MULTI-DISCIPLINARY FOUNDATIONS FOR A CONSUMER CODE OF ETHICS **

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The ethical responsibilities of consumers can be inferred from President Kennedy's Consumer Bill of Rights. An analysis of the contributions of various disciplines to the study of consumer affairs indicates numerous bases for ethical guidelines for consumers. From this analysis, four principles emerge which appear to be reasonably internally consistent, although idealistic.

The conference theme, "Ethics and the Consumer Interest," is particularly interesting because, as C.J. Lewis has said: "In all the world and in all of life there is nothing more important to determine than what is right" (33:182). Unfortunately, when ethics are discussed it is often someone else's ethics that are being analyzed. For example, consumers often question the rightness of behavior of advertisers, merchants, manufacturers, doctors, lawyers and other marketplace participants with whom they have contact. Some groups, for example physicians (62), lawyers (74), and marketers (17) have codified their professional beliefs regarding correct behavior.

The consumer literature, on the other hand, lacks a significant amount of discussion of consumers' ethics. Indeed, this literature reflects a highly unbalanced concern for the consumers' rights, as first articulated by John F. Kennedy in 1963. The rights of consumers, by definition, become the responsibilities of someone, either legal or moral, both of which imply behavior that "ought to be". The study of such behavior is the domain of the philosophical discipline of ethics (45).

This imbalance is understandable, given the youth of consumer affairs as an area of study, and is most certainly a function of the current period in American economic history. As a nation progresses from an agricultural to industrial to post-industrial condition (4, 68), the focus shifts across economic groups (producers, laborers, distributors, consumers) and from rights to a recognition that responsibilities must accompany rights if long term stability is to occur in a mature society.

Adam Smith first pointed out the centrality of the consumer to a market economy in 1776. It is this centrality that requires consumer responsibilities in the marketplace to be assessed before those of other participants since some responsibilities must accompany the consumer rights to information, choice, safety, and voice. The residual responsibilities then accrue to other marketplace participants in a systems view of the marketplace. It would appear that in a very real sense all consumerist pressure in our society can be accounted for by the logic that someone (or some institution) has not carried out the responsibility associated with a recognized consumer right. Admittedly, this form of analysis relies upon the ideal condition, the "ought to be" of the marketplace, that all rights have clear responsibilities attached for specific marketplace participants. But, then, the study of ethics centers upon ideals and oughts, without which ethical guidelines and standards could not be established. Most ethical scholars do not accept the validity of using an "elastic ruler" in measuring the rightness of human behavior!

The study of consumer affairs has been enriched by contributions from many disciplines, including economics, marketing, home economics, sociology, law, psychology, environmentalism/futurism, and political science. But each of these disciplines has its own perspective, and an implied value structure that potentially clouds the issue of proper consumer behavior since the applications of disciplinary rules may result in differing and conflicting prescriptions. For example, sociologists and environmentalists generally consider the collective good of people to be more important than individual welfare. Economists, on the other hand, have micro decision rules which emphasize personal utility as the criterion.

The purpose of this paper is to assess whether the above disciplines have basic perspectives, central concepts, and application outcomes from which a code of consumer ethics may be derived. (The ethical codes of physicians, lawyers, and marketers have been similarly derived from their discipline's perspectives and central concepts.) A consumer code of ethics should logically be rooted in the multi-disciplines of consumer affairs.

Consumer Responsibilities: A Multi-Disciplinary View

The literature of each of the root disciplines that could be considered basic to the study of consumer affairs has been analyzed according to:

1. its basic perspectives: the orientation, purpose, or direction of its literature and teaching.

2. its central concepts: those terms, ideas, and variables unique to the area which are most often used to communicate with others about its findings and unique knowledge, and

3. its disciplinary application: that is, how its central concepts and basic perspectives are combined by typical practicing professionals of the field to impact upon society.

Each discipline is characterized (see Tables I-VIII) according to these descriptors which are then used to derive or infer plausible disciplinary positions on consumer rights and responsibilities. This process is necessary because, as Bensman and Lilienfeld note in their study of the sociology of knowledge:

> ...society does not present itself in a direct, unambiguous, and constraining manner. Instead, the social analyst selects his facts in terms of some perspective which is independent of the facts, but having arrived at a perspective, he

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can order the facts that had been selected only because he uses a particular perspective (5:158).

This ordering of facts via a particular perspective introduces bias by interjecting (unspecified) values into the disciplinary mode of analysis. The above authors cite economics as an example of this phenomenon:

> Economics has an advantage and a limitation in that, having developed in societies in which monetary systems were present, it is subject to quantification. The initial quantification is of course that of a monetary economy. This results in the possibility of objective measurement of economic variables, and leads to the claim that economics, among the social sciences, is particularly scientific...the very complexity of notational systems and techniques employed, all have the effect of heightening the appearances of science, of emphasizing the professional and technical virtuosity necessary to practice the science or art, and at the same time to obscure the ideological biases and commitments concealed in the assumptions of the field. Economics, like all other highly professional and technological fields, achieves an objectivity, rationality, and scientific character by obscuring its ideological and normative roots (5:140-41, 144-45).

To the degree that this is true in any given field of the social sciences, it is an even greater problem in a multidisciplinary field such as consumer affairs.

Tables I through VIII capsulize the essence of a contributing discipline as it applies to the consumer and the consumer's marketplace rights and responsibilities. The inferred responsibilities may have a legal and/or moral foundation, both of which can be traced as ethical obligations to such ancient writings as Plato's Crito and the Republic (33). The reader is invited to carefully review each table to become familiar with how the essence of each discipline can provide the basis for inferring that discipline's position on consumer rights and ethical responsibilities. The tables are not exhaustive due to space limitations and the reader is invited to add his/her own insights.

Table IX is a summary of consumer responsibilities associated with each consumer right, presented by discipline.

A Possible Code of Ethics for Consumers

Based upon an analysis of the tables, it is clear that each discipline provides one or more foundations for a possible code of ethics for consumers. In the creation of a code of this sort, the following traditions from the discipline of philosophy are particularly useful to keep in mind:

1. Ethical codes in modern applications are by their nature guidelines, rather than absolutes (62, 33:204).

2. Each action evaluated against the standard specified in the code must be capable of being judged in light of the motivation of the actor, since generally accepted moral rules may conflict at times with another self evident duty (33:204). In effect, the moral man can do no more than try his best to do what is objectively right (33:233). Guidelines, rather than absolute rules, support this effort.

3. Truth is developing, as is man and his ethical tools (33:191). Therefore, new insights should be expected to emerge with time.

4. Kant's "categorical imperative"..."Act as if the maxim of your action were to become through your will a universal law of nature" (33:210) ...is a useful summary test to which any human behavior can be subjected.

In addition, if the systems perspective in viewing marketplace rights and responsibilities is to be used, it is imperative that a consumer code of ethics protects those with whom the consumer interacts, as well as guides the consumer toward "proper" actions in all situations.

A code of ethics embodying this intent, consistent with the traditions in philosophical thought outlined above, and encompassing the ethical responsibilities summarized in Table IX, would include at least the following points:

1. Consumers should strive to make market choices which maximize personal or family functional and/or socio-psychological utility from assortments of legal sellers based upon an analysis of needs. Chosen products should not be environmentally negative and their use should not infringe on the rights of other consumers.

2. Consumers should strive to expose themselves to all available information prior to marketplace choice and make a reasonable effort to determine its true meaning. Such information should be utilized in a rational, independent manner to arrive at a balanced decision which weights personal/family utility against potential negative social or environmental impacts.

3. Consumers should strive to know and understand any physical risks associated with product usage, to learn proper use and potential misuse of products by following seller's usage instructions, and to utilize all products in only those ways which do not infringe on the physical, psychological, and environmental safety of other consumers.

4. Consumers should strive to communicate in an honest and fair manner significant facts, needs, satisfactions, and dissatisfactions regarding marketplace phenomenon and participants to appropriate business people and government regulators. Such efforts may be individualistic and/or group oriented, as required to correct the perceived problem.

Conclusion

The ethical responsibilities of consumers can be inferred from the rights of consumers as recognized in President Kennedy's 1963 Consumer Bill of Rights. An analysis of the contributions of

TABLE 1: Economics

Basic Perspectives	Some Central Concepts	Application Outcome
assumes desirability of consumer sovereignty & competitive markets consumer is assumed to make rational decisions in attempting to maximize his utility assumes that goods with collective characteristics will not be generated by private markets	. elasticity of demand . law of demand . market structure . price as an allocating mechanism . utility	knowledge of the functioning of markets and an aid in economic decision making allocative efficiency optimum resource allocation an adequately competitive market structure with adequate information and choice in order that societal welfare will be optimized

Derived Positions on Consumer Rights & Responsibilities

to choice	to information	to safety	to be heard
right: to a maximum of choice to ensure allocative efficiency responsibility: consumer presumed to make discriminating choices (to maximize his utility) responsibility: to use political mechanism to generate desired collective goods	right: to adequate objective information in order to enable him to calculate the opportunity costs of any given purchase decision responsibility: consumer is presumed to use objective information rationally when it is furnished	right: consumer has a right to know the risks or liabilities of a product responsibility: with knowledge of risk, consumer is presumed to act in his own best interests	right: consumers should be allowed redress or protection in cases where market is imperfect responsibility: consumer is presumed to take advantage of such protection if it is in his best interest

SOURCES:

Hailstones and Brennan, 1975; Hansen, 1957; Katona and Mueller, 1954; Lancaster, 1975; Lowell, 1974; McConnel, 1969; Mill, 1926; Smith, 1776; Taylor, 1960.

TABLE II: Marketing

Basic Perspectives	Some Central Concepts	Application Outcome
assumes long-run viability of business organization to be dependent on its ability to satisfy consumer needs assumes socio-psychological as well as functional aspects of product/service offering important in serving consumer needs assumes the above consumer-oriented business philosophy (marketing concept) to be desirable for society and consumers as well as businesses	. marketing concept . markets and market segments . product . product differentiation . product life-cycle . the four p's (product, price, promotion, place)	knowledge of marketing processes and an aid in marketing decision making for managers business profit consumer satisfaction competitive market strategy influencing of consumer behavior distribution of economic goods and services

Derived Positions on Consumer Rights & Responsibilities

to choice	to information	to safety	to be heard
right: to a number of choices restricted only by lack of demand responsibility: to seek out choices that one perceives as maximizing his functional and/or socio-psychological need satisfaction	right: to any nonfraudulent information which is provided by the market responsibility: to discern information which is relevant to the satisfaction of one's needs	right: consumer should be given choice of safety features in products if they are demanded responsibility: to use products according to seller's instructions	right: to be assured that sellers make reasonable effort to determine consumer needs responsibility: to make needs known to sellers through purchase decisions and cooperation with marketing research efforts

SOURCES:

Alrapiro, 1973; Borden, 1964; Fisk, 1973, 1974; McCarthy, 1975; Resenberg, 1977; Stampfl, 1978 A; Stanton, 1975; Webster, 1974; Yankelsvich, 1973.

