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## AMERICAN COUNCIL ON CONSUMER INTERESTS

Established in 1953, ACCI is a non-partisan, non-profit, incorporated professional organization governed by elected officers and directors.

Committees work on issues in such areas as consumer education, consumer research and international consumer affairs. Student chapters are located at various colleges.

## PUBLICATIONS

*The Journal of Consumer Affairs*, an interdisciplinary academic journal, is published twice a year.

*Advancing the Consumer Interest*, focuses on the application of knowledge and analysis of current consumer issues.

The *ACCI Newsletter*, published nine times a year, offers information on the latest developments in the consumer field.

Employment Opportunities, published as an insert in the *ACCI Newsletter*, provides information on professional positions in academia, business, government, and non profit organizations.

## CONFERENCES

An Annual Conference is held each spring and features keynote speakers, papers, research findings, reports of consumer articles and education programs.

Upcoming conferences are:  
1991: April 3-6, Cincinnati, OH  
1992: Tucson, AZ  
1993: Lexington, KY

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## EDITORIAL POLICY STATEMENT

*Advancing the Consumer Interest* is designed to appeal to professionals working in the consumer field. This includes teachers in higher and secondary education, researchers, extension specialists, consumer affairs professionals in business and government, students in consumer science, and other practitioners in consumer affairs.

Manuscripts may address significant trends in consumer affairs and education, innovative consumer education programs in the private and public sector, reasoned essays on consumer policy, and applications of consumer research, theories, models, and concepts.

Suggested content may include but not necessarily be limited to:

1. Position papers on important issues in consumer affairs and education.
2. Description and analyses of exemplary education, extension, community, and other consumer programs.
3. Research reported at a level of technical sophistication applicable to practitioners as well as researchers. The emphasis of this research should be on its implications and applications for consumer education, policy, etc. The primary question of the reported research should be, "What does this research mean for practitioners?"
4. Application of theories, models, concepts, and/or research findings to problem solutions for target audiences.
5. Articles summarizing research in a given area and expanding on its implications for the target audience.

The *Guide For Submission of Manuscripts* may be obtained from the Editorial Office.

The Russel M. Dixon Award of \$200 is given to the best applied paper in each volume of *ACI*. Contact the Editorial Office for further information.

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# EDITOR'S COMMENTARY

**W**e are now into the second volume of *ACI*. Although the production of each successive issue goes more smoothly, thanks especially to the editorial staff, I will not feel truly comfortable until there is a substantial backlog of manuscripts. My recurring nightmare is having an issue with nothing to print but one long *Editor's Commentary!* That certainly would result in a loss of membership for ACCI. Therefore, I urge readers to submit papers for the Refereed and the Department sections of *ACI*, or if you have no manuscripts of your own, that you urge others to submit theirs. Associate editor Bob Kroll is initiating a series, *Defining the Consumer Interest*, and we encourage papers on this topic.

You may have noted the absence of a *Reader's Commentary* in this issue—the result not of censorship but rather reader apathy. Two controversial papers are included in this issue to challenge apathetic readers to submit reasoned essays or *Reader's Commentaries* supporting or rebutting author's positions. One paper pertains to pilot stress as a factor of air safety and the other to consumer education from the perspective of President Bush's Assistant on Consumer Affairs. The former addresses a long-standing consumer controversy concerning how much attention consumers should give to the labor conditions under which goods and services are produced. In its first issue in 1936, *Consumer Reports* stated that in addition to reporting the test results of goods, it would report the labor conditions under which goods are made. It

even included an "Unfair (to workers) List" that contained R. J. Reynolds, Borden's, and S. S. Kresge, among others. While representing labor causes before he became a U. S. Supreme Court Justice, Felix

Frankfurter stated that we not only consume goods and services, but we also consume the lives of the people who provide them, further supports this concept. In their *ACI* article, Little and Gaffney ask us to consider the welfare of the workers who provide air service.

In his response, Barnett says that consumers should take the bargains and run, implying that market forces will ultimately benefit the citizen both in the role of consumer and of producer. As advocates for consumer welfare, which policy should we follow?

