"Summary of article by Kelvin Lancaster: Change and Innovation in the Technology of Consumption" in Frontier Issues in Economic Thought, Volume 2: The Consumer Society. Island Press: Washington DC, 1997. pp. 222-225

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Conventional economic theory assumes that consumers have desires for goods, and that they obtain satisfaction or utility directly from these goods. This article proposes that consumers actually desire certain characteristics provided by goods rather than goods themselves. That seemingly minor modification leads to significant changes in the economic theory of consumer behavior.[1]

CHARACTERISTICS AND THE CONSUMPTION FRONTIER

Consumption of a good typically provides a bundle of characteristics which consumers want. The consumer's demand for goods is derived from the fact that goods are required to obtain the desired characteristics. For example, a person who eats an apple enjoys a combination of flavor, texture, and juiciness. A different apple may yield a different mix of the same characteristics -- perhaps better flavor but worse texture. To develop a model of consumption, assume that characteristics are intrinsic and objective properties of goods, and that twice as much of a good provides twice as much of each of its characteristics. Psychological effects, such as diminishing marginal utility, are assumed to affect the consumer's preferences for characteristics, rather than the technical relationship between goods and characteristics.

There is a partial analogy between this approach and the theory of production. Goods are viewed as inputs into a process that produces characteristics. However, a typical production process has joint inputs and a single output, while consumption activities have one or a few inputs which jointly produce several characteristics. Extending the analogy to production, we may refer to the set of consumption activities (i.e., the relationships between available goods and characteristics) as the consumption technology.

It seems likely that in an economy like the U.S., with a complex consumption technology, the number of goods exceeds the number of characteristics. This leads to patterns of consumer choice and substitution that cannot arise in standard economic theory, as shown in the following example of a consumer choosing among three goods that provide two characteristics.

In the graph, point A represents the characteristics obtained if the consumer's entire budget is spent on the first good; other points on line OA represent smaller purchases of the first good. Point B and line OB are defined similarly for the second good. By spending the budget on a

combination of the first two goods, any point on the straight line AB can be reached. This is the consumption efficiency frontier for the first two goods.

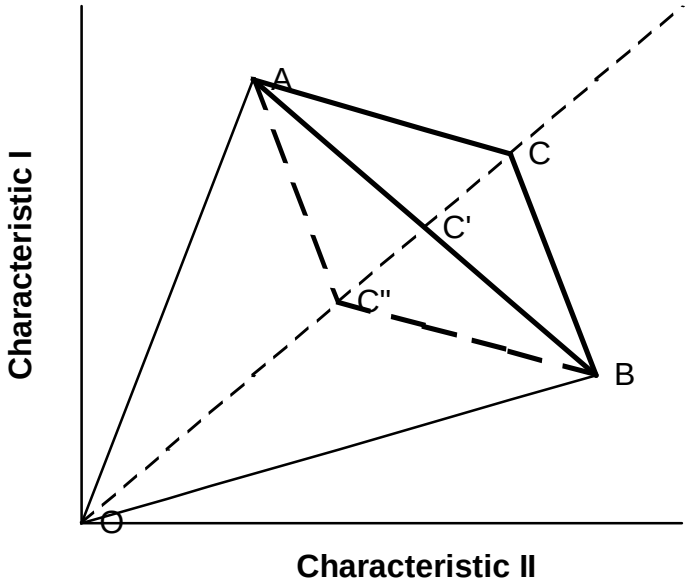

Figure 1. Patterns of Consumer Choice.

Now consider the third good, which yields the combination of characteristics shown on line OC. If the price of the third good is low enough that the consumer can afford to reach point C, then any point on lines AC and CB can also be reached by buying a combination of goods; these two lines have become the consumption frontier. But if the price rises so that the consumer can only afford to reach C″, then AB is the consumption frontier and no rational consumer will buy the third good. Thus price changes can lead to substitution between goods solely as a result of consumption efficiency without the conventional assumption of convexity of preferences.

INEFFICIENT CONSUMPTION AND TECHNICAL CHANGE

Can there be innovation and technical progress in consumption technology, as in production? It is hard to identify cases in which the same inputs (goods) are combined more efficiently to yield more output (characteristics), since it is frequently impossible to measure characteristics directly. Nonetheless, technical progress can occur through the introduction of new consumption activities involving either new goods or new characteristics.

Just as technical progress is possible in consumption, so too is inefficiency. Both production and consumption technologies are complex, and ignorance and lack of managerial skill are the principal reasons for inefficiency in both cases. But there is a difference: there is no market in characteristics and hence no market pressure for efficiency in consumption. A consumer who erroneously selects point C″ when any point on line AB is attainable is not driven out of the

consumption business by competition. Rather than revealing a preference for the third good, such a consumer may simply be revealing ignorance; better information might lead the consumer to make different, more satisfying choices. Inefficiency is most likely to occur when traditional consumption patterns break down under the impact of technical innovations or rapid changes in relative prices; e.g. when a society is undergoing a transition from a traditional to a market economy or when it is experiencing rural to urban or other regional migration. Particularly in such cases, there is a valuable role for labeling laws and other consumer product regulations, as well as consumer information and education services. These measures increase knowledge of the available consumption technology, a type of knowledge which is a public good since the efficiency frontier is the same for all consumers.

NEW GOODS AND OLD CHARACTERISTICS

Traditional consumer theory is at its most unenlightening when confronted by the problem of new goods. Introduction of a new good requires either that the preference function defined on n goods is thrown away, and with it all the knowledge of behavior based on it, and replaced by a brand new function defined on $n+1$ goods, or the fiction that the consumer has a potential preference function for all goods present and future and that a new good can be treated as the fall in that good's price from infinity to its market level. Neither approach gets us very far. (20)

In the case of new goods which possess new characteristics, the theory proposed here does no better. But almost all new goods give rise to existing characteristics in new proportions. A new good of this kind adds a new activity to the consumption technology and should be viewed as an innovation in that technology. Whether the innovation is efficient depends entirely on the price of the good. Even minor product variations may offer slightly different combinations of characteristics and, if priced attractively, may thereby expand the consumption efficiency frontier and increase consumer welfare. However, if a firm withdraws an old product that was still being purchased and replaces it with a different newer one, it is not certain that aggregate welfare has increased.

The mode of analysis suggested here may be applied to problems beyond consumption. If consumers are buying bundles of characteristics rather than goods, then producers are ultimately making and selling bundles of characteristics as well. A theory of the firm could be developed based on production of and competition in marketing of characteristics. The supply of labor is also governed by the characteristics of jobs, as suggested by the familiar idea that some jobs have significant nonmonetary advantages. The consumer's sale of labor, like the purchase of commodities, may be a matter of transactions involving bundles of characteristics.

Notes

1. For a more rigorous and detailed mathematical presentation see Kelvin Lancaster, "A New Approach to Consumer Theory," *Journal of Political Economy* 74 (April 1966):132-157.