TABLE III: Home Economics

Basic Perspectives	Some Central Concepts	Application Outcome
Assumes the desirability of applying scientific principles to various aspects of family living such as child development, family management and economics, decisions, foods, clothing and housing Assumes desirability of educating individuals, families, and organizations in making intelligent personal and policy decisions concerning family living.	. Consumer and family policy . Consumer economics . Consumer education . Family decision making . Family economics . Family resources . Family service objective . Home management . Specific product orientation	knowledge of family processes and technology and an aid to individuals, families, and organizations in decision making concerning family living increase level of living

Derived Positions on Consumer Rights & Responsibilities

to choice	to information	to safety	to be heard
right: consumer has right to choose any product which helps maximize household efficiency responsibility: consumer has responsibility to evaluate alternatives in terms of family objectives, functional attributes, and personal values.	right: consumer has right to an adequate amount of objective information and education in order to rationally evaluate alternatives in terms of the household and/or family responsibility: to seek out adequate information and education in order to achieve household and/or family objectives	right: consumer has right to minimum safety standards and right to information about any potential hazards responsibility: to learn proper use and potential misuse of products purchased and to exercise reasonable caution	right: consumer should be allowed convenient recourse in the case of purchases of defective products responsibility: to consider purchase decisions thoroughly enough to prevent return except in the case of defective merchandise; to communicate market dissatisfaction to appropriate individuals

SOURCES:
Ferber and Birnbaum, 1977; Fetterman, 1976; Gross, Crandall and Knoll, 1973; Kyrk, 1933; Paolucci, 1973; Price, 1943; Ricknell and Dorsey, 1967; Tate, 1973.

TABLE IV: Sociology

Basic Perspectives	Some Central Concepts	Application Outcome
Assumes societal and subgroup structure to be important determinants of group as well as individual behavior	. culture . group . social stratification . socialization . values	knowledge of group processes and an aid in social decision making design of social systems in order to accomplish societal and group objectives

Derived positions on Consumer Rights and Responsibilities

to choice	to information	to safety	to be heard
right: consumer should have available products that conform to collectively determined standards (or norms) of society responsibility: when making purchase decisions consumers should consider the effects on and expectations of their family, other relevant groups and society as a whole	right: to be allowed any information that does not lead to unacceptably deviant behavior responsibility: to control any information deemed undesirable for oneself, one's family and society at large.	right: to be assured of minimum basic safety standards (i.e., safety norms) for all products responsibility: to use products according to the expectations of other group members (i.e., conforming to norms and minimizing negative group impact of one's behavior)	right: to have access to membership in groups which have enough power to effectuate certain social changes advantageous to the consumer responsibility: to affiliate oneself with groups that promote relevant consumer views

SOURCE:
Berry, 1974; Degre, 1970; Hodge, 1971; Horton and Hunt, 1964; Inkeles, 1964; Olson, 1975.

TABLE V: Law

Basic Perspectives	Some Central Concepts	Application Outcome
Assumes some degree of social order to be preferrable to anarchy Assumes that various legal institutions, laws, and mechanisms are necessary to establish, enforce and administer the desired social order	. adversary proceeding . caveat emptor . common law . constitution . contract . criminal law . civil law . federal system . law . tort . warranty	social order stability justice

Derived Positions on Consumer Rights & Responsibilities

to choice	to information	to safety	to be heard
right: to have available a number of legal choices not resricted by illegal (e.g., monopolistic) practices responsibility: to seek out alternatives to the unlawful seller	right: to be assured that information about products and/or services is not illegally deceptive responsiblity: to make reasonable effort to determine true meaning of information	right: to be assured of a reasonable amount of safety responsibility: to not be negligent in one's use of products	right: to adequate legal recourse to grievances and to a legal process for the orderly pursual of procedural and substantive changes responsibility: to exert reasonable effort in using the legal process to obtain justice

SOURCES: Berger and Templin, 1969; Changing Times Education Service, 1971; Edmunds, 1959; Teldman, 1976; Friedman, 1973; Kinter, 1971; Leiser, 1969; Marshall, 1966; Mayers, 1964; Schrag, 1974.

TABLE VI: General Psychology

Basic Perspectives	Central Concepts	Application Outcome
Individual mental functioning and behavior are the focus of analysis External influences or stimuli are presumed to affect and/or be processed by unobservable mental constructs (such as attitudes) which in turn influence overt behavior	. attitudes . learning . motives . perception	knowledge of individual mental processes and behavior contribution to information dissemination and assimilation and to educational objectives understanding and treatment of maladjustment, mental illness, and pathologically deviant behavior
	Humanistic Psychology	
Assumes that man is uniquely free being who defies atomistic approaches to understand his nature certain internal mental processes in contrast to behavior are resistent to external reinforcement systems	. free will . reflective consciousness . self-actualization	knowledge of human as opposed to animal nature contribution to individual & organizational decision making concerning the maximization of the human potential of individuals and groups
	Behavioral Psychology	
Behavior is analyzed as the only relevant dependent variable Individual behavior viewed as output or consequence of particular set of inputs Assumes, therefore, that behavior can be controlled or determined through control of relevant inputs	. behavior reinforcement . determinism . operant conditioning	the modifying of undesirable behavior through appropriate reinforcement the shaping of "desirable" behavior for societal objectives

Derived Positions from Humanistic Psychology on Consumer Rights & Responsibilities

to choice	to information	to safety	to be heard
right: to maximum of choice in order to provide opportunities for individual to reach full potential responsibility: to know oneself well enough to choose wisely	right: to have a maximum amount of information available in order to increase the probability of making a fulfilling decision responsibility: to expose oneself to a maximum of information in order to actively determine one's own fate	right: consumer right to knowledge in dealing with any potential hazards of products purchased responsiblity: to understand the amount of risk which one is capable of living with comfortably	right: consumer should have feeling that he has some control over the political and business process responsibility: consumer must exert reasonable effort to affect political and economic environment

SOURCES: Allport, 1937; Bourne, 1973; Maclon, 1961; Sherif and Sherif, 1969; Wickens, 1961

TABLE VII: Environmentalists/Futurists Literature

Basic Perspectives	Some Central Concepts	Application Outcome
Assumes that social and environmental costs of production and consumption are not factored fully into resource costs and selling prices or otherwise accounted for in the marketplace	. closed and open systems . ecology . externatlities . population control . public resource management . quality of life . social and environmental costs	knowledge of the intricate interrelationships among variables in man's environment legislation to mandate full social accountability, optimum resource management and population control the preservation and/or enhancement of the quality of life

Derived Positions on Consumer Rights & Responsibilities

to choice	to information	to safety	to be heard
right; consumer has right to be able to purchase products which do not have negative social and/or environmental externalities responsibility: consumer has responsibility to not purchase socially or environmentally negative products and to otherwise support their removal from market	right: consumer should be furnished with information about social and environmental aspects of products responsibility: consumer is presumed to consider social and environmental impacts of his decisions if he is exposed to balanced information	right: consumer has right to assume that any product he purchases will not be harmful to environment and that environment will be preserved and even improved for present and future generations. responsibility: to not be environmentally reckless in one's use of products	right: to be assured that business and government will weigh social & environmental consequences of their decisions for both short and long run responsibility: to make views known to politicians, regulators and businessmen

SOURCES: Boulding, 1971; Carson, 1962; Chisholm, 1972; Dansereau, 1971; Douglas, 1972; Ehrlich, 1974; Forrester, 1976; Fritsch,1974; Henderson, 1974; Huxley, 1968; Mead, 1970; Meadows, 1972; Sickle, 1971; Spilhaus, 1972; Theobald and Mills, 1973.

TABLE VIII: Political Science

Basic Perspectives	Some Basic Concepts	Application Outcomes
Assumes political interrelationships among government institutions, private organizations, and individuals to be important determinants of individual and societal welfare Assumes political institutions should be a reflection of man's nature and/or that they are influential in modifying that nature Assumes American political values and institutions to be largely based on individualist philosophy (e.g., Classical Liberalism) Assumes desirability of balanced representation of various political interests	. Civil rights . Classical Liberalism . diffusion (of group interest) . individualist vs. collectivist political philosophies . intensity (of group interest . liberty . obligations of government . representation . state as a means not an end	design of political systems to adequately represent legitimate individual and group interests improvement of political systems and decisions in achieving societal objectives knowledge of political behavior, processes, and institutions

Derived Positions on Consumer Rights & Responsibilities

to choice	to information	to safety	to be heard
right:to have available a maximum of choices which do not interfere with rights of others right: to have adequate political mechanism for the generation of public goods responsibility: to weigh the impact of one's choice decision on the rights of others responsibility: to express one's demand for public goods through the appropriate political avenue	right: to an unrestricted flow of information concerning products or services responsibility: to discern truth from non-truth and relevant information from irrelevant	right: to have the freedom to evaluate potential risks and rewards and to choose among them responsibility: to not infringe on the physical safety rights of others in one's use of products	right: consumer has right to adequate political representation of his views through relevant government agencies, elected representatives, & special interest groups responsibility: to make reasonable effort in making his views known

SOURCES: Becker, 1951; Burns, 1963; Dorsen, 1971; Dragnich, 1966; Ford, 1915; Frohock, 1974; Ibele, 1971; Nadel, 1971

Table IX: Derived Ethical Responsibilities by Consumer Right and Discipline (Summary)

Discipline / Source	To Choice	To Information	To Safety	To Be Heard
Economics	responsibility: consumer presumed to make discriminating choices (to maximize his utility) responsibility: to use political mechanism to generate desired collective goods	responsibility: consumer is presumed to use objective information rationally when it is furnished	responsibility: with knowledge of risk, consumer is presumed to act in his own best interests	responsibility: consumer is presumed to take advantage of such protection if it is in his best interest
Marketing	responsibility: to seek out choices that one preceives as maximizing his functional and/or socio-psychological need satisfaction	responsibility: to discern information which is relevant to the satisfaction of one's needs	responsibility: to use products according to seller's instructions	responsibility: to make needs known to sellers through purchase decisions and cooperation with marketing research efforts
Home Economics	responsibility: consumer has responsibility to evaluate alternatives in terms of family objectives, functional attributes, and personal values.	responsibility: to seek out adequate information and education in order to achieve household and/or family objectives	responsibility: to learn proper use and potential misuse of products purchased and to exercise reasonable caution	responsibility: to consider purchase decisions thoroughly enough to prevent return except in the case of defective merchandise; to communicate market dissatisfaction to appropriate individuals
Sociology	responsibility: when making purchase decisions consumers should consider the effects on and expectations of their family, other relevant groups and society as a whole	responsibility: to control any information deemed undesirable for oneself, one's family, and society at large.	responsibility: to use products according to the expectations of other group members (i.e., conforming to norms and minimizing negative group impact of one's behavior)	responsibility: to affiliate oneself with groups that promote relevant consumer views
Law	responsibility: to seek out alternatives to the unlawful seller	responsibility: to make reasonable effort to determine true meaning of information	responsibility: to not be negligent in one's use of products	responsibility: to exert reasonable effort in using the legal process to obtain justice
Humanistic Psychology	responsibility: to know oneself well enough to choose wisely	responsibility: to expose oneself to a maximum of information in order to actively determine one's own fate	responsibility: to understand the amount of risk which one is capable of living with comfortably	responsibility: consumer must exert reasonable effort to affect political and economic environment
Environmentalists/ Futurists Literature	responsibility: consumer has responsibility to not purchase socially or environmentally negative products and to otherwise support their removal from market	responsibility: consumer is presumed to consider social and environmental impacts of his decisions if he is exposed to balanced information	responsibility: to not be environmentally reckless in one's use of products	responsibility: to make views known to politicians, regulators, and businessmen
Political Science	responsibility: to weigh the impact of one's choice decision on the rights of others responsibility: to express one's demand for public goods through the appropriate political avenue	responsibility: to discern truth from non-truth and relevant information from irrelevant	responsibility: to not infringe on the physical safety rights of others in one's use of products	responsibility: to make reasonable effort in making his views known

a variety of "correct" behaviors ranges from the individual welfare imperatives of economics to the group/societal injunctions of sociologists and environmentalists.

