call the "bandwagon effect." On the other hand, we shall also attempt to take account of the search for exclusiveness by individuals through the purchase of distinctive clothing, foods, automobiles, houses, or anything else that individuals may believe will in some way set them off from the mass of mankind — or add to their prestige, dignity, and social status. In other words, we shall be concerned with the impact on the theory created by the potential nonfunctional utilities inherent in many commodities.

## 2. *The Past Literature*

The past literature on the interpersonal aspects of utility and demand can be divided into three categories: sociology, welfare economics, and pure theory. The sociological writings deal with the phenomena of fashions and conspicuous consumption and their relationship to social status and human behaviour. This treatment of the subject was made famous by Veblen — although Veblen, contrary to the notions of many, was neither the discoverer nor the first to elaborate upon the theory of conspicuous consumption. John Rae, writing before 1834, has quite an extensive treatment of conspicuous consumption, fashions, and related matters pretty much along Veblenian lines.<sup>5</sup> Rae attributes many of these ideas to earlier

5. John Rae, *The Sociological Theory of Capital* (London: The Macmillan Co., 1905), especially Chap. XIII, "Of Economic Stratification," and Appendix I, "Of Luxury," pp. 218–276.

writers, going so far as to find the notion of conspicuous consumption in the Roman poet Horace; and a clear statement of the "keeping up with the Joneses" idea in the verse of Alexander Pope.<sup>6</sup> An excellent account of how eighteenth and nineteenth century philosophers and economists handled the problem of fashion is given in Norine Foley's article "Fashion."<sup>7</sup> For the most part, these treatments are of a "sociological" nature.

The economist concerned with public policy will probably find the "economic welfare" treatment of the problem most interesting. Here, if we examine the more recent contributions first and then go backward, we find examples of current writers believing they have stumbled upon something new, although they had only rediscovered what had been said many years before. Thus, Professor Melvin Reder in his recent treatment of the theory of welfare economics claims that "... there is another type of external repercussion which is rarely, *if ever*, recognized in discussions of welfare economics. It occurs where the utility function of one individual contains, as variables, the quantities of goods consumed by other persons."<sup>8</sup> It can only be lack of awareness of the past literature that causes Reder to imply that this consideration has not been taken up before. Among those who considered the problem earlier are J. E. Meade,<sup>9</sup> A. C. Pigou,<sup>1</sup> Henry Cunynghame,<sup>2</sup> and John Rae.<sup>3</sup>

The similarity in the treatment of this matter by Reder and Rae is at times striking. For example, Reder suggests that legislation forbidding "invidious expenditure" may result in an increase in welfare by freeing resources from "competitive consumption" to other uses.<sup>4</sup> In a similar vein Rae argued that restrictions on the trade of "pure luxuries" can only be a gain to some and a loss to none, in view of the labor saved in avoiding the production of "pure luxuries." It is quite clear from the context that what Rae calls "pure luxuries" is exactly the same as Reder's commodities that enter into "competitive consumption."<sup>5</sup>

6. *Ibid.*, pp. 249 and 253.

7. *Economic Journal*, 1893, pp. 458-474.

8. *Studies in the Theory of Welfare Economics* (New York: Columbia University Press, 1947), p. 64. Italics mine.

9. "Mr. Lerner on the Economics of Control," *Economic Journal*, 1945, pp. 51-56.

1. *The Economics of Welfare* (4th Edition, 1929), pp. 190-192, 225-226, 808.

2. "Some Improvements in Simple Geometrical Methods of Treating Exchange Value, Monopoly, and Rent," *Economic Journal*, 1892, pp. 35-39.

3. Rae, *op. cit.*, pp. 277-296.

4. Reder, *op. cit.*, pp. 65-66.

5. Rae, *op. cit.*, pp. 282-288.

One reason why the interpersonal effects on demand have been ignored in current texts may be the fact that Marshall did not consider the matter in his *Principles*. We know, however, from Marshall's correspondence,<sup>6</sup> that he was aware of the problem. Both Cunyng-  
hame and Pigou pointed out that Marshall's treatment of consumers' surplus did not take into account interpersonal effects on utility. Marshall seemed to feel that this would make the diagrammatical treatment too complex. Recently, Reder<sup>7</sup> and Samuelson<sup>8</sup> noticed that external economies and diseconomies of consumption may vitiate (or, at best, greatly complicate) their "new" welfare analysis, and hence, in true academic fashion, they assume the problem away. This, however, is not the place to examine the question in detail.

The only attack on the problem from the point of view of pure theory that the writer could find<sup>9</sup> is a short article by Professor Pigou.<sup>1</sup> In this article Pigou sets out to inquire under what circumstances the assumption of the additivity of the individual demand curves "adequately conforms to the facts, and, when it does not so conform, what alternative assumption ought to be substituted for it."<sup>2</sup> It is obvious that the particular choice of alternative assumptions will determine (a) whether a solution can, given the existing analytical tools, be obtained, and (b) whether such a solution is relevant to the real world. Pigou's treatment of the problem is, unfortunately, exceedingly brief. He attempts to deal with non-additivity in both supply and demand curves within the confines of six pages. In examining the additivity assumption he points out that it is warranted when (1) the demand for the commodity is wholly for the direct satisfaction yielded by it or, (2) where disturbances to equilibrium are so small that aggregate output is not greatly changed.

6. Pigou, *Memorials of Alfred Marshall*, pp. 433 and 450. These are Marshall's letters to Pigou and Cunyng-  
hame which indicate that Marshall had read the articles (*E. J.* 1892, and *E. J.* 1903), where Pigou and Cunyng-  
hame consider the matter.

7. Reder, *op. cit.*, p. 67. "We shall assume, throughout its remainder, that the satisfaction of one individual does not depend on the consumption of another."

8. *Foundations of Economic Analysis*, p. 224.

9. James S. Duesenberry, in his recent book, *Income, Saving, and the Theory of Consumer Behavior* (Harvard University Press, 1949), considers problems of a somewhat similar nature but handles them in quite a different manner. Chapter VI on interdependent preferences and the "new" welfare analysis is especially worthy of mention. Duesenberry's treatment of the problem helps considerably to fill an important gap in the current theory. Unfortunately, Mr. Duesenberry's work came to the attention of the writer too late to be given the detailed consideration it deserves.

1. "The Interdependence of Different Sources of Demand and Supply in a Market," *Economic Journal*, 1913, pp. 18-24.

2. *Ibid.*, p. 18.