The controversy in Bonnie Guiton's article relates to the disagreement among educators over the place of consumer education in the curriculum: Should it be a separate course or integrated as a consumer concept into existing courses. Many educators, including myself, take the position that although the integration model sounds good in theory, in practice it gives short shrift to consumer education. We argue that there is still a need for separate consumer education courses if we are to train competent consumers. Few teachers have the appreciation or knowledge of consumer concepts needed to integrate them effectively into their respective subjects. I often wonder if the decline in knowledge of geography among Americans is the result of eliminating this subject as a separate course in the curriculum. Do you agree with or

reject Bonnie Guiton's position?

In closing, I'd like to note that publishing *ACI* literally is a pain in the neck. Recently, Timothy Sheppard, *ACI*'s talented (and underpaid) illustrator and designer, had a major operation for a herniated neck disc that restricted the use of his right arm. I had the same problem restricting the use of my left arm but, fortunately, I did not need surgery. In addition, associate editor Bob Kroll, has also been experiencing neck pains. This evidence leads me to advise the next *ACI* editor to negotiate with ACCI for a medical plan covering this hazardous duty.

John R. Burton, Editor *ACI*



## ANNOUNCING RUSSELL M. DIXON AWARD WINNER

Rader Hayes, Assistant Professor of Consumer Science, University of Wisconsin, has been honored with the annual Russell M. Dixon Award for the best applied paper published in a single volume of *ACI*. Dr. Hayes' article, "The Integration of Consumer Research and Consumer Education," appeared as the lead article in Volume 1, Number 1, and drew the attention of several *ACI* readers who reported using it in their professional activities. Robert Kroll, chair of the Russell M. Dixon Award committee, will present the award to Dr. Hayes at the annual 1990 ACCI conference in New Orleans. For details about this award, write the *ACI* editor.

# STEWART M. LEE CONSUMER EDUCATION AWARD

The recipient of the Stewart M. Lee Consumer Education Award is *Rosella Bannister*, Director of the Michigan Consumer Education Center, College of Education, Eastern Michigan University. This award was presented at the 1990 annual conference of ACCI in New Orleans.

Rosella Bannister's vita reflects a person highly deserving of this award. Her Center activities include developing of teacher education materials in personal finance and consumer economics, and developing partnership consumer education programs with business, labor, government and community groups. Also, in her position at the Consumer Education Center, she has directed grants and contracts in excess of \$1,500,000.

Rosella is an author or co-author of the following publications:

1990 - Textbook and Teaching

Guide—*Consumers Make Economic Decisions*

1990 - Teaching Guide—*Children and Money*

1989 - Video & Discussion Guide—*Credit: Tool or Trap*

1988 - Teaching Guide—*Consumer Approach to Investing*

1986 - Textbook—*Financial Planning for Bankers*

1983 - Workshop Manual—*Personal and Family Financial Planning*

1982 - Research Report—*Classification of Concepts in Consumer Education.*

In addition to the above publications, Rosella Bannister is also an associate editor of *ACI*.

Rosella serves on the Executive Board of the National Coalition for Consumer Education, the Consumer Educators of Michigan, and the Michigan Economic Education Council. She also serves on Advisory Boards to the Michigan Educational Assessment Program

and the American Chemical Manufacturers' Association. In addition, Rosella holds memberships in the Society of Consumer Affairs Professionals in Business and the ACCI.

In her professional career, Rosella Bannister has held positions in business and government as well as higher education, including a one-year assignment as Education Program Specialist with the United States Department of Education. Rosella has been a guest of the Japanese Government Economic Planning Agency, where she addressed a conference of business, government, education and consumer leaders on the topic "Consumer Education in the United States." In 1989, Rosella held meetings with consumer leaders in England, Scotland and Belgium regarding the need for international cooperation and public-private partnerships to strengthen and promote consumer education in the US and the European Community.

State and national awards received by Rosella Bannister include the Senator Philip A. Hart honorary award in 1981 from the Consumer Educators of Michigan, and a teacher education award in 1982 from the American Council of Life Insurance.