When an attempt is made to convert disciplinary analysis of consumer rights and inferred responsibilities to a code of consumer ethics, four principles or canons emerge which appear to be reasonably consistent, although idealistic. These ethical prescriptions for consumers are suggestive of guidelines which must be developed by those in consumer affairs with a philosophical orientation. Fairness, justice, and logic require that consumers must have an ethical framework to guide them in their marketplace behavior if they are to expect other marketplace participants to act ethically.

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ETHICAL ISSUES IN COST-BENEFIT ANALYSIS

Dr. Rachel Dardis*

This paper explores the value issues underlying cost-benefit analysis, particularly life valuation and the distribution of costs and benefits. The paper discusses the necessity for a uniform method of valuing life, and various methods used to estimate the value of a life. Second, the paper examines the efficiency criterion on which cost-benefit analysis is based and the underlying assumptions used to justify the neglect of distributional considerations. This involves a comparison of two welfare criteria: Pareto optimality and the Hicks-Kaldor criterion. Finally, methods for resolving the two value issues, including the role of economic and political considerations in program evaluation, are addressed.

Cost-benefit analysis has been advocated recently as a method for evaluating various consumer protection programs and for determining whether such programs are in the consumer interest. In programs designed to reduce deaths, it becomes necessary to estimate the value of lives saved. The necessity arises from the fact that both costs and benefits should be measured in the same units (dollars) for purposes of comparison. However, there has been considerable debate concerning the ethical implications of assigning a dollar value to a life. A second issue pertains to the distribution of costs and benefits. Some consumer protection programs may benefit some consumers and inflict a loss on others. Debate concerning ethical or value issues underlying the measurement or the distribution of benefits may affect the acceptance and use of cost-benefit analysis and hence, the effectiveness of consumer protection programs.

This paper explores the value issues underlying cost-benefit analysis, in particular, life valuation and the distribution of costs and benefits. Methods for resolving the two value issues, including the role of economic and political considerations in program evaluation are also discussed.

Life Valuation

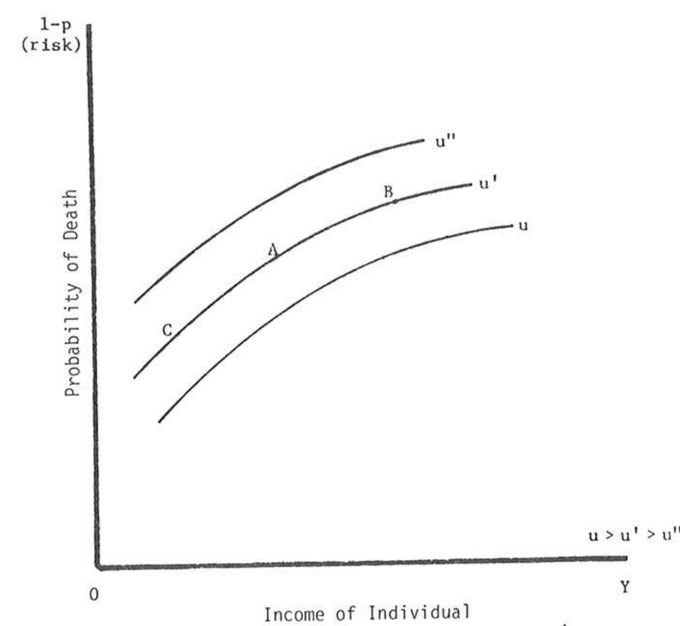
A variety of methods have been proposed to estimate the potential benefits from life-saving programs, i.e., the value of lives saved. The major methods are as follows: 1) willingness to pay, 2) human capital (value of a livelihood), 3) society's explicit valuation, 4) society's implicit valuation, and 5) foregone consumption. Each method will be examined with respect to ethical and methodological considerations.

Willingness to Pay for Risk Reduction

This approach focuses on the individual's willingness to pay for a reduction in the probability of death. The amount paid divided by the reduction in probability is used to measure the value of life to the individual. An alternative approach which gives the same result is to estimate the amount of money necessary to compensate the individual for an increase in the probability of death.

The major argument in favor of willingness to pay is based on the principle of consumer sovereignty. According to Mishan, "any expected loss of life, or saving of life, any expected increase or reduction in suffering, in consequence of economic activity, is to be evaluated for the economy by reference . . . to what each member of the community is willing to pay, or to receive, for the estimated change in risk". This approach is illustrated in Figure 1. The income of the individual is measured along the horizontal axis and the probability of death is measured along the vertical axis. The individual experiences the same level of satisfaction or utility along any one indifference curve (u, u', or u") and utility increases with an increase in income and a decrease in risk. If the individual is located at point A, the absolute value of the inverse of the slope of the tangent at A, which is equal to dYd(1-p), reflects the amount of money that the individual would be willing to pay for a reduction in risk (or the amount of money that the individual would need to compensate for an increase in risk). The diagram also indicates diminishing marginal rates of substitution between income and risk reduction. Thus, the lower the income level (point C) the less willing the individual is to exchange it for increased safety. Conversely, the wealthy individual (point B) is willing to pay more for increased safety.

Figure 1. Risk, Income and Utility



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The curvature of the indifference curves also indicates that there may be no amount of money that would compensate the individual for loss of life. However, information generated by point A may be used to estimate the value of a life according to the following argument. Assume that an increase in the risk of death of 0.001 requires an additional income of $100 as compensation. In a community of 1,000 persons with this attitude toward risk reduction, each person is willing to face increased probability of death provided a compensatory payment of $100 is made. However, since the probability of death has increased by 0.001, this means that one person in the community will die. The total amount of compensatory income received by the community is $100,000, which reflects the value of life to the community (6).

The willingness to pay approach focuses on individual as opposed to societal decisions (5). However, Fromm points out that reliance on the individual may lead to an underestimate of the demand for safety and the value of life. First, the individual may undervalue his life and it does not necessarily follow that society should accept this value. Second, it may be difficult for the individual to understand the significance of risk reduction or to react to small changes in small probabilities. In addition, there is no guarantee that he will be the beneficiary. Fromm remarks "it may be possible with absolute certainty to reduce the number of ... passenger fatalities from 120 per 70 million persons carried to 100. The government can use this as a basis for evaluating the desirability of the expenditures. But no assurance can be given to any particular passenger that it is his...life that will be saved; consequently he may tend to undervalue many lifesaving proposals" (5:174). For both of these reasons, Fromm argued that the willingness to pay approach should only be used to provide minimum estimates of the value of life to the individual.

The willingness to pay approach has also been challenged by Zeckhauser. He comments that human lives differ from other commodities in that they are not traded in the market. He concludes that "for commodities that society refuses to market, it is not evident that the quasi-market measure 'willingness to pay' is an appropriate indicator of value" (11:425). Finally, there are major methodological problems in obtaining data. If questionnaires are used, there is no guarantee that the individual will reveal his true preferences. In this respect the demand for safety may be similar to the demand for a public good, i.e., a solution exists but there is no mechanism for ensuring its determination. The revealed preference approach using market data is superior, but even here consumer ignorance of the underlying hazard and lack of comprehension of the significance of "small increments in a small risk" are likely to obscure the results. In addition, individuals or groups of individuals may differ greatly with respect to risk perception or risk aversion. Hence, there may be considerable variation in the resulting life value estimates.

Human Capital: Value of a Livelihood

In this method, discounted future earnings of the victim are used to represent the loss to society from death. Gross or net earnings may be used. In the case of net earnings, discounted future consumption is deducted from discounted future earnings (gross earnings). The use of net earnings has been challenged by many writers, notably Mishan, who points out that this practice excludes the victim as a member of society and that there is no justification for such exclusion (8). This is a significant ethical issue, since if net earnings are used, society would receive a net benefit from the deaths of unproductive members of society, i.e., individuals whose discounted future consumption exceeds their discounted earnings. Even if consumption were not deducted, i.e., gross earnings are used, the human capital approach discriminates against persons not in the labor force, e.g., children, retirees, housewives. In the case of housewives, an imputed value for their activities is frequently used. The two major methods are the opportunity cost approach and the market or replacement cost approach. The opportunity cost approach focuses on wages foregone in the market sector due to housekeeping activities. The replacement cost approach focuses on wages foregone in the market sector due to housekeeping activities. The replacement cost approach applies market prices to activities performed in the household. Brody's economic value of a housewife was obtained in this manner (1).

The formula for present value of future earnings (actual or imputed) follows:

$$V_a = \sum_{j = a + 1}^{n} \frac{W_j Y_j P_a^j}{(1+i)^{j-a}}$$

V_a = present value of future earnings of an individual aged a
a = age of victim at the time of the accident
n = age of retirement from the labor force
P_a^j = probability that an individual aged a will survive to age j
W_j = probability that an individual aged j will be in the labor force and be employed at age j. It is based on labor force participation rates and employment rates for each age group.
Y_j = earnings at age j
i = discount rate.

As the formula indicates, children and retirees will have far lower values than working adults. In the case of children, several years must elapse before they enter the labor force which reduces the present value of future earnings. In the case of retired persons, there are no earnings.

Critics of the human capital approach have pointed out that it does not measure the value of life to the individual but rather his/her contribution to economic output. In addition, it discriminates against certain groups such as children, housewives, and retirees. Finally, the use of earnings means that the lives of low-wage groups, e.g., women, minorities, are undervalued relative to high-wage groups. This raises major ethical issues. In spite of such limitations the human capital approach has been used in most health and safety studies (4). Major reasons are data availability and deficiencies in other proposed measures.