After briefly suggesting some of the complexities of non-additivity he concludes that the "... problems, for the investigation of which it is necessary to go behind the demand schedule of the market as a whole, are still, theoretically, soluble; there are a sufficient number of equations to determine the unknowns."<sup>3</sup> This last point, which is not demonstrated in Pigou's article, is hardly satisfying since it has been shown that the equality of equations and unknowns is not a sufficient condition for a determinate solution, or indeed for any solution, to exist.<sup>4</sup>

### 3. *The Approach and Limits of the Ensuing Analysis*

It should, perhaps, be pointed out at the outset that the ensuing exposition is limited to statics. In all probability, the most interesting parts of the problem, and also those most relevant to real problems, are its dynamic aspects. However, a static analysis is probably necessary, and may be of significance, in order to lay a foundation for a dynamic analysis. In view of the limitations to be set on the following analysis, it becomes necessary to demarcate clearly the conceptual borderline between statics and dynamics.

There are, unfortunately, numerous definitions of statics and there seems to be some confusion on the matter. In view of this it will not be possible to give *the* definition of statics. All that we can hope to do is to choose a definition that will be consistent with and useful for our purposes — and also one that at the same time does not stray too far from some of the generally accepted notions about statics. Because of the fact that we live in a dynamic world most definitions of statics will imply a state of affairs that contradicts our general experience. But this is of necessity the case. What we must insist on is internal consistency but we need not, at this stage, require "realism."

Our task, then, is to define a static situation — a situation in which static economics is applicable. Ordinarily, it is thought that statics is in some way "timeless." This need not be the case. For our purposes, a static situation is not a "timeless" situation, nor is static economics timeless economics. It is, however, "temporally orderless" economics. That is, we shall define a static situation as one in which the order of events is of no significance. We, therefore,

3. *Ibid.*, p. 24.

4. On this point cf. Morgenstern, "Professor Hicks on Value and Capital," *Journal of Political Economy*, June 1941, pp. 368-376. See also part of an article by Don Patinkin, "The Indeterminacy of Absolute Prices in Classical Economic Theory," *Econometrica*, January 1949, pp. 310-311, which sets out the conditions under which systems of homogeneous equations will possess no solution.

abstract from the consequences of the temporal order of events.<sup>5</sup> The above definition is similar to, but perhaps on a slightly higher level of generality than, Hicks's notion that statics deals with "those parts of economic theory where we do not have to trouble about dating."<sup>6</sup>

In order to preserve internal consistency, it is necessary to assume that the period of reference is one in which the consumer's income and expenditure pattern is synchronized. And, we have to assume also that this holds true for all consumers. In other words, we assume that both the income patterns and the expenditure patterns repeat themselves *every* period. There is thus no overlapping of expenditures from one period into the next. This implies, of course, that the demand curve reconstitutes itself every period.<sup>7</sup> The above implies also that only one price can exist during any unit period and that price can change only from period to period. A disequilibrium can, therefore, be corrected only over two or more periods.

## II. FUNCTIONAL AND NONFUNCTIONAL DEMAND

At the outset it is probably best to define clearly some of the basic terms we are going to use and to indicate those aspects of demand that we are going to treat. The demand for consumers' goods and services may be classified according to motivation. The following classification, which we shall find useful, is on a level of abstraction which, it is hoped, includes most of the motivations behind consumers' demand.

- A. Functional
- B. Nonfunctional
  - 1. External effects on utility
    - (a) Bandwagon effect
    - (b) Snob effect
    - (c) Veblen effect
  - 2. Speculative
  - 3. Irrational

By functional demand is meant that part of the demand for a commodity which is due to the qualities inherent in the commodity

5. An excellent discussion of the above problem, the relationship between the notions of time in economics and various definitions of statics and dynamics, can be found in W. C. Hood, "Some Aspects of the Treatment of Time in Economic Theory," *The Canadian Journal of Economics and Political Science*, 1948, pp. 453-468.

6. *Value and Capital*, p. 115.

7. The above assumptions are necessary in order to take care of some of the difficulties raised by Professor Morgenstern in "Demand Theory Reconsidered."

itself. By nonfunctional demand is meant that portion of the demand for a consumers' good which is due to factors other than the qualities inherent in the commodity. Probably the most important kind of nonfunctional demand is due to external effects on utility. That is, the utility derived from the commodity is enhanced or decreased owing to the fact that others are purchasing and consuming the same commodity, or owing to the fact that the commodity bears a higher rather than a lower price tag. We differentiate this type of demand into what we shall call the "bandwagon" effect, the "snob" effect, and the "Veblen" effect.<sup>8</sup> By the bandwagon effect, we refer to the extent to which the demand for a commodity is *increased* due to the fact that others are also consuming the same commodity. It represents the desire of people to purchase a commodity in order to get into "the swim of things"; in order to conform with the people they wish to be associated with; in order to be fashionable or stylish; or, in order to appear to be "one of the boys." By the snob effect we refer to the extent to which the demand for a consumers' good is *decreased* owing to the fact that others are also consuming the same commodity (or that others are increasing their consumption of that commodity). This represents the desire of people to be exclusive; to be different; to dissociate themselves from the "common herd." By the Veblen effect we refer to the phenomenon of conspicuous consumption; to the extent to which the demand for a consumers' good is increased because it bears a higher rather than a lower price. We should perhaps emphasize the distinction made between the snob and the Veblen effect — the former is a function of the consumption of others, the latter is a function of price.<sup>9</sup> This paper will deal almost exclusively with these three types of nonfunctional demand.

For the sake of completeness there should perhaps be some explanation as to what is meant by speculative and irrational demand. Speculative demand refers to the fact that people will often "lay in" a supply of a commodity because they expect its price to rise. Irrational demand is, in a sense, a catchall category. It refers to purchases that are neither planned nor calculated but are due to sudden urges, whims, etc., and that serve no rational purpose but that of satisfying sudden whims and desires.

8. It is assumed from here on that the reader will be aware that these terms will be used in the special sense here defined, and hence the quotation marks will hereafter be deleted.

9. Some writers have not made the above distinction but have combined the two effects into what they termed "snob behaviour" (see Morgenstern, *op. cit.*, p. 190). The above does not imply that our distinction is necessarily the "correct" one, but only that it is found useful in our analysis.



In the above it was assumed throughout that income is a parameter. If income is not given but allowed to vary, then the income effect on demand may in most cases be the most important effect of all. Also, it may be well to point out that the above is only one of a large number of possible classifications of the types of consumers' demand — classifications that for some purposes may be superior to the one here employed. We therefore suggest the above classification only for the purposes at hand and make no claims about its desirableness, or effectiveness, in any other use.