The letter of nomination for the first recipient of this award cited the exceptional variety of the awardee's contributions to consumer education. This includes her excellence in teaching, research, and community and professional service.

In awarding the first Stewart M. Lee Consumer Education Award to Rosella Bannister, the Selection Committee noted that she is uniquely qualified to be the recipient, having made so many significant, ongoing contributions to the field of consumer education, to professionals in the field, and to consumer citizens of all ages.

## ABOUT THE STEWART M. LEE CONSUMER EDUCATION AWARD

Purposes of the award: (1) to recognize the outstanding, long-term contributions of Stewart M. Lee to consumer education (2) to acknowledge and encourage other outstanding efforts in consumer education that exemplify the qualities of Stewart M. Lee and his work.

This award was named in honor of Dr. Stewart M. Lee, a respected friend, advocate, and educator of consumers. He was a founding member of the American Council on Consumer Interests, and has served the organization well in various roles and leadership positions. In 1977, Dr. Lee received the ACCI Distinguished Fellows Award. Numerous organization and countless teachers and students have benefitted from Dr. Lee's extensive contributions to consumer education from his base as Professor and Chairman, Department of Economics and Business Administration, Geneva College. ACCI members know Dr. Lee best through the *ACCI Newsletter*, which he edited for a period of thirty years ending in 1989.

Dr. Lee is author of significant literature in the consumer interest, and has often testified before the U.S. Senate and House Committees. His dedicated leadership includes service on the President's Consumer Advisory Council, the United States delegation to the United Nations, the board of the National Coalition for Consumer Education, the board of directors of Consumers Union, and the International Organization of Consumers Unions.

The quality of Dr. Lee's contributions has been consistently high. The thoughtful manner in which he has gone about all aspects of this work has itself been exemplary and merits recognition and emulation by others who build on the foundation he has helped to establish.

To this end, the American Council on Consumer Interests has established the Stewart M. Lee Consumer Education Award in his honor. This annual award will recognize other exceptional contributions to the field of consumer education.

# BICYCLE INJURIES AND SAFETY ALTERNATIVES

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*This report examines the nature and severity of injuries that occur to bicyclists with emphasis on reducing injuries through helmet use, education, and adherence to the law.*

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**E**ach year more than 1,300 bicyclists die and more than 30,000 children are injured in the United States as a result of bicycling accidents (Weiss & Duncan, 1986). At the present time, bicycles are owned by about 30 percent of the United States population and 45 percent ride at least occasionally (Kraus, Fife, & Conroy, 1987). Child cyclists are frequently involved in accidents and regularly require hospital admission for head injuries (Clark & Sibert, 1986). Weiss (1986) found that only two percent of young children and 10 percent of college students actually wear helmets. A bicycle helmet has the potential to protect a rider from head injury (Weiss & Duncan, 1986).

The purpose of this report is to examine the kinds and severity of injuries to bicyclists. Additionally, helmets are discussed, with emphasis on benefits in bicycling accidents. Lastly, other alternatives to reduce bicyclists' injuries are discussed, including education and requirements for safe riding through law enforcement. The information contained in this report comes from studies conducted in the United States, Canada, Great Britain, and Australia. Injury data tend to represent only the serious cases reported to hospitals,

emergency rooms, and police departments. The actual number of unreported minor injuries is unknown, but the incidence is suspected to be significant. In a study conducted on a college campus, Kruse and McBeath (1980) found that only 8 % of bicycle accidents were reported to the police. If this figure is accurate for other populations, the actual number of bicycling injuries could be quite large.

## BICYCLE INJURIES

The number of bicycle-related childhood deaths in the United States exceeds that from accidental poisoning, falls, firearm injuries, and many serious medical illnesses (Weiss & Duncan, 1986).

In one of the most notable studies—conducted in Dade County, Florida, from March 1958 through December 1979—fatally injured bicyclists were autopsied by the County Medical Examiner's Office (Fife, Davis, Tate, Wells, Mohan & Williams, 1983). Of the 173 individuals who died—139 males and 34 females with the median age of 14 years—it was determined that 159 died from serious head injuries with 101 having skull fractures of some kind. None of the fatalities wore helmets.