Figure 2. Value of a Life (Rice)

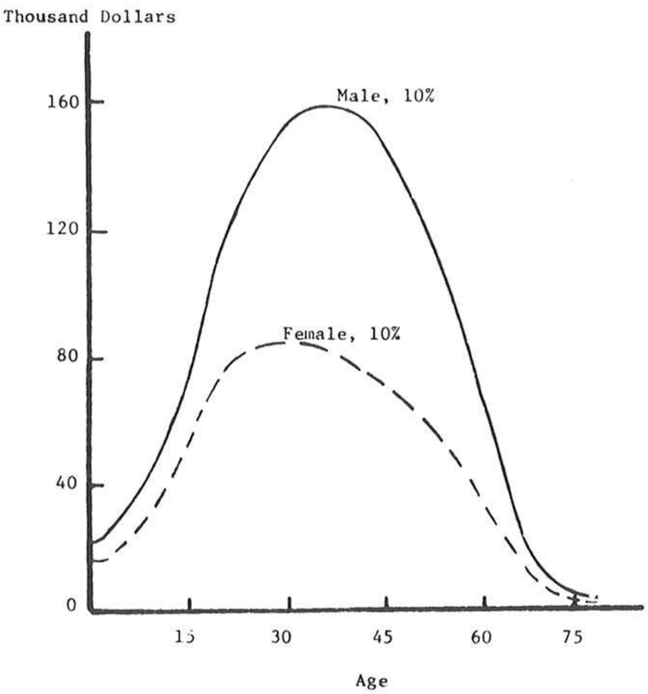
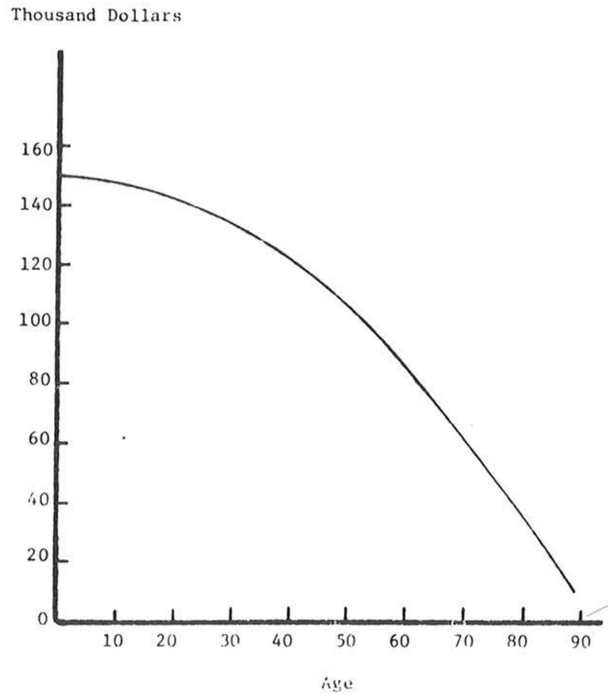


Figure 3. Value of a Life (Usher)



Discussion

Major aspects of life valuation may be summarized as follows:

1. Most safety programs are concerned with statistical lives as opposed to identified lives, i.e., it is not known in advance whose life will be saved. Procedures for valuing identified lives may be irrelevant for valuing statistical lives.

2. Court awards are concerned with identified lives. The fact that such awards are victim, lawyer, and jury specific results in considerable variation in explicit life values and there is no rationale for selecting one specific life value over another.

3. Failure to address the issue of life valuation in many health and safety programs has resulted in considerable variations in implicit life values. Again, there is no justification for selecting one specific life value over another.

4. The willingness to pay approach leaves the issue of life valuation to the individual. However, lives are not marketable commodities and the willingness to pay approach may not be valid. In addition, life values may exhibit considerable variations since they are risk perception/risk aversion specific.

5. Three methods - court awards, human capital, and foregone consumption use the life cycle approach. In this approach, the number of life-years remaining to the individual, had he lived, are taken into consideration. The life-year approach is of interest since it reflects the fact that life-saving programs can only postpone death, they cannot grant immortality. Thus, the death of a child is a greater tragedy than the death of an older person since the former has been deprived of a greater number of life-years. Again we are concerned with statistical as opposed to identified life-years.

6. The same values should be used in all life-saving programs. If different programs use different life values then there has been discrimination against certain segments of society.[1] Since health and safety programs compete for limited resources, it is both efficient and ethical for these programs to allocate the same expenditure of resources at the margin of saving a life.

Distribution of Costs and Benefits

Cost-benefit analysis is designed to promote economic efficiency by focusing on the real costs and benefits of proposed programs. If total benefits are greater than total costs, then the program is acceptable, irrespective of the distribution of costs and benefits. Justification for this approach lies in the use of Hicks-Kaldor criterion. According to this criterion, a project is acceptable if the gains to the winners are sufficient to provide for potential compensation to the losers, while still leaving the winners with some gains. The fact that the compensation is potential is crucial. Thus, this criterion does not require that compensation be made, but rather that it could be made and still result in a net benefit for the gainers. In the absence of actual compensation, certain segments of society will endure losses and in effect subsidize other segments of society.

Society's Explicit Valuation

This method examines court awards for wrongful death to determine the value of a life. The determination of compensation to beneficiaries in the case of wrongful death is based on the human capital approach. However, net earnings are used as opposed to gross earnings. The rationale for this approach is that the courts are concerned with compensation to survivors or beneficiaries and are thus only concerned with ex post determinations of the loss to society. The use of net earnings may also reflect a reluctance to assign a value to a life so that only the loss to the beneficiaries is considered. Court awards have also included other pecuniary losses to beneficiaries, such as, loss of services of the deceased, loss of parental or marital care, and education. In the case of housewives, not working outside the home, the substitute mother approach is frequently used. This is similar to the market basket or replacement cost method used by Brody (1). Treatment of children appears to have presented the greatest problems. In the past, the beneficiaries (parents) were only entitled to damages if the child's services during his minority years exceeded the cost of support. Recent court rulings have considered the cost of parents' past investment in the child as well as loss of future companionship. Loss of the estate measure of damages also provides for future earnings of children.

The use of the human capital approach to life valuation in court awards provides some justification for this method. However, as the previous discussion indicates, this approach discriminates against certain segments of society. In addition, the deduction of consumption raises the same ethical issues. Finally, court awards tend to be victim, lawyer, and jury specific so that there are considerable variations in the value attached to life. Court award data reflect values attached to identified lives, while the policy maker is generally concerned with statistical lives, i.e., it is not possible to know in advance which life will be saved. For these reasons, court awards add little clarification to the issues of life valuation.

Society's Implicit Valuation

The use of government decisions to obtain an implicit value for a life has been discussed by many writers. For example, health policies, safety regulations, and highway construction requirements incur a cost which is deemed justified in view of the reduction in injuries and deaths. McKean points out, however, that different agencies have different implicit values and that "even if only one implied value exists within the government, there is no assumption that it is the correct one to use in maximizing some (unspecified) preference function" (7:51). This is due to the fact that government expenditures are group decisions and that there is no preference function that is inherently correct in decisions affecting several persons. Consequently there is no uniquely correct set of prices or substitution ratios. Mishan also comments that the "idea of deriving quantitative values from the political process is clearly contrary to the idea of deriving them from an independent economic criterion... the economist fails to meet his belief in so far as he abandons the attempt to calculate any aspect of the project in reference to an economic criterion and instead attempts to extricate figures from previous political decisions" (8:157).

An alternative approach is to rank projects in terms of desirability based on their implicit values of a life. For example, if the implicity value of a life from program A is $1 million and the implicit value of a life from program B is $500,000 then the latter program is preferred, since more lives are saved for a given expenditure of resources. This approach, which has been accepted by many non-economists, is of interest since it acknowledges the resource constraints underlying all life-saving programs, i.e., not all lives can be saved.

It can further be argued that if different programs have different implicit life values (as is the case), society is discriminating in favor of those groups served by programs with the highest implicit life values. If we spend more dollars to reduce some types of accidental deaths than others, then we are attaching higher life values to some individuals than to others. The concept of allocating dollars so that the implicit value of a life is the same for all programs is thus closely related to the ethical issue of valuing all lives equally.

Foregone Consumption

This approach is very similar to the human capital approach with the exception that consumption replaces earnings. Some of the problems inherent in the human capital approach are eliminated. It is also interesting that the use of foregone consumption can be defended on theoretical grounds as shown by the work of Usher and Conley (10, 2). Both writers postulate a lifetime objective function, which is dependent on lifetime consumption, and use expected utility maximization of the individual to estimate his response to decreasing survival probability. Usher noted the similarity between his results and those obtained in the human capital approach. "I have critized the use of present value of earnings as a measure of the value of life.... However, the alternative concept of the value of life gives rise to measurements that have a good deal in common with the present value of earnings measurement they are intended to replace, for both are variants of expected income" (10:218-19).

A comparison of Usher's value of a life and that obtained by Rice (9) using discounted future earnings is shown in Figures 2 and 3. As both diagrams indicate, the value of a life is age-dependent. This is because the probability of survival declines with age. The major difference between Usher's method and Rice's method is the valuation of the lives of children. Children, in Usher's model, have the greatest survival probability and hence, the highest discounted future consumption. In contrast, as noted earlier, discounted future earnings are lowest for children since several years must elapse before they enter the work force.

The Hicks-Kaldor criterion has been debated at length, and it has been recognized that policy makers are concerned with distributional as well as efficiency considerations. Thus, if certain programs have large negative effects on certain individuals or groups, the program may be modified to reduce such effects even though there might be a reduction in total net benefits (benefits minus costs). The ethical issue underlying cost-benefit analysis in this instance is resolved by the policy maker, not by the economic analyst.

In the area of product safety, frequently the hazard depends upon condition of use, i.e., many product accidents are due to product abuse or misuse by consumers. The imposition of a safety standard to reduce the consequences of such actions by careless or negligent consumers will, in turn, impose a cost on careful consumers who did not need the extra protection. Educational programs may also result in a differential distribution of costs and benefits, either because some consumers do not need the information or because some consumers do not respond to such programs. In both instances, these consumers are paying for a program from which they receive no benefits.

Selection of high risk groups and the development of specific programs for such groups is one answer to the equity issue. However, there are problems with respect to efficiency and feasibility. It may be more efficient to conduct an educational program for all consumers than to identify and address the needs of sub-groups. In the case of the proposed standard for upholstered furniture, the target or high risk group are smokers. Careless smoking is the primary cause of residential fires involving upholstered furniture. However, the identification of careless smokers and the requirement that they either refrain from smoking or purchase cigarette ignition resistant furniture is not a feasible solution. As a result, a standard has been proposed for all consumers although the benefits for non-smokers are likely to be minimal.[2]

Conclusion

The application of cost-benefit analysis to the area of safety has been challenged on the grounds that it is not possible to quantify the benefits of such programs, i.e., the value of lives saved. However, society's limited resources preclude the prevention of all avoidable deaths, so the value society attaches to a life is not infinite. The fact that not all lives are saved raises the ethical issue of whose life should be saved.

Refusal by various government agencies to assign a value to a life has not resolved this issue, since all life-saving programs contain an implicit value of a life. However, failure to assign an explicit value has resulted in an inefficient and inequitable allocation of resources to life-saving programs. Use of a uniform and consistent measure for valuing lives, as advocated in cost-benefit analysis, would improve both the efficiency and equity of life-saving programs. With respect to whose life will be saved, it must be remembered that the policy maker is generally concerned with statistical lives. Thus, the determination of whose life will be saved is replaced by the less exacting determination that certain groups in society will be exposed to lower levels of risk.

Finally, while cost-benefit analysis is not concerned with the distribution of costs and benefits, it can assist in detailing of costs and benefits. The issue of distribution may then be addressed by the policy makers who will take both economic and political factors into consideration in making a decision.

Footnotes

[1]An interesting example of agency inconsistency is given by the proposed standard for upholstered furniture. Explicit and implicit life values of $1 million and $500,000 million respectively were used in the economic analysis. If either of these values had been used in the case of flammability standards for adult sleepwear, then standards for these garment categories would also be justified (4). However, no action on flammability standards for adult sleepwear is anticipated in the near future.

[2]The staff of the Consumer Product Safety Commission has recognized this aspect of the proposed standard and has claimed that entertaining, use of baby sitters, and other factors may place a household at risk even though the occupants do not smoke. However, the risk is considerably lower than for households whose occupants smoke.