### III. THE BANDWAGON EFFECT

#### 1. *A Conceptual Experiment*

Our immediate task is to obtain aggregate demand curves of various kinds in those cases where the individual demand curves are non-additive. First we shall examine the case where the bandwagon effect is important. In its pure form this is the case where an individual will demand more (less) of a commodity at a given price because some or all other individuals in the market also demand more (less) of the commodity.

One of the difficulties in analyzing this type of demand involves the choice of assumptions about the knowledge that each individual possesses. This implies that everyone knows the quantity that will be demanded by every individual separately, or the quantity demanded by all individuals collectively at any given price — after all the reactions and adjustments that individuals make to each other's demand has taken place. On the other hand, if we assume ignorance on the part of consumers about the demand of others, we have to make assumptions as to the nature and extent of the ignorance — ignorance is a relative concept. A third possibility, and the one that will be employed at first, is to devise some mechanism whereby the consumers obtain accurate information.

Another problem involves the choice of assumptions to be made about the demand behaviour of individual consumers. Three possibilities suggest themselves: (1) The demand of consumer *A* (at given prices) may be a function of the total demand of all others in the market collectively. Or, (2) the demand of consumer *A* may be a function of the demand of all other consumers both separately and collectively. In other words, *A*'s demand may be more influenced by the demand of some than by the demand of others. (3) A third possibility is that *A*'s demand is a function of the number of people that demand the commodity rather than the number of units demanded. More complex demand behaviour patterns that combine some of the

elements of the above are conceivable. For present purposes it is best that we assume the simplest one as a first approximation.<sup>1</sup> Initially, therefore, we assume that *A*'s demand is a function of the units demanded by all others collectively. This is the same as saying that *A*'s demand is a function of total market demand at given prices, since *A* always knows his own demand, and he could always subtract his own demand from the total market demand to get the quantity demanded by all others.

In order to bring out the central principle involved in the ensuing analysis, consider the following *gedankenexperiment*. A known product is to be introduced into a well-defined market at a certain date. The nature of the product is such that its demand depends partially on the functional qualities of the commodity, and partially on whether many or few units are demanded. Our technical problem is to compound the nonadditive individual demand curves into a total market demand curve, given sufficient information about the individual demand functions. Now, suppose that it is possible to obtain an accurate knowledge of the demand function of an individual through a series of questionnaires. Since an individual's demand is, in part, a function of the total market demand, it is necessary to take care of this difficulty in our questionnaires. We can have a potential consumer fill out the first questionnaire by having him assume that the total market demand, at all prices, is a given very small amount — say 400 units. On the basis of this assumption the consumer would tell us the quantities he demands over a reasonable range of prices. Subjecting every consumer to the same questionnaire, we add the results across and obtain a market demand curve that would reflect the demand situation if every consumer believed the total demand were only 400 units. This, however, is not the real market demand function under the assumption of the possession of accurate market information by consumers, since the total demand (at each price) upon which consumers based their replies was not the actual market demand (at each price) as revealed by the results of the survey. Let us call the results of the first survey "schedule No. 1."

We can now carry out a second survey, that is, subject each consumer to a second questionnaire in which each one is told that schedule No. 1 reflects the total quantities demanded, at each price.

1. As is customary in economic theory the ensuing analysis is carried out on the basis of a number of simplifying assumptions. The relaxation of some of the simplifying assumptions and the analysis of more complex situations must await some other occasion. The present writer has attempted these with respect to some of the simplifying assumptions but the results cannot be included within the confines of an article of the usual length.

Aggregating the replies we obtain schedule No. 2. Schedule No. 1 then becomes a parameter upon which schedule No. 2 is based. In a similar manner we can obtain schedules No. 3, No. 4, . . . , No.  $n$  in which each schedule is the result of adding the quantities demanded by each consumer (at each price), *if each consumer believes that the total quantities demanded (at each price) are shown by the previous schedule*. Now, the quantities demanded in schedule No. 2 will be greater than or equal to the quantities demanded in schedule No. 1 for the same prices. Some consumers may increase the quantity they demand when they note that the total quantity demanded, at given prices, is greater than they thought it would be. As long as some consumers or potential consumers continue to react positively to increases in the total quantity demanded the results of successive surveys will be different. That is, some or all of the quantities demanded in schedule No. 1 will be less than the quantities demanded at the same prices, in schedule No. 2, which in turn will be equal to or less than the quantities demanded, at the same prices, in schedule No. 3, and so on.

At this point it is appropriate to introduce a new principle with the intention of showing that this process cannot go on indefinitely. Sooner or later two successive schedules will be identical. If two successive surveys yield the same market demand schedules, then an equilibrium situation exists since the total quantities demanded, at each price, upon which individual consumers based their demand, turns out to be correct. Thus, if schedule No.  $n$  is identical with schedule No.  $n-1$ , then schedule No.  $n$  is the actual market demand function for the product on the assumption that consumers have accurate information of market conditions.

The question that arises is whether there is any reason to suppose that sooner or later two successive surveys will yield exactly the same result. This would indeed be the case if we could find good reason to posit a principle to the effect that for every individual there is some point at which he will cease to increase the quantities demanded for a commodity, at given prices, in response to incremental increases in total market demand. Such a principle would imply that beyond a point incremental increases in the demand for the commodity by others have a decreasing influence on a consumer's own demand; and, further, that a point is reached at which these increases in demand by others have no influence whatsoever on his own demand. It would, of course, also be necessary to establish that such a principle holds true for every consumer. It would not be inappropriate to call this the principle of diminishing marginal external consumption effect.

Does such a principle really exist? There are some good reasons for believing that it does. First, the reader may note that the principle is analogous to the principle of diminishing marginal utility. As the total market demand grows larger, incremental increases in total demand become smaller and smaller proportions of the demand. It sounds reasonable, and probably appeals to us intuitively that an individual would be less influenced, and indeed take less notice of, a one per cent increase in total demand, than of a ten per cent increase in total demand, though these percentage increases be the same in absolute amount. Second, we can probably appeal effectively to general experience. There are no cases in which an individual's demand for a consumers' good increases endlessly with increases in total demand. If there were two or more such individuals in a market then the demand for the commodity would increase in an endless spiral. Last but not least, the income constraint is sufficient to establish that there must be a point at which increases in a consumer's demand must fail to respond to increases in demand by others. Since every consumer is subject to the income constraint, it must follow that the principle holds for all consumers.<sup>2</sup>

Now, to get back to our conceptual experiment, we would find that after administering a sufficient number of surveys, we would sooner or later get two surveys that yield identical demand schedules. The result of the last survey would then represent the true demand situation that would manifest itself on the market when the commodity was offered for sale. We may perhaps justly call such a demand function the equilibrium demand function — or demand curve. The equilibrium demand curve is the curve that exists when the marginal external consumption effect for every consumer, but one,<sup>3</sup> at all alternate prices is equal to zero. All other demand curves may be conceived as disequilibrium curves that can exist only because of temporarily imperfect knowledge by consumers of other people's demand. Once the errors in market information were discovered such a curve would move to a new position.