Similar results were found with respect to the age and gender of injured bicyclists as well as types of serious injuries in a study conducted in Minneapolis. Of the 192 injuries studied, 60 percent of the victims were male. The average age of the cyclist was 15 years (Davis, Litman, Crenshaw & Mueller, 1980). Motor vehicles were involved in 13 percent of the accidents. Bicyclists were at fault 42 percent of the time. Halek, Webster, and Hughes (1980), reporting a Tucson, Arizona, study, indicated most accidents occurred at intersections during rush hour traffic.

Guichon and Myles (1975) discuss a similar study conducted in Canada. Police records were examined, along with admissions to hospitals, to determine the number and severity of injuries to bicyclists. In this study, head injuries were again the leading cause of death to the individual: 67 percent of those who died received trauma to the head. Twenty percent of injuries occurred in collisions with motor vehicles; all deaths involved motor vehicles. The authors concluded that while many severe injuries are associated with bicycle use, head injury is most common with upper-arm injuries comprising the second largest group of injuries (18%). Davis et al. (1980) reported that face and head injuries were most common with hand and wrist injuries next.

**HEAD AND BRAIN INJURY.** A survey of brain injuries to bicycle riders was conducted in San Diego County, California. The study compared the incidence of bicycling-related brain injuries to brain injuries in the general population. Brain damage was defined as damage to the brain from a sharp blow to the head. Of the 3,358 brain injuries investigated, 7% were bicycle-related with an annual incidence of 13.5 injuries per 100,000 people. Kraus, Fife, and Conroy (1987) reported that bicycle-related brain injuries were more severe when the mishap involved collision with a motor vehicle. They also found that for individuals 14 years old or younger, 22% of the brain injuries were bicycle related. It is not

known if the higher percentage is due to children riding bicycles more often than adults, or if children are more careless and get involved in more mishaps. However, lack of helmet use by children is well documented (only 2 to 4% among those under 15) use helmets (Thompson, Rivara, & Thompson, 1989; Weiss, 1986).

The most recently reported study by Thompson, Rivara, & Thompson (1989) used two matched control groups in their scientific study of patients with head injuries received while bicycling. They used logistic regression analyses to control for age, sex, income, education, cycling experience, and the severity of the accident. As reported recently in the *New England Journal of Medicine*, bicycle riders wearing helmets had an 85% reduction in their risk of head injury and an 88% reduction in the risk of brain injury. A head injury was defined as injury to areas of the head that a helmet might reasonably protect (could be as severe as a skull fracture), and brain injury was defined as a concussion or more serious brain dysfunction (Thompson et al., 1989).

Summary conclusions about bicycling injuries and victims include:

- Head injuries are the most common type of bicycling injury.
- Young males, 12-16 years old, are most frequently in accidents.
- Most bicyclists' deaths are due to collisions with motor vehicles.

## INJURY-REDUCING ALTERNATIVES

It is evident that a problem exists and solutions should be found to reduce the number of bicycle accidents as well as the severity of injuries sustained by bicyclists. There are many kinds of injuries from bicycling accidents, but one type is of greatest concern. Head trauma is involved in the largest percentage of serious bicycling mishaps and is the cause of death in the majority of fatal bicycling accidents (Weiss & Duncan, 1980). Larson and Schwab (1985) found that 75% of deaths from cycling accidents are the result of head injuries.

**BICYCLE HELMETS.** Researchers seem to agree that the regular use of an approved bicycle helmet can reduce the majority of injuries and possibly prevent some deaths. Weiss and Duncan (1986) suggest that the frequency of bicycle-related injuries could be markedly reduced if cyclists wore protective helmets. Clark and Sibert (1986) concluded that head protection, if used widely, would considerably reduce the severity of bicycling accident head injuries. Thompson et al. (1989) found that riders who do not wear helmets have a 6.6 times greater risk of head injury and a 8.3 times greater risk of brain injury than riders who do.