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PERCEIVED VS. ACTUAL PRICE DISPERSION (QUALITY CONSTANT): A NEW DIMENSION OF INFORMATIONALLY IMPERFECT MARKETS

Terje Assum and Dr. E. Scott Maynes*

The purpose of the study was to compare consumers' perceptions of price dispersion of a sample of products with the actual dispersion of prices. The data were obtained through a telephone survey and a price survey conducted in early 1978. The two major findings are that, first, consumers are rather ignorant of the extent of price dispersion, and, second, consumers tend to underestimate the degree of price dispersion much more frequently than they overestimate it. Assuming that the rational consumer adjusts his shopping to his perceptions of price dispersion (quality constant), such inaccurate perceptions are likely to induce consumers to shop less and to purchase at higher prices and/or lower quality, thereby reducing their welfare.

This paper has four objectives: (1) to spell out the welfare/search implications for consumers of (a) informationally imperfect markets and (b) misperceptions of such markets; (2) to document for a small but varied sample of products the actual price dispersion (quality constant); (3) to contrast perceived with actual price dispersion (quality constant); (4) to discuss policy implications of these findings.

Informationally Imperfect Markets and Their Implications

As a first approximation, a local consumer market is <u>informationally perfect</u> when a single price is charged by all sellers for the same quality. A market may be designated as <u>informationally imperfect</u> to the extent that different prices are charged for the same quality.

The emphasis in the definition is with the <u>actual</u> distribution of prices. It is possible that a uniform price for a given quality may be obtained when only a fraction of consumers are fully informed. Just how many consumers must be fully informed to discipline a market is unknown. It probably depends upon their visibility or activism, the product class, the number and character of sellers, the type of market (small-town vs. urban, growing vs. stable, etc.) Informationally imperfect markets command our interest for several reasons. The first is the public policy viewpoint. To the extent that extensive price dispersion, coupled with a lack of information on the part of consumers, induces them to purchase at higher prices and/or lower quality, their welfare is reduced. Such a market may be viewed as "unfair" to consumers, especially those who purchase at higher prices. Whether a seller's action in charging higher prices to the ignorant should be considered unethical is a matter of individual judgment. Should most or many markets be informationally imperfect, this phenomenon would pose the question of what new policies and institutions might correct this situation.

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The informational imperfections of local markets should be of interest to individual consumers and consumer organizations. To the extent that such markets exist and persist, they present opportunities for consumer payoffs to individual consumers and to the consumer organizations that assist them. "Maps" of particular markets at particular times, if needed, would show the path to increased purchasing power and consumer satisfaction.

For professional students of local markets (consumer economists, family economists, consumer educators) the informational imperfections of markets are of paramount interest. To the extent that local markets are informationally imperfect, they pose a challenge. Evidence of informational imperfections should help to improve the theory, the anlaysis, and the advice of these groups.

Causes of Informationally Imperfect Markets

It is our expectation that many, perhaps most, local consumer markets will be characterized by substantial informational imperfections. The "culprits" behind this expectation are three. First, there is the technical complexity and multi-component nature of products. These factors make it difficult for consumers to assess both quality and price accurately. Second, there is affluence which has increased both the consumer's consumption possibilities and his information problem. Specifically, affluence has (1) enlarged the number of average purchases that each family can make, (2) enlarged the set of products, brands, models, retailers from which choices are to be made, and (3) increased the value of the individual's time and hence reduced the extent of his/her shopping/search activities. Finally, agricultural productivity and the automobile together have made <u>urbanization</u> possible and thus increased the set of products, brands, models, and retailers to which a consumer has access. More detailed discussion of these issues is provided in [9].

Small wonder, after this recital, that consumers are burdened with the informational overload problems that market researchers have so forcefully identified and documented. For a review of this research, see [4, 5, 19].

The New Dimension: Consumer Perceptions of Price Dispersion

But our story of informationally imperfect markets is incomplete. Until now it has taken no account of consumers' perceptions of price dispersion in local markets. These affect our story in three ways: (1) as a cause of informational imperfections; (2) as a determinant of (a) the amount of shopping/search a consumer with undertake, and (b) the likely outcome of the shopping process. (Search includes efforts to obtain information that go beyond "shopping." Consulting <u>Consumer</u>

Reports or asking a friend about the availability of a product are examples.) Hereafter, we will use the word "shopping" to denote both shopping and search. We discuss each in turn.

The Paradox of Perceived Prices

The rational consumer, following his own common sense (though he could have been instructed by Stigler's pioneer paper [16]) will adjust his shopping, ceteris paribus, to his perceptions of price dispersion (quality constant). Specifically, the greater the perceived variation in prices, the more he will shop. How do perceptions of price variation become a cause of informationally imperfect markets? The answer is that many believe that markets work better than they really do. The lesser price dispersion associated with a well-working market will lead such consumers to shop less than otherwise. In so doing, they slacken the discipline of the market and make it possible for greater price dispersion to come into existence and to persist! Hence, we identify a paradox of expectations: expectations of lesser price dispersion contribute in real life to greater price dispersion!

Why should consumers expect markets to work well with little price dispersion? For some, this favorable view of the workings of markets comes from the immense volume of propaganda disseminated on behalf of "free enterprise" through speeches, magazine articles, advertisements, tracts, and books. A select few come to their favorable view of markets by misremembering and misapplying what they learned a long time ago in economics courses. They may remember that "perfect competition" yields a single lower price for any product. But they may not recognize that perfect competition does not describe the real local market in which they make most of their purchases. Finally, the "facts" of how badly markets work have been little researched, little recognized, and even less publicized, though this is now changing.

The tendency of consumers to underestimate price dispersion (quality constant) is confirmed by the data of this investigation (see Table 1). (A detailed description of the data and their methodology appears later.) Should the perceived price dispersions for this small but varied sample of products prove to be representative of all consumer products, then we will have evidence supporting the notion that consumers' erroneous perceptions contribute to informationally imperfect markets.

Implications for Search and Welfare

Combine perceived price dispersion with actual price dispersion and then we can speak meaningfully of the consequences of various actual/expected combinations for (1) the appropriate amount of search, and (2) the welfare payoff, i.e., the likelihood of purchasing a given quality at a low price. Table 2, Part A combines these elements.

The table merits some comments. The low-low (actual, perceived) combination includes the competitive solution so beloved by economists. Under this regime everyone, including the disadvantaged, "win" by purchasing at very low prices for little or no search. Less happily, low-low also includes the single higher price charged by a perfect monopoly. In the case of the perfect monopolist, all consumers may lose by paying a higher price than competition would enforce. But the knowledgeable and the ignorant are equally disadvantaged.

The low-high condition is relatively benign. Expecting price dispersion and associated payoffs to search where there are none, consumers "overshop," wasting time and effort in an attempt to secure lower prices that do not exist. However, the actual outcome is as advantageous (or disadvantageous) as low-low.

The high-low combination is most subversive of all to consumer welfare. When consumers erroneously anticipate little or no price dispersion, they undershop and hence are very likely to pay higher prices.

On face value, our final category, high-high, would appear to be relatively benign: the actual price dispersion is great, but the condition is recognized by consumers and hence, if they are

Table 1. Summary of Perceived Price Dispersions

Perceived Price Dispersion (Quality Constant)	No. of Products	Products
1. Overestimated by most consumers in our sample (>+15 percent of correct value)	2	Home fuel oil Small tape recorders
2. Estimates realistic ($\pm$<15 percent of correct value)	3	Whole wheat bread Life insurance Stereo receivers
3. Underestimated by most ($\geq$-15 percent of correct price)	9	Milk Eggs Aspirin Single-lens reflex cameras Grease/lubrication of car Gin White bread Washing machines Dishwashing detergent
TOTAL NUMBER OF PRODUCTS	14	

TABLE 2. UPPER AND LOWER PERCEIVED VS. ACTUAL PRICE DISPERSION (Quality Constant)

Part A. Implications for (a) Appropriate Consumer Search Behavior, and (b) Consumer Welfare (likely outcome of shopping)

Actual Price Dispersion	Perceived Price Dispersion	
	Low	High
Low	a. Little searching b. Consumers inevitably "win," buying at lowest or v. low price.	a. Consumers may "oversearch." b. Consumers win, achieving lowest or v. low prices.
High	a. Consumers undershop (expecting low payoffs.) b. Likely to lose, paying higher-than-necessary prices.	a. Consumers likely to shop extensively; b. but consumers may still pay higher than necessary prices, searching being an imperfect process.

Part B. Classification of Sample Products by Perceived vs. Actual Price Dispersion

Actual Price Dispersion	Perceived Price Dispersion	
	Low	High
Low	Milk (perception underestimated) Wholewheat bread (perception realistic)	Home fuel oil (price dispersion overestimated)
High	Eggs (dispersion underestimated) Aspirin (under-estimated) Single-lens reflex cameras (under-estimated)	Grease (under-estimated) Gin (under-estimated) Detergent (under-estimated) Washing machine (underestimated) Small tape recorders (over-estimated) Stereo receivers (realistic) Life insurance (realistic)

reasonable, they will search more. The only rub is that in modern informationally imperfect markets there is no assurance that more extensive search will yield success in locating the lowest price. Product and price complexity may prove opaque to all but the most astute consumers. Hence, it is possible that intensive search may yield a high price (quality constant) instead of the low price that the consumer seeks.

Part B of Table 2 allocates our 14 sample products according to the actual/perceived price dispersion cross-classification. For those concerned with the consumer interest these preliminary results are not encouraging. Out of 14 products, only 3 fall in "benign" categories (low-low, low-high). Three products fall in the clearly malignant high-low and an additional 8 are in the high-high category where a favorable outcome is possible, but not likely. Further, in this high-high category, the extent of actual price dispersion is underestimated in 5 out of 8 cases.

So much for our first look. Now we will describe this research and its results in detail.

Actual Price Dispersion: Method and Results

Ordinary consumers are not alone in underestimating price dispersion. Consider this statement in 1973 by a leading student of the economics of information:

> In the real world one rarely finds cases where the price range exceeds fifty percent of the lowest price for a given item. The returns from search act as a powerful force preventing a too widely dispersed price distribution.[17]

The substantial price dispersion revealed in this study should surprise and instruct Telser as much as it commands the interest of consumer affairs students. But before we can digest the results of this study, we must understand its concepts and data.

Informationally Imperfect Markets: Critical Concepts

Our basic instrument for the assessment of informational imperfections will be the perfect information frontier. This concept embodies the notion that, quality constant, the fully informed consumer will opt for the lowest price. Why should s/he pay more? The logic, it will be recognized, is at least as old as Adam Smith.

The perfect information frontier is defined, on a chart depicting price and quality, as "the positively sloped line segments connecting those points, representing price and quality, for which a given quality may be purchased for the lowest price." For a product of uniform quality, the frontier consists of a single point. For a product of variable quality, it consists of line segments. As examples, to be discussed fully later, see Charts 1 and 2.

Price dispersion is expressed for products of uniform quality as the "ratio of the highest price (not counting outliers) to the lowest price," and for products of variable quality as "the ratio of highest price to the corresponding frontier price at a 'middling' quality level."