## 2. *The Bandwagon Effect — Diagrammatical Method*

The major purpose of going through the conceptual experiment with its successive surveys was to illustrate the diminishing marginal

2. If the reader should object to our dignifying the diminishing marginal external consumption effect by calling it a principle or a law, we could point out that if it is not a "law," then it must be an equilibrium condition.

3. The fact that the marginal external consumption effect of one consumer is greater than zero can have no effect on the demand schedule since total market demand, at any given price, cannot increase unless there are at least two consumers who would react on each other's demand.

external consumption effect and to indicate its role in obtaining a determinate demand curve. There is, however, a relatively simple method for obtaining the market demand function in those cases where external consumption effects are significant. This method will allow us to compare some of the properties of the "bandwagon demand curve" with the usual "functional" demand curve; and, it will also allow us to separate the extent to which a change in demand is due to a change in price, and the extent to which it is due to the bandwagon effect.

Given a certain total demand for a commodity as a parameter,<sup>4</sup> every individual will have a demand function based on this total market demand. Let the alternative total market demands that will serve as parameters for alternate individual demand functions be indicated as superscripts  $a, b, \dots n$  (where  $a < b < \dots < n$ ). Let the individual demand functions be  $d_1, d_2, \dots d_n$ ; where every subscript indicates a different consumer. Thus  $d_3^a$  is the individual demand curve for consumer 3 if the consumer believes that the total market demand is  $a$  units. Similarly  $d_{500}^m$  is the individual demand curve for the 500th consumer if he believes that the total market demand will be  $m$  units. We could now add across  $d_1^a, d_2^a, d_3^a, \dots, d_n^a$  which will give us the market demand curve  $D^a$ , which indicates the quantities demanded at alternate prices if all consumers believed that the total demand was  $a$  units. In the same manner we can obtain  $D^b, D^c, \dots, D^n$ . These hypothetical market demand curves  $D^a, D^b, D^c, \dots, D^n$  are shown in Figure 1. Now, if we assume that buyers have accurate knowledge of market conditions (*i.e.*, of the total quantities demanded at every price) then only one point on any of the curves  $D^a, D^b, \dots, D^n$  could be on the real or equilibrium demand curve. These are the points on each curve  $D^a, D^b, \dots, D^n$  that represent the amounts on which the consumers based their individual demand curves; that is, the amounts that consumers expected to be the total market demand. These points are labeled in Figure 1 as  $E^a, E^b, \dots, E^n$ . They are a series of virtual equilibrium points. Given that consumers possess accurate market information,  $E^a, E^b, \dots, E^n$ , are the only points that can become actual

4. The reader should note that the analysis in the following pages is based on a somewhat different assumption than the *gedankenexperiment*. In the diagrams that follow each demand curve (other than the equilibrium demand curve) is based on the assumption that consumers believe that a fixed amount will be taken off the market at all prices. There is more than one way of deriving the equilibrium demand curve. The earlier method helped to bring out the nature of the central principle that is involved, while the method which follows will enable us to separate price effects from bandwagon effects and snob effects, etc.

quantities demanded. The locus of all these points  $D_B$  is therefore the actual demand curve for the commodity.

It may be of interest, at this point, to break up changes in the quantity demanded due to changes in price into a price effect and a bandwagon effect; that is, the extent of the change that is due to the change in price, and the extent of the change in demand that is due to consumers adjusting to each other's changed consumption.<sup>5</sup> With an eye on Figure 1 consider the effects of a reduction in price from  $P_2$  to  $P_1$ . The increase in demand after the change in price is  $ac$ . Only part of that increase, however, is due to the reduction in price. To measure the amount due to the reduction in price we go

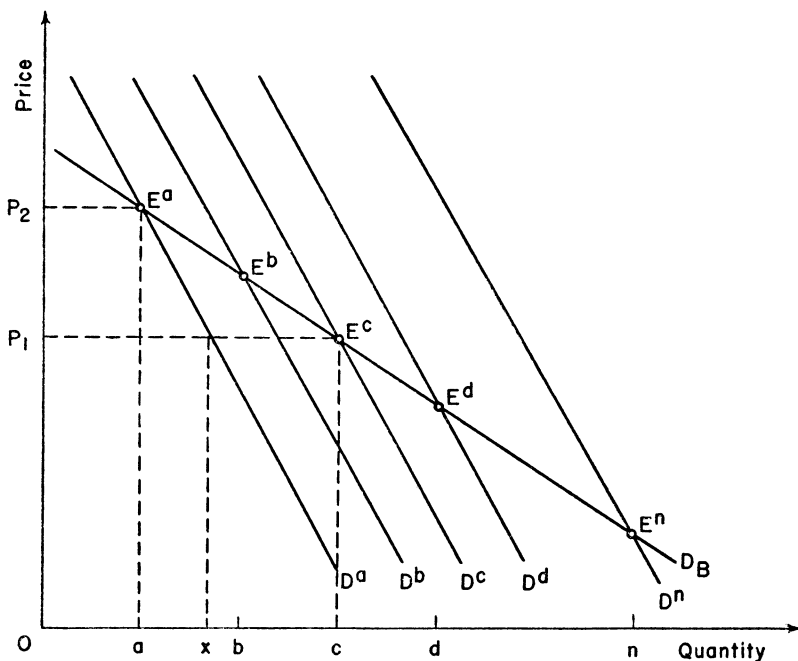


FIGURE 1

along the demand curve  $D^a$  to  $P_1$  which tells us the quantity that would be demanded at  $P_1$  if consumers did not adjust to each other's demand. This would result in an increase in demand of  $ax$ . Due to

5. We are now really in the area of "comparative statics." It may be recalled that we defined statics and our unit period in such a way that only *one* price holds within any unit period. Thus, when we examine the effects of a change in price we are really examining the reasons for the differences in the quantities demanded at one price in one unit period and another price in the succeeding unit period.

the bandwagon effect, however, an additional number of consumers are induced to enter the market or to increase their demands. There is now an additional increase in demand of  $x$  after consumers have adjusted to each other's increases in consumption. Exactly the same type of analysis can, of course, be carried out for increases as well as for decreases in price.

We may note another thing from Figure 1. The demand curve  $D_B$  is more elastic than any of the other demand curves shown in the diagram. This would suggest that, other things being equal, the demand curve will be more elastic if there is a bandwagon effect than if the demand is based only on the functional attributes of the commodity. This, of course, follows from the fact that reactions to price changes are followed by additional reactions, *in the same direction*, to each other's changed consumption.