The concepts of quality, market, and product and their interpretations are proposed and discussed exhaustively in earlier work by one co-author [8, 9]. Since they are crucial to the interpretation of the results of this study, they are reviewed here. Readers willing to accept these concepts and their interpretation on faith may skip to "Results."

Quality, briefly, consists of "a subjectively weighted average of service characteristics." A service characteristic is defined as "the basic factor giving rise to utility." Examples might include durability, beauty, and safety. These service characteristics differ from the "characteristics" found in Kelvin Lancaster's Consumer Demand [6] or in the hedonic price index literature [3]. Our service characteristics may be viewed as the output of a production process embodied in a good. Lancaster and the hedonists often identify inputs to this process as their "characteristics." For example, the durability of a hot water heater would be a service characteristic while Lancaster and the hedonists might identify as their characteristics the copper pipes and glass liner that "produce" durability.

For those who follow the literature of marketing, it may be useful to identify the concept of quality used here as the mathematical equivalent of the Rosenberg-Fishbein multi-attribute model [4, 5]. However, our use of the model is different. In marketing, the multi-attribute model has been employed to ascertain what consumers want, given their existing state of ignorance. By contrast, for this analysis it is assumed that quality represents what the fully informed consumer would achieve.

In the results that follow, quality data consist of the numerical quality scores published by Consumers Union in Consumer Reports. For a detailed discussion of CU's quality index, see [9].

Quality may be assessed for either varieties or specimens of products, a distinction that is essential for an understanding of the charts and tables that follow. A variety is a product-brand-model combination, e.g., a 1979 Buick Century Station Wagon. A specimen includes as part of the "product" the characteristics of the retailer, e.g., a 1979 Buick Century Custom Station Wagon purchased at Cutting Motors. In our results, quality pertains to varieties of products while prices, necessarily, pertain to specimens.

The concept of product is needed to determine what varieties are appropriately compared with one another. A product is defined as "the set of goods which, for some maximum outlay, will serve the same general purpose in the judgment of the purchasing consumer." It follows that the product set of different consumers may differ. For example, a professional photographer may include as single-lens reflex cameras only those varieties that provide a broad family of accessories, while an amateur may include all single-lens reflex cameras.

The concept of market is needed to delineate the set of sellers whose offers will be depicted on a price-quality chart for a particular market. A market is defined as "the set of sellers the consumer might consider if he possessed accurate information regarding the existence of sellers and brands as well as the range of prices and quality available." The "might consider" wording implies that the inclusiveness of a market depends upon the consumer's search costs and hence may differ from one consumer to another.

The concepts of quality, product, and market are employed normatively here, depicting outcomes that would occur under full information rather than what actually occurs under the more realistic assumption of imperfect information.

Innocent vs. Possibly Harmful Price Dispersion: The Matter of Interpretation

The general thesis of this conceptual framework is that the greater the observed price dispersion, the less well a local market is working and the more likely that a consumer will be harmed by purchasing at a higher price than necessary. For this interpretation of the actual price dispersion to be correct, three assumptions must be made. The first is that the identification of varieties of products and retail outlets is complete and accurate for some representative consumer in a particular market. A second is that the prices quoted are accurate. In this investigation the "actual" price represents the lowest price a seller was willing to quote and honor for all customers. Third, fully informed consumers would accept Consumers Union's assessment of quality.

The discovery of extensive price dispersion above the perfect information frontier need not signal an informationally imperfect market and its related possible welfare loss to consumers. A number of factors other than a bad performing market might account for such dispersion. From an interpretive viewpoint, the basic question is that: to what extent could the observed dispersion of prices above the frontier be reasonably attributed to such other "innocent" factors? To the extent that the dispersion is not reasonably assigned to other factors, we will conclude that the market in question is informationally imperfect and the observed price dispersion possibly harmful.

Non-Uniform Market Sets. Plausibly, poor vs. rich consumers may differ in the search costs they incur. If search costs are higher for the poor (a by no means obvious assumption), then the set of retail outlets in the poor person's market would be less, ceteris paribus, than that of the rich consumer. The smaller set of retailers may shift the intercept and/or the slope of the perfect information frontier as well as the price-to-lowest frontier price ratios. We have no way of knowing, a priori, whether the poor person's set of retailers would increase, decrease, or have no effect on the overall observed price dispersion. In general, what this means is that the data presented may not be representative of the workings of a market for some consumers.

The next two factors pertain only to products of variable quality.

Non-Uniform Product Sets. Consumers may also differ in saying which varieties of products "serve the same general purpose." Such judgments, based perhaps on differing use of the product, may result in the inclusion or exclusion of particular varieties from a product set and hence affect the observed price-quality map. This effect will not make the price dispersion less harmful, but again it may make the results presented unrepresentative for "other" consumers.

Non-Uniform Assessments of Quality. Several kinds of characteristics that should enter a comprehensive quality score are excluded from Consumers Union's numerical quality scores. They are (1) intrinsically subjective characteristics such as the "style" of an automobile, (2) characteristics of retailers such as their friendliness, convenience, etc., and (3) characteristics for which no acceptable laboratory or use test can be devised, for example, the durability of certain products. Inclusion of such characteristics could alter the quality score of a variety and hence the location of the perfect information frontier and the magnitude of observed price dispersion. We have no way of knowing exactly how the inclusion of such characteristics would affect the price ratios. Like ordinary consumers, each of us will have to make mental adjustments for this as best we can.

There is no gain saying the possibilities that different quality assessments may be made by different consumers even for products whose characteristics are predominantly "objective." It is reassuring to learn that in 1970, among Consumer Reports purchasers-subscribers, 48 to 81 percent reported the purchase of models that were "top-rated" in Consumer Reports.[1] But it is not conclusive. Until convincing research has been undertaken on the matter of uniformity of quality assessments by fully informed consumers, each of us will have to estimate in each case how uniform or variable such quality assessments might be[2] and what effect, if any, variability has on the observed price-quality chart.

Price Discrimination. The charts and tables depict only a single price per retailer. Hence, the multiple prices resulting from seller-induced or consumer-induced price discrimination are not depicted here and the overall price dispersion is probably underestimated substantially. Consider, for example, one small city in the Southeast where 86 percent of all home appliance stores acknowledged that they charged different customers different prices for the same item [12]. Salop, a theorist, provides a persuasive model demonstrating how profitable it is for retailers to sort out and to charge different mark-ups to different consumers, depending upon their ignorance [14].

The Data Collected. Price data were collected during January, 1978 in Syracuse, a middle-sized city with a market population of about 650,000. For each product the investigator obtained prices from all retailers that might reasonably have been contacted by a representative, middle class consumer owning a car.

In practice, this means that the market area for small-ticket items such as foods is substantially less than that for large unit-price items such as durables. Though a representative consumer might reasonably include mail order and telephone retailers in his market, they were arbitrarily excluded from these data. The effect is to underestimate the extent of price dispersion in markets where mail-order purchases are appropriate. A single price, "the lowest that the retailer would honor for all customers," was obtained from each retailer.

A sample of products was chosen to be representative of important groups of products. For products of variable quality, the sample was constrained to those for which recently published numerical quality scores were available from Consumer Reports. The following is the sample of products, ordered by minimum price:

Roughly Uniform Quality	Variable Quality
Aspirin, 100-tablet bottles	Dishwashing detergents
White bread, 1-lb. loaves	Mini tape recorders
Eggs, grade A, medium size, one dozen	Stereo speakers
Whole milk, 1/2 gal. container	Single-lens reflex cameras
Grease/lubrication for compact car	Stereo receivers
Gin, 1 quart	Washing machines
Heating oil, No. 2, 1 gal.	
Term life insurance (5 year, guaranteed renewable)	
Participating	
Nonparticipating	
Whole life insurance	
Participating	
Nonparticipating	

Results

The perception of extensive and pervasive price dispersion is confirmed by the tally in Table 3.

Table 3. The Extent of Price Dispersion.

Ratio of High to Low Price[a]	Number of Products[b]
≥1.25	10 of 12 products
≥1.50	9 of 12 products
≥2.00	6 of 12 products
≥3.00	2 of 12 products

[a]For products of variable quality, the ratio of high price to the corresponding frontier price for "middling" quality.

[b]Excludes four kinds of life insurance policies that are dealt with separately.

Is this extraordinary amount of price dispersion "innocent" or "harmful"? To answer this we must ask first, for each product, whether the observed dispersion is attributable to (1) non-uniform market sets, (2) non-uniform product sets, (3) non-uniform quality assessments and what dispersion (4) price discrimination might add.

As to "product," we recall that a product set consists of "the set of goods which, for some maximum outlay, will serve the same general purpose in the judgment of the purchasing consumer." For some consumers--the disadvantaged, for example--the budget constraint embodied in the "for some maximum outlay" qualification will dictate non-consideration of "high-priced" variants of a particular product or of entire product categories, e.g., "luxuries." For such consumers, these charts exaggerate the extent of price dispersion; they also portray price dispersion for products these consumers might not purchase at all.

As suggested earlier, the extent of a local market is limited by the consumer's search costs, both objective and subjective (disquiet at leaving a baby untended, distaste for shopping, etc.). Should disadvantaged consumers--the poor, the aged, etc.--be "imprisoned" within a limited area as the literature often suggests, their market would be more restricted and would exhibit less price dispersion. What is usually expected is that "ghetto" markets are characterized by higher prices and poorer quality, the consequences of smaller outlays per shopping episode, smaller turnover, and higher credit costs [1]. Hence, higher prices may be the market's substitute for less price dispersion, not a very attractive alternative.

Could different (fully-informed) assessments of quality account for some of the price dispersion observed here? For this question the most vulnerable product is probably bread. Our "white bread" includes all bread appearing or labeled "white" regardless of whether they were "home-baked," contained special ingredients, or were baked from special formulas. Should fully informed consumers agree that some "special" (and high-priced) white breads are indeed of better quality, then we would concede that the observed price dispersion exaggerates the "actual" price dispersion, quality constant. One may be tempted to note that different service stations (different servicemen?) execute automobile lubrication with differing degrees of care. Only if you are prepared to argue that the high-priced stations do a more careful job are you entitled to argue that the observed price dispersion is greater than the "actual."

On noting the bimodal distribution of gin prices, one might be tempted to infer a quality difference between "better" and lesser gins. Our authority for labeling gin a product of roughly uniform quality is Consumers Union [20]. As to life insurance, one may note as desirable and valuable the financial or investment counseling that a well-trained agent provides. Here the rub arises from the fact that the price for a particular policy from a particular company is the same regardless of the identity of the agent and any ancillary services that s/he renders or fails to render.

The almost universal reaction of consumers of these and similar data is that higher prices are charged by retailers who confer many ancillary services such as easy return, attractive store decor, attractive store guarantees, more personal services by salespeople, etc. Contrariwise, low prices tend to be charged by "bare bones" discount-type establishments. There is only one problem with this hypothesis: in the camera case where it was investigated, it turned out that none of the retailers tended to be consistently low or high in price. Instead, what appears to be happening conforms to Salop's price discrimination hypothesis [14]. Salop asserts that retailers sort out consumers by their apparent knowledgeability and then practice price discrimination among varieties of products. Thus, a particular retailer will charge a very low price for a particular variety, expecting to attract knowledgeable, less price-conscious customers.

A final consideration is price discrimination _per se_, i.e., the charging of different prices to different customers for the identical variety (with no difference in service provided). It seems plausible to us that retailers confine their practice of price discrimination with respect to the durable goods in our sample--tape recorders, stereo speakers, receivers, cameras, and washing machines. For these products, the exclusion of price discrimination among customers understates actual price dispersion for durable goods.

Completing this attempt to "adjust" the observed price dispersion for "innocent" factors, we conclude that the observed price dispersion is representative of reality for middle-class purchasers of aspirin, eggs, milk, grease/lubrication, gin, heating oil, term and whole life insurance; the data overestimate the price dispersion for white bread and underrepresent the price dispersion for durable goods.

Some readers may object that this adjustment process is incomplete, informal, and subjective. And so it may be. We know of no way of formalizing the adjustments undertaken above.

Summing up, these results suggest extensive and harmful price dispersion for all products investigated except the heating oil and the three food products--white bread, eggs and milk.

Between Brand and Between-Store Price Differences. The price dispersion for each product can be disaggregated into between-brand and between-store differences. For some products, like washing machines and heating oil, each brand is sold only in one or two stores and hence the between-store differences are of little consequence. For bread, the price is set by the baking company and most stores accept the baking company's suggested price. For bread most of the price variation is thus attributable to between-brand price differences. For grease/lubrication of a car, there is no brand, and only between-garage differences remain.

Between-store and between-brand dispersion have different implications for consumers. It takes more time to ascertain between-store price differences as compared with between-brand differences. When each store sells several brands, consumers may rely on information provided by salespeople. Not so when each store carries only one brand. Salespeople are hardly likely to provide information about brands carried by competitors!

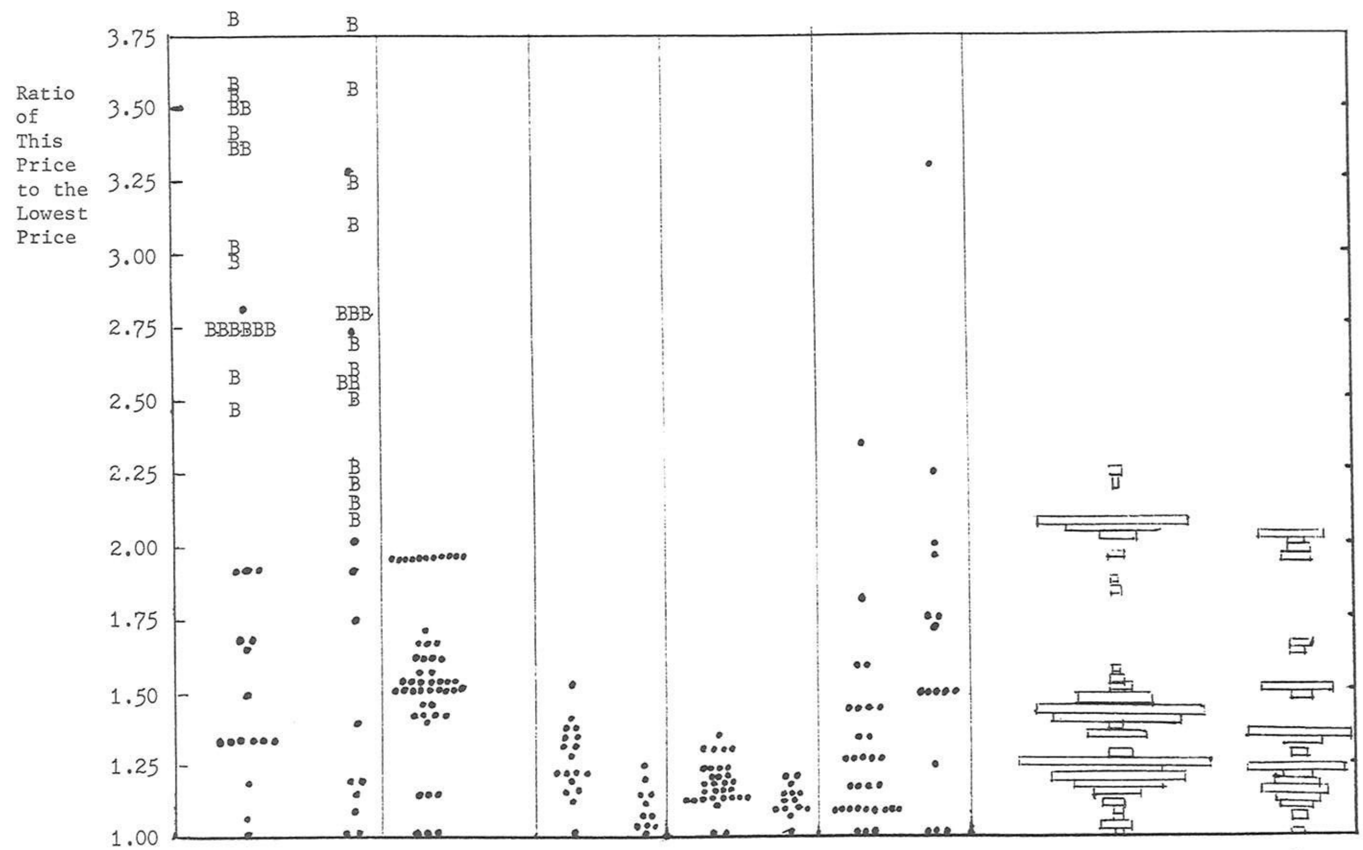
Consider the price dispersion for aspirin as depicted in Chart 1. Relatively speaking, this is the largest in our entire sample. Typically, stores selling aspirin carry two or three brands. As can be seen from Chart 1, Bayer aspirin ("B" on the chart) is almost always more expensive than its competitors. Bayer's sells for quite different prices in different stores. Hence, it contributes to both between-brand and between-store price differences.

As the number of brands carried by each store is usually three or less, it should be easy for consumers to identify the cheapest brand of aspirin. Ignorance of quality probably explains why some choose the higher-priced brand. Bayer's is more heavily advertised and many may be persuaded that it is "better" (it is not). The

CHART 1

Distribution of Actual Prices, Ithaca and Syracuse

Part A: Products of Uniform Quality



Market:	Ithaca	Syra-cuse	I	I	S	I	S	I	S	I	S
Product:	Aspirin		Bread (White)	Eggs		Milk		Grease/ Lubrication		Gin	
Lowest Price:	$0.36	$0.39	0.39	0.65	0.74	0.69	0.69	2.75	2.00	3.85	3.95
Choice:											
Varieties											
Retailers											
Price Offers	45	30	50	18	11	32	15	30	16	209	106

B = Bayer brand of aspirin

Chart 1 (continued)

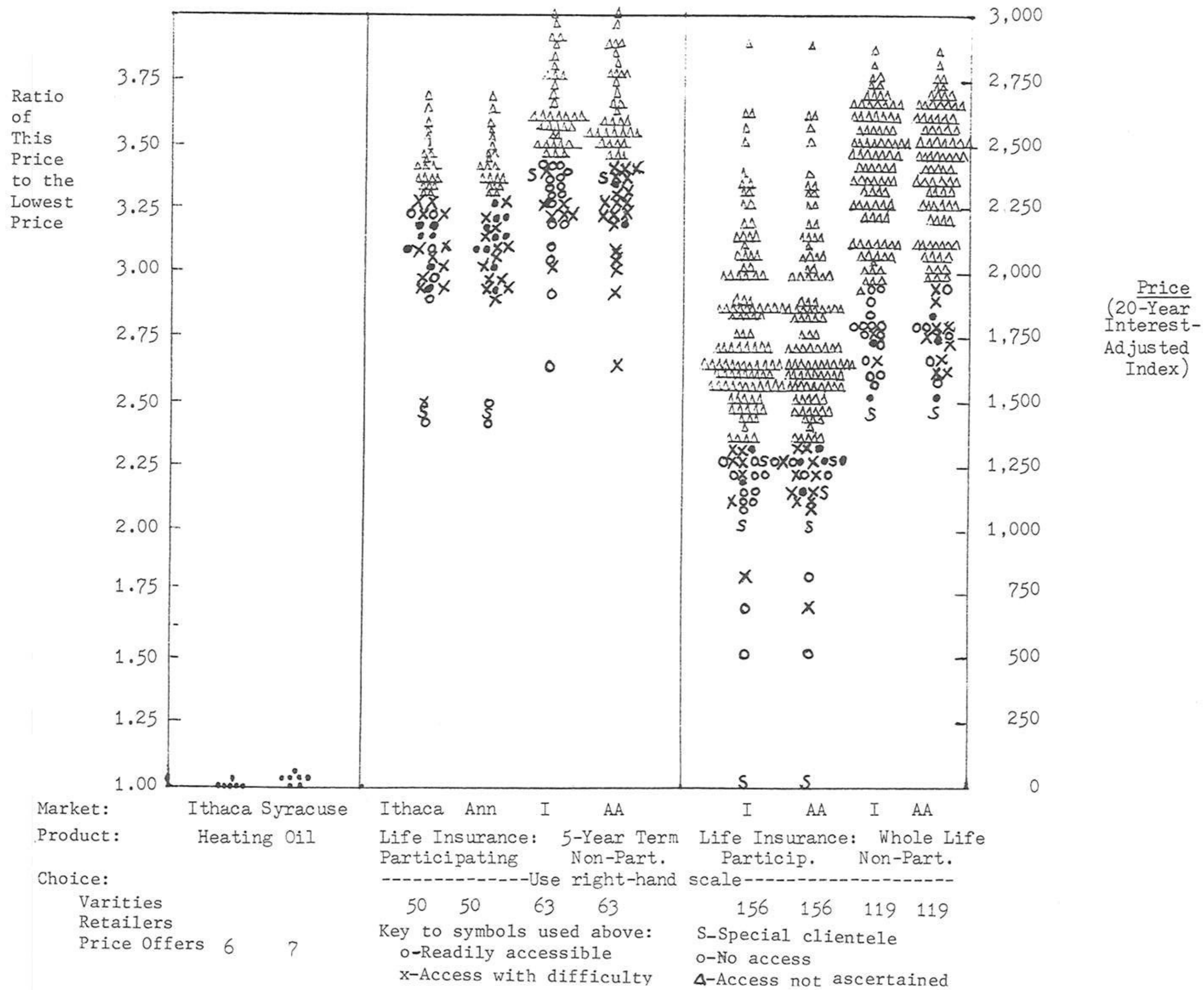


Chart 2. Dishwashing Liquids by price and quality. Syracuse, 1978.