### 3. Social Taboos and the Bandwagon Effect

Social taboos, to the extent that they affect consumption, are, in a sense, bandwagon effects in reverse gear. That is to say, some people will not buy and consume certain things because other people are not buying and consuming these things. Thus, there may not be any demand for a commodity even though it has a functional utility, although, apart from the taboo, it would be purchased. Individual A will not buy the commodity because individuals B, C, and D do not, while individuals B, C, and D may refrain from consumption for the same reasons. It is not within the competence of the economist to investigate the psychology of this kind of behaviour. For our purposes we need only note that such behaviour exists and attempt to analyze how such behaviour affects the demand function.

We can proceed as follows. Let  $d_1^x$  be the demand curve of the least inhibited individual in the market, where the superscript  $x$  is the total quantity demanded in the market upon which he bases his individual demand. Suppose that at market demand  $x$  consumer 1 will demand at some range of prices one unit of the commodity, but at no price will he demand more. If he believes, however, that the total market demand is less than  $x$  units he will refrain from making any purchases. Since, *ex hypothesi*, consumer 1 is the least inhibited consumer, he will, at best, be the only one who will demand one unit of the commodity if consumers expect the total market demand to be  $x$  units. It must be clear, then, that  $x$  units cannot be a virtual equilibrium point, since only points where the total expected quantity demanded is equal to the actual quantity demanded can be points on the real demand curve, and the quantity  $x$  cannot at

any price be a point where expected total demand is equal to actual total demand. Now, if the total expected demand were  $x + 1$  the actual demand might increase, say, to 2 units. At expected total demands  $x + 2$  and  $x + 3$ , more would enter the market and the actual demand would be still greater since the fear of being different is considerably reduced as the expected demand is increased. With given increases in the expected total demand there must, at some point, be more than equal increases in the actual demand, because, if a real demand curve exists at all, there must be some point where the expected demand is equal to the actual demand. That point may exist, say, at  $x + 10$ . That is, at an expected total demand of  $x + 10$  units a sufficient number of people have overcome their inhibitions to being different so that, at some prices, they will actually demand  $x + 10$  units of the commodity. Let us call this point " $T$ " — it is really the "taboo breaking point." The maximum bid (the point  $T$  in Figure 2) of the marginal unit demanded if the total demand were  $T$  units now gives us the first point on the real demand curve (the curve  $D_B$ ).

How social taboos may affect the demand curve is shown in Figure 2. It will be noted that the price axis shows both positive and negative "prices." A negative price may be thought of as the price it would be necessary to *pay* individuals in order to induce them to consume in public a given amount of the commodity; that is, the price that it would be necessary to pay the consumers in order to induce them to disregard their aversion to be looked upon as odd or peculiar.

As we have already indicated, the point  $T$  in Figure 2 is the "taboo breaking point."  $T$  represents the number of units at which an *expected* total quantity demanded of  $T$  units would result in an *actual* quantity demanded of  $T$  units at some *real* price. Now, what has to be explained is why an expected demand of less than  $T$  units, say  $T - 3$  units, would not yield an actual demand of  $T - 3$  units at a positive price but only at a "negative price." Let the curve  $D^{T-3}$  be the demand curve that would exist if consumers thought the total demand was  $T - 3$ . Now, at any positive price, say  $P_3$ , the amount demanded would be less than  $T - 3$ , say  $T - 7$ . The price  $P_3$  can therefore exist only if there is inaccurate information of the total quantity demanded. Once consumers discovered that at  $P_3$  only  $T - 7$  was purchased, and believed that this was the demand that would be sustained, their demand would shift to the  $D^{T-7}$  curve. At  $P_3$  the amount purchased would now be less than  $T - 7$  and demand would now shift to a curve to the left of the  $D^{T-7}$



curve. This procedure would go on until the demand was zero at  $P_3$ . We thus introduce a gap into our demand function and focus attention on an interesting psychological phenomenon that may affect demand. What we are suggesting, essentially, is that given

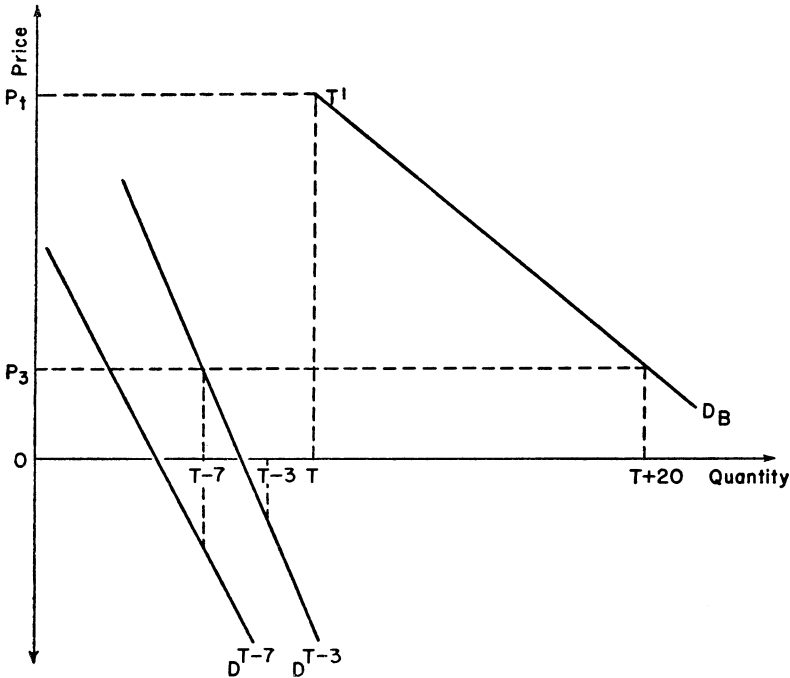


FIGURE 2

"accurate expectations" of the total quantity demanded on the part of consumers, there is a quantity less than which there will not be any quantity demanded at any real price. In other words, this is a case in which a commodity will either "go over big" or not "go over" at all. It will be noted that at  $P_3$  zero units or  $T + 20$  units (Figure 2) may be taken off the market given "accurate expectations" of the total quantity demanded. It would seem, therefore, that "accurate expectations" of the total quantity demanded at  $P_3$  can have two values depending upon whether people are generally pessimistic or optimistic about other consumers' demands for the commodity in question. If everybody expects that everybody else would not care much for the commodity, then zero units would be the accurate expectation of the total quantity demanded; if everybody, on the other hand, expects others to take up the commodity with

some degree of enthusiasm,<sup>6</sup> then  $T + 20$  units would be the accurate expectation of the total quantity demanded. The factors that would determine one set of expectations rather than the other are matters of empirical investigation in the field of social psychology. The factors involved may be the history of the community, the people's conservatism or lack of conservatism, the type and quantity of advertising about the commodity under consideration, etc.

The really significant point in Figure 2 is  $T^1$ , the first point on the real demand curve  $D_B$ . As already indicated, it is the point at which the maximum bid of the marginal unit demanded is  $P_t$  and the total market demand is  $T$  units. If the price were higher than  $P_t$ , the  $T^{th}$  unit would not be demanded and all buyers would leave the market because of the effect of the taboo at less than a consumption of  $T$  units.<sup>7</sup> By way of summary we might say that the whole point of this section is an attempt to show that in cases where social taboos affect demand the real demand curve may not start at the price-axis but that the smallest possible quantity demanded may be some distance to the right of the price-axis.

#### IV. THE SNOB EFFECT

Thus far, in our conceptual experiment and diagrammatic analysis, we have considered only the bandwagon effect. We now consider the reverse effect — the demand behaviour for those commodities with regard to which the individual consumer acts like a snob. Here, too, we assume at first that the quantity demanded by a consumer is a function of price and of the total market demand, but that the individual consumer's demand is negatively correlated with the total market demand. In the snob case it is rather obvious that the external consumption effect must reach a limit although the limit may be where one snob constitutes the only buyer. For most commodities and most buyers, however, the motivation for exclusiveness is not that great; hence the marginal external consumption effect reaches zero before that point. If the commodity is to be purchased at all, the external consumption effect must reach a limit, at some price, where the quantity demanded has a positive value. From this it follows that after a point the principle of the diminishing marginal external consumption effect must manifest itself. We thus have in the snob effect an opposite but completely symmetrical relationship to the bandwagon effect.

6. If consumers have accurate expectations of the degree of enthusiasm with which others will take up the product, then they will expect demand to be  $T + 20$  units.

7. This is a "pure" case where *all* buyers are governed by taboo considerations.

The analysis of markets in which all consumers behave as snobs follows along the same lines as our analysis of the bandwagon effect. Because of the similarity we will be able to get through our analysis of the snob effect in short order. We begin, as before, by letting the alternate total market demands that serve as parameters for alternate individual demand curves be indicated by the superscripts  $a, b, \dots, n$  (where  $a < b < n$ ). Let the individual demand functions be  $d_1, d_2, \dots, d_n$ , where there are  $n$  consumers in the market. Again,  $d_3^a$  signifies the individual demand curve for consumer 3 on the assumption that he expects the total market demand to be " $a$ " units. By adding

$$d_1^a + d_2^a + \dots + d_n^a = D^a$$

$$d_1^b + d_2^b + \dots + d_n^b = D^b$$

$$\vdots$$

$$d_1^n + d_2^n + \dots + d_n^n = D^n$$

we obtain the market demand functions on the alternate assumptions of consumers expecting the total market demands to be  $a, b, \dots, n$ . Due to snob behaviour the curves  $D^a, D^b, \dots, D^n$  move to the left as the expected total market demand increases. This is shown in Figure 3. Using the same procedure as before we obtain the virtual equilibrium points  $E^a, E^b, \dots, E^n$ . They represent the only points on the curves  $D^a, D^b, \dots, D^n$  that are consistent with consumers' expectations (and hence with the assumption of accurate information). The locus of these virtual equilibrium points is the demand curve  $D_s$ .

Now, given a price change from  $P_2$  to  $P_1$  we can separate the effect of the price change into a price effect and a snob effect. In Figure 3 we see that the net increase in the quantity demanded due to the reduction in price is  $ab$ . The price effect, however, is  $ax$ . That is, if every consumer expected no increase in the total quantity demanded then the total quantity demanded at  $P_1$  would be  $Ox$ . The more extreme snobs will react to this increase in the total quantity demanded and will leave the market.<sup>8</sup> The total quantity demanded will hence be reduced by  $bx$ . The net result is therefore an increase in demand of only  $ab$ .

It may be of interest to examine some of the characteristics of the curves in Figure 3. First we may note that all the points on the curves other than  $D_s$  (except  $E^a, E^b, \dots, E^n$ ) are theoretical points that have significance only under conditions of imperfect knowledge.

8. The other snobs will, of course, reduce their demand but not by an amount large enough to leave the market.

Second, we may note from the diagram that the demand curve for snobs is less elastic than the demand curves where there are no snob effects. The reason for this, of course, is that the increase in demand due to a reduction in price is counterbalanced, in part, by some snobs leaving the market because of the increase in total consumption (*i.e.*, the decrease in the snob value of the commodity). It should be clear,

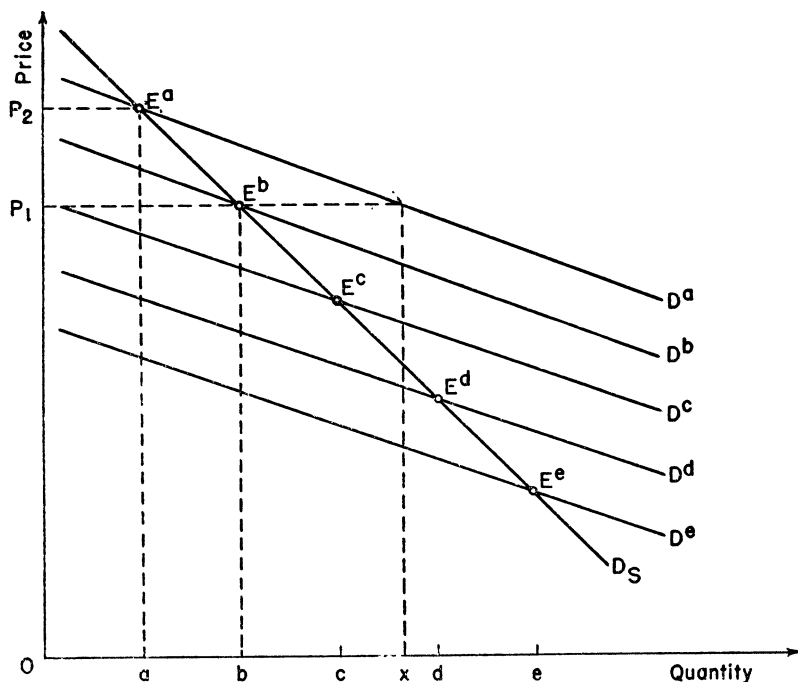


FIGURE 3

however, that the snob effect, as defined, can never be in excess of the price effect since this would lead to a basic contradiction. If the snob effect were greater than the price effect, then the quantity demanded at a lower price would be less than the quantity demanded at a higher price. This implies that some of the snobs in the market at the higher price leave the market when there is a reduction in the total quantity demanded; which, of course, is patently inconsistent with our definition of snob behaviour. It therefore follows that the snob effect is never greater than the price effect. It follows, also, that  $D_s$  is monotonically decreasing if  $D^a, D^b, \dots, D^n$  are monotonically decreasing.<sup>9</sup>

9. We shall see below however that the snob effect plus the Veblen effect combined can be greater than the price effect.

Finally, it may be interesting to note another difference between the usual functional demand curve and the  $D_S$  curve. In the usual demand curve the buyers at higher prices always remain in the market at lower prices. That is, from the price point of view, the bids to buy are cumulative downward. This is clearly not the case in the  $D_S$  curve. Such terms as intramarginal buyers may be meaningless in snob markets.