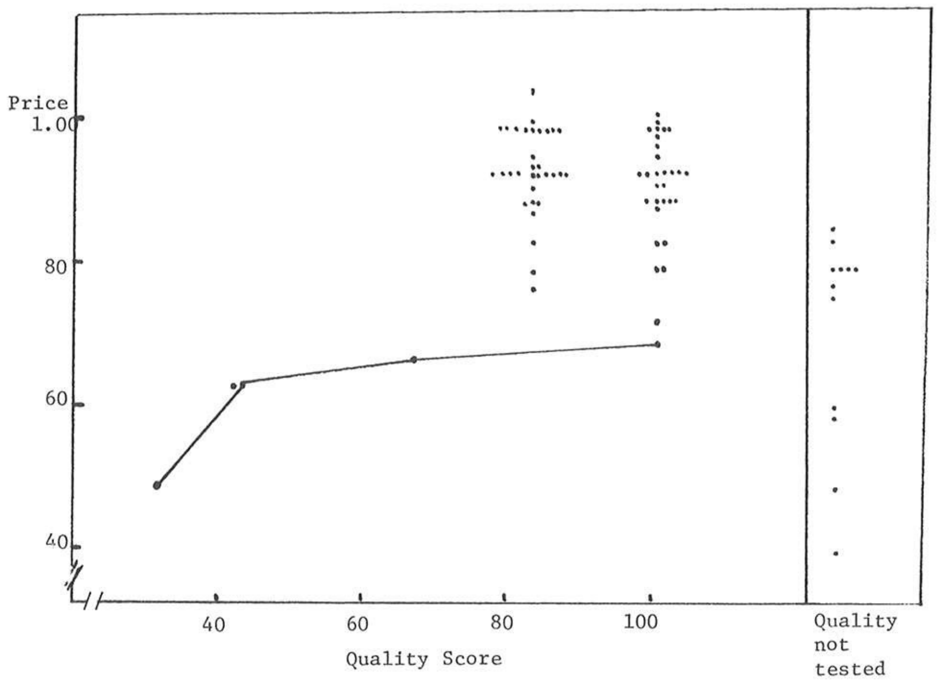


Chart 3. Mini-tape recorders by Price and Quality, Syracuse, New York, 1978.

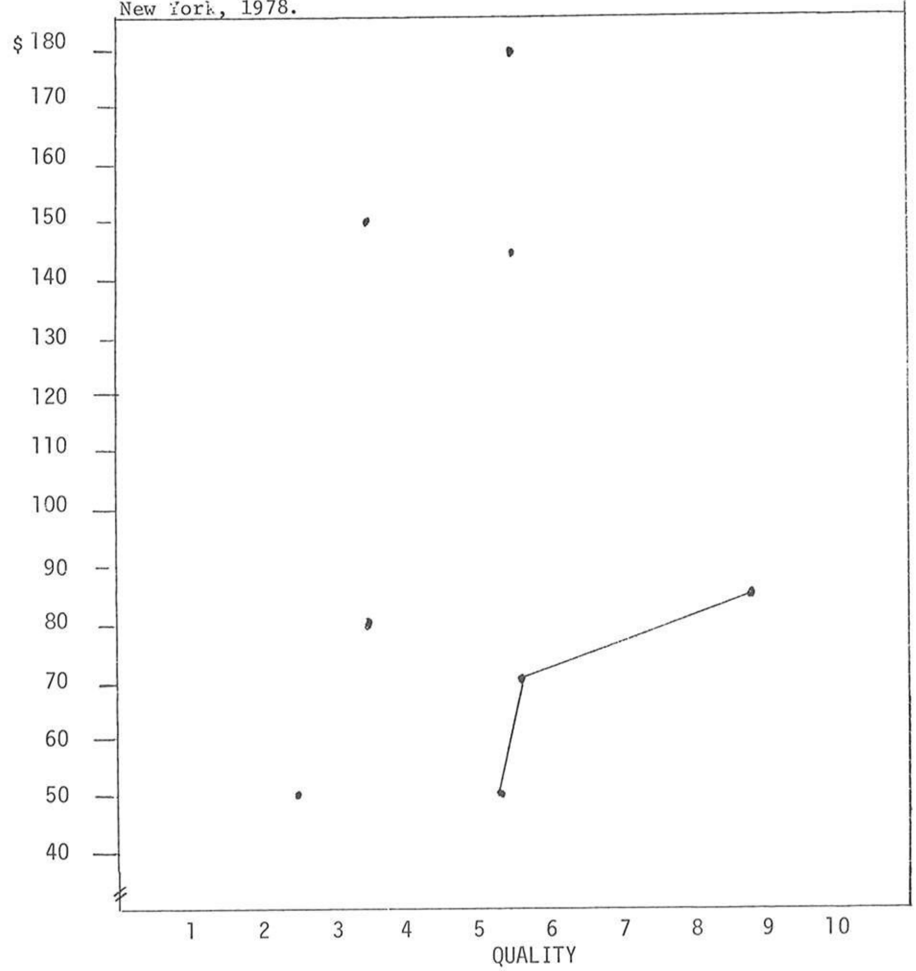


Chart 4. Stereo Speakers by Price and Quality, Syracuse, New York, March 1978.

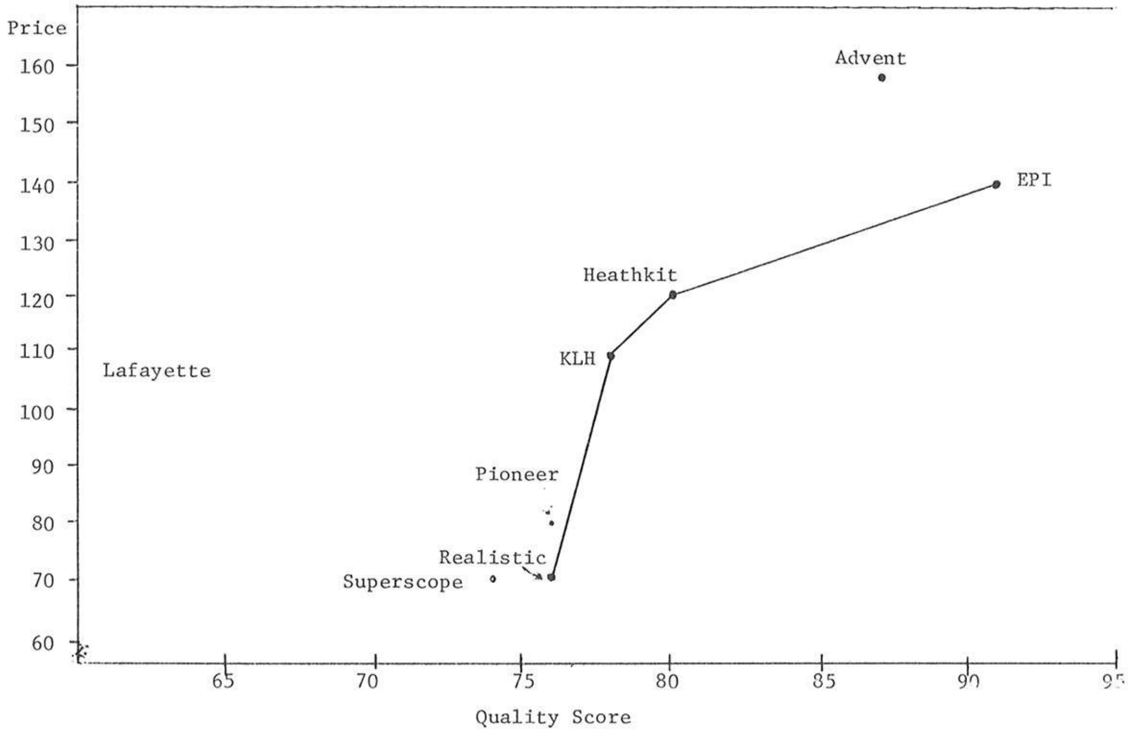
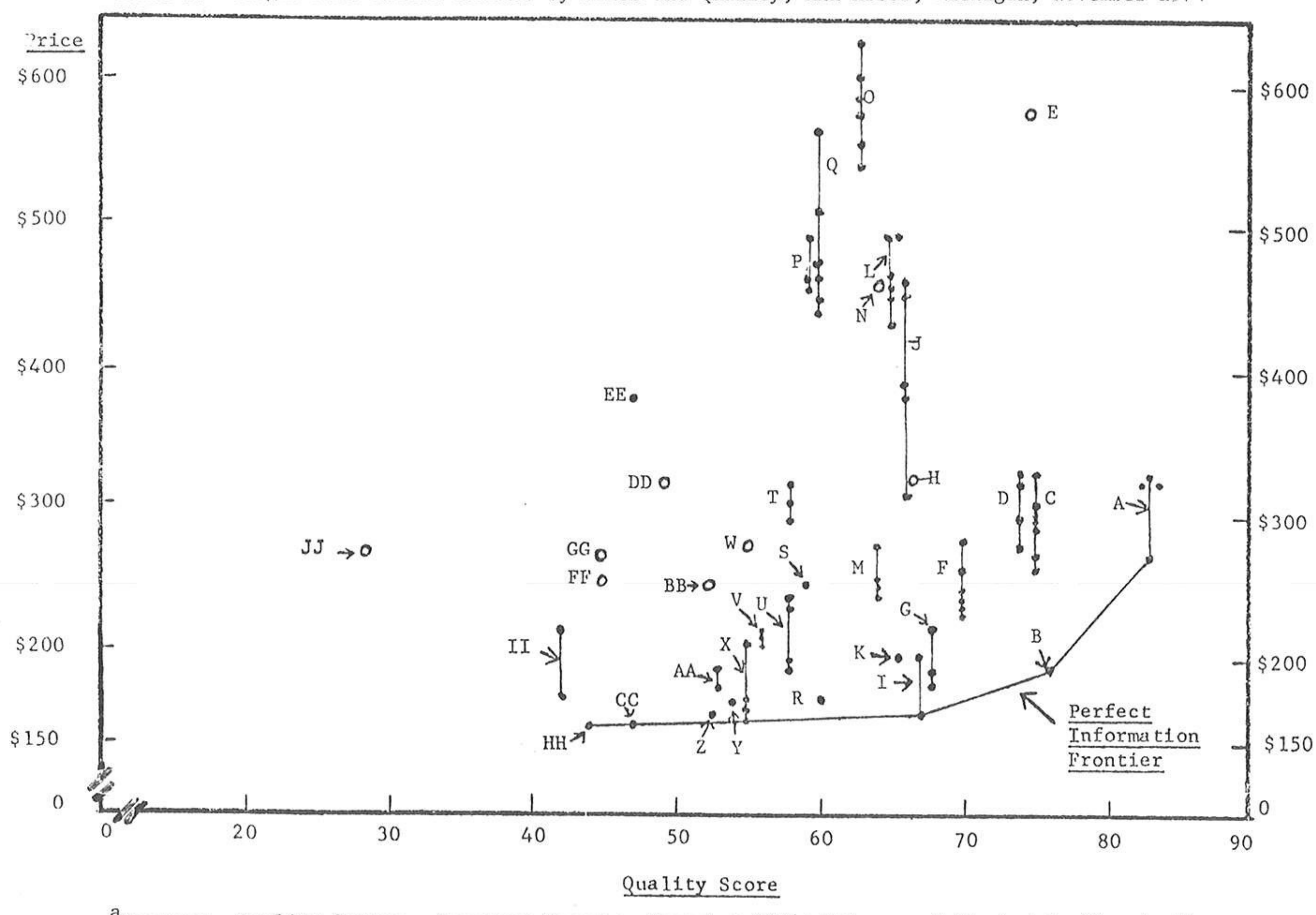


Chart 5. Single-lens Reflex Cameras by Price and Quality, Ann Arbor, Michigan, November 1974[a]



[a]Sources; Quality Scores - Consumer Reports, November 1974; Prices - Collected by Blanche Maynes, November 18-26, 1974.

The symbol o denotes the list prices of specimens which could not be purchased in Ann Arbor.