V. THE VEBLEN EFFECT

Although the theory of conspicuous consumption as developed by Veblen and others is quite a complex and subtle sociological

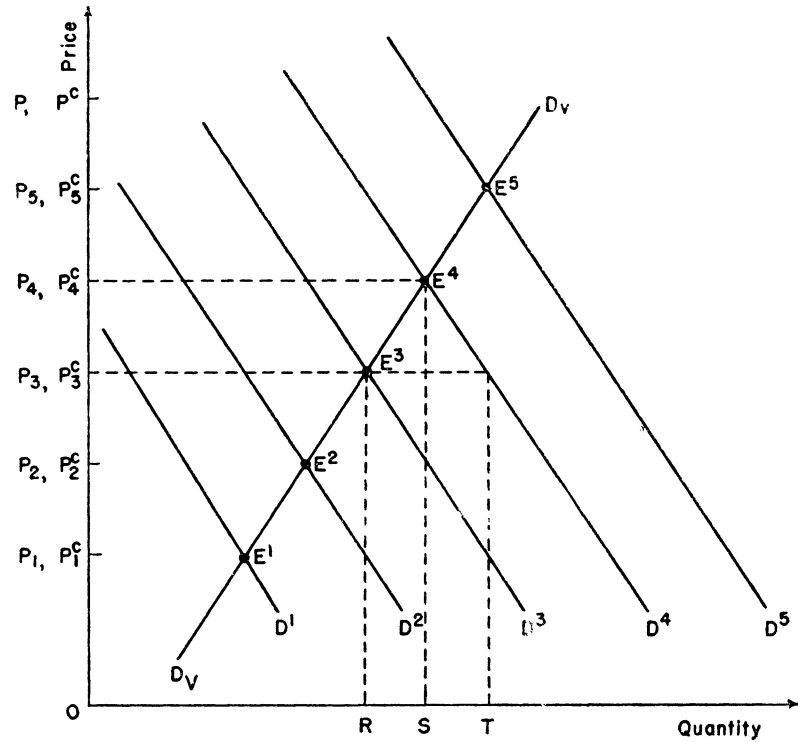


FIGURE 4

Price effect = ST  
Veblen effect = - TR  
Net effect = - SR

construct we can, for our purposes, quite legitimately abstract from the psychological and sociological elements and address our attention exclusively to the effects that conspicuous consumption has on the

demand function. The essential economic characteristic with which we are concerned is the fact that the utility derived from a unit of a commodity employed for purposes of conspicuous consumption depends not only on the inherent qualities of that unit, but also on the price paid for it. It may, therefore, be helpful to divide the price of a commodity into two categories; the real price and the conspicuous price. By the real price we refer to the price the consumer paid for the commodity in terms of money. The conspicuous price is the price other people think the consumer paid for the commodity<sup>1</sup> and which therefore determines its conspicuous consumption utility. These two prices would probably be identical in highly organized markets where price information is common knowledge. In other markets, where some can get "bargains" or special discounts the real price or conspicuous price need not be identical. In any case, the quantity demanded by a consumer will be a function of both the real price and the conspicuous price.

The market demand curve for commodities subject to conspicuous consumption can be derived through a similar diagrammatical method (summarized in Figure 4). This time we let the superscripts 1, 2, . . . ,  $n$  stand for the expected conspicuous prices. The real prices are  $P_1, P_2, \dots, P_n$ . The individual demand functions are  $d_1, d_2, \dots, d_n$ . In this way  $d_6^3$  stands for the demand curve of consumer number 6 if he expects a conspicuous price of  $P_3^c$ .<sup>2</sup> We can now add across  $d_1^1, d_2^1, \dots, d_n^1$  and get the market demand curve  $D^1$  which indicates the quantities demanded at alternate prices if all consumers expected a conspicuous price of  $P_1^c$ . In a similar manner we obtain  $D^2, D^3, \dots, D^n$ . The market demand curves will, of course, up to a point, shift to the right as the expected conspicuous price increases. Now on every curve  $D^1, D^2, \dots, D^n$  in Figure 4 only one point can be a virtual equilibrium point if we assume that consumers possess accurate market information — the point where the real price is equal to the conspicuous price (that is, where  $P_1 = P_1^c, P_2 = P_2^c, \dots, P_n = P_n^c$ ). The locus of these virtual equilibrium points  $E^1, E^2, \dots, E^n$  gives us the demand curve  $D_V$ .

As before, we can separate the effects of a change in price into two effects — the price effect, and, what we shall call for want of a better term, the Veblen effect. In Figure 4 it will be seen that a

1. More accurately, the conspicuous price should be the price that the consumer thinks other people think he paid for the commodity.

2. The expected conspicuous prices are distinguished from the real prices by adding the superscript  $c$  to the  $P$ 's. Thus, to the range of real prices  $P_1, P_2, \dots, P_n$ , we have a corresponding range of conspicuous prices denoted by  $P_1^c, P_2^c, \dots, P_n^c$ .

change in price from  $P_4$  to  $P_3$  will reduce the quantity demanded by  $RS$ . The price effect is to increase the quantity demanded by  $ST$ ; that is, the amount that would be demanded if there were no change in the expected conspicuous price would be  $OT$ . However, at the lower price a number of buyers would leave the market because of the reduced utility derived from the commodity at that lower conspicuous price. The Veblen effect is therefore  $RT$ .

It should be noted that unlike the  $D_S$  curve, the  $D_V$  curve can be positively inclined, negatively inclined or a mixture of both. It all depends on whether at alternate price changes the Veblen effect is greater or less than the price effect. It is possible that in one portion of the curve one effect may predominate while in another portion another may predominate. It is to be expected, however, that in most cases, if the curve is not monotonically decreasing it will be shaped like a backward S, as illustrated in Figure 5A. The reasons for this are as follows: First, there must be a price so high that no units of the commodity will be purchased at that price owing to the income constraint (among other reasons). This is the price  $P_n$

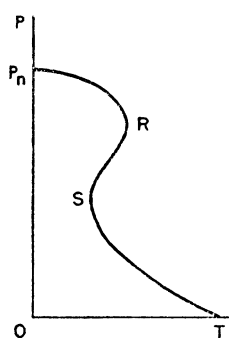


FIGURE 5A

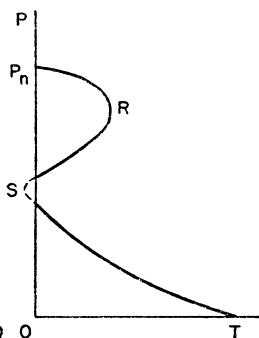


FIGURE 5B

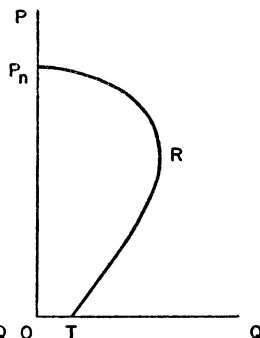


FIGURE 5C

in Figure 5A, and it implies that there must be some point at which the curve shifts from being positively inclined to being negatively inclined as price increases. Second, there must be some point of satiety for the good. This is the point  $T$  in Figure 5A. It therefore follows that some portion of the curve must be monotonically decreasing to reach  $T$  if there exists some minimum price at which the Veblen effect is zero. It is of course reasonable to assume that there is some low price at which the commodity would cease to have any value for purposes of conspicuous consumption. If this last assumption does not hold, which is unlikely, then the curve could have the shape

indicated in Figure 5C. Otherwise, it would have the general shape indicated in Figure 5A, or it might be in two segments as illustrated in Figure 5B.

## VI. MIXED EFFECTS

Any real market for semidurable or durable goods will most likely contain consumers that are subject to one or a combination of the effects discussed heretofore. Combining these effects presents no new formal difficulties with respect to the determination of the market demand curve, although it complicates the diagrammatic analysis considerably. The major principle, however, still holds. For any price there is a quantity demanded such that the marginal external consumption effect (or the marginal Veblen effect) for all buyers but one, is zero. This implies that for every price change there is a point at which people cease reacting to each other's quantity changes, regardless of the direction of these reactions. If this is so, then for every price there is a determinate quantity demanded, and hence the demand curve is determinate.

Now, for every price change we have distinguished between the price effect and some other, such as the snob, the Veblen, or the bandwagon effect. In markets where all four effects are present we should be able to separate out and indicate the direction of each of them that will result from a price change. That is, every price change will result in two positive and two negative effects — two which, other things being equal, will increase the quantity demanded, and two which, other things being equal, will decrease it. Which effects will be positive and which will be negative will depend on the relative strength of the Veblen effect as against the price effect. The Veblen and the price effects will depend directly on the direction of the price change. An increase in price will therefore result in price and bandwagon effects that are negative, and in Veblen and snob effects that are positive, provided that the price effect is greater than the Veblen effect; that is, if the net result is a decrease in the quantity demanded at the higher price. If, on the other hand, the Veblen effect is more powerful than the price effect, given a price increase, then the bandwagon effect would be positive and the snob effect negative. The reverse would of course be true for price declines.

The market demand curve for a commodity where different consumers are subject to different types of effects can be obtained diagrammatically through employing the methods developed above — although the diagrams would be quite complicated. There is no point in adding still more diagrams to illustrate this. Briefly, the



method would be somewhat as follows: (1) Given the demand curves for every individual, in which the expected total quantity demanded is a parameter for each curve, we can add these curves laterally and obtain a map of aggregate demand curves, in which each aggregate curve is based on a given total quantity demanded. (2) The locus of the equilibrium points on each aggregate demand curve (as derived in Figure 1) gives us a market demand curve that accounts for both bandwagon and snob effects. This last curve assumes that only one conspicuous price exists. For every conspicuous price there exists a separate map of aggregate demand curves from which different market demand curves are obtained. (3) This procedure yields a map of market demand curves in which each curve is based on a different conspicuous price. Employing the method used in Figure 4 we obtain our final market demand curve which accounts for bandwagon, snob, and Veblen effects simultaneously.

## VII. CONCLUSION

It is not unusual for a writer in pure theory to end his treatise by pointing out that the science is really very young; that there is a great deal more to be done; that the formulations presented are really of a very tentative nature; and that the best that can be hoped for is that his treatise may in some small way pave the road for future formulations that are more directly applicable to problems in the real world.<sup>3</sup> This is another way of saying that work in pure theory is an investment in the future state of the science where the returns in terms of applications to real problems are really very uncertain. This is probably especially true of value theory where the investment in time and effort is more akin to the purchase of highly speculative stocks rather than the purchase of government bonds. Since this was only a brief essay on one aspect of value theory, the reader will hardly be surprised if the conclusions reached are somewhat less than revolutionary.

Essentially, we have attempted to do two things. First, we have tried to demonstrate that non-additivity is not necessarily an insurmountable obstacle in effecting a transition from individual to collective demand curves. Second, we attempted to take a step or two in the direction of incorporating various kinds of external consumption effects into the theory of consumers' demand. In order to solve our problem, we have introduced what we have called the principle of the diminishing marginal external consumption effect.

3. See, for example, Samuelson, *Foundations of Economic Analysis*, p. 350, and Joan Robinson, *Economics of Imperfect Competition*, p. 327.

We indicated some reasons for believing that for every individual, there is some point at which the marginal external consumption effect is zero. We have attempted to show that if this principle is admitted, then there are various ways of effecting a transition from individual to collective demand curves. The major conclusion reached is that under conditions of perfect knowledge (or accurate expectations) any point on the demand curve, for any given price, will be at that total quantity demanded where the marginal external consumption effect for all consumers but one, is equal to zero.

In comparing the demand curve in those situations where external consumption effects are present with the demand curve as it would be where these external consumption effects are absent, we made three basic points. (1) If the bandwagon effect is the most significant effect, the demand curve is more elastic than it would be if this external consumption effect were absent. (2) If the snob effect is the predominant effect, the demand curve is less elastic than otherwise. (3) If the Veblen effect is the predominant one, the demand curve is less elastic than otherwise, and some portions of it may even be positively inclined; whereas, if the Veblen effect is absent, the curve will be negatively inclined regardless of the importance of the snob effect in the market.

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