The use of a helmet during bicycling is a necessary and logical means of preventing and reducing brain injury from mishaps involving motor vehicles (Kraus, Fife & Conroy, 1987). McDermott (1984) found that only 1% of children injured in BMX races suffer head injuries because helmets are compulsory for competition. Fife et al. (1983) concluded that a helmet provides obvious protection against head injury.

Experts seem to agree that helmet use by bicycle riders





can reduce injury and death. However, there are many different kinds of helmets and some are significantly better than others. Consumers have a right to know which helmets are better so they can make informed purchase decisions.

Bishop and Baird (1984) evaluated selected bicycle helmets to assess their impact capabilities. Of the helmets tested, the nine that passed had solid polystyrene liners and hard shells. Helmets were also tested in a second crash to see how well the helmets stood up to multiple impacts. Even the solid polystyrene helmets did not provide very much protection on second impact because the solid polystyrene liner was crushed in the first impact.

Until recently, no standard had been recommended for bicycle helmets and the consumer could not be certain about the quality of a particular helmet. In 1984 the American National Standards Institute (ANSI) and the Snell Memorial Foundation adopted similar advisory performance standards for bicycle helmets (Larson & Schwab, 1985). Both standards specify test methods for impact attenuation.

Larson and Schwab (1985) found that helmets passing the tests all had hard, full cover shells made of either fiberglass, ABS plastic, or Lexan plastic. The helmets that passed or exceeded the standards had liners of expanded polystyrene (EPS), a high grade styrofoam designed to crush upon impact. The most effective practice is to buy a quality helmet with a hard shell on the outside and an expanded polystyrene liner. The helmet should be replaced after becoming involved in an impact of any significance. Thompson et al. (1989) were unable to examine the efficacy of different types of helmets because most of the helmets in that recent study were hard outer shells with polystyrene liners. Less protective helmets constituted approximately 13% of those in their study and caused the authors to state that including the less protective helmets in the analysis underestimates the protective effect of the hard shell helmets. Overall they conclude that bicycle helmets are effective in preventing head injuries.

The proper use of helmets reduces deaths and injuries. This information is being published more widely via articles in the popular press. However, in the *Washington Post*, Colburn and Berg (1986) state that only 2% of elementary, junior high, and senior high school students currently wear helmets while riding bicycles. More publicity must be provided regarding not only the number of bicycling injuries that occur, but also protective measures that could prevent injuries.

Researchers seem to agree that the diligent use of approved bicycle helmets would reduce head and brain injury to bicyclists and save lives. Using a helmet helps, but there are other ways to improve bicycle safety that would in turn reduce the number of serious injuries. In the following section education and adherence to the law are discussed.

**EDUCATION.** Educating the public regarding bicycling injuries is better supported outside the United States. Armson and Pollard (1986) reported that more education regarding rules of the road and the proper use of safety helmets would cut injuries drastically. In schools in Victoria, Australia, the Education Department has a Bike-Ed program. Mandatory education has resulted in rules requiring the use of helmets when riding to and from school (McDermott, 1984).

McDermott also points out that the mass media in Australia feature tragedies of school children dying from head injuries. This publicity has helped awareness of the problem. A graphic display of injury may be difficult to watch, but it seems to be an effective means of making the point.

Similar findings regarding positive education programs, indicate that the answer to bicycling injuries is education, especially of children. Children are very responsive to external stimuli and should be taught about bicycle safety at an early age. Education also raises public awareness of the incidence of bicycle accidents and injury for both bicycle riders and automobile drivers.

Another useful way to inform children and adults about the hazards of riding bicycles would be preventive information distributed by physicians during routine well-child care. Physicians are not always aware of the importance of helmets, and they are seldom part of health-education efforts. These factors certainly contribute to the lack of widespread helmet use (Thompson et al., 1989).

Bicycle safety, with particular emphasis on helmet use, might be appropriate for discussions with the parents of young grade school children. Discussions with children themselves are also important, especially junior high students, since bicycle-related deaths are highest in this group.

**ADHERENCE TO THE LAW.** Some believe that bicycle injuries can best be reduced if bicyclists obey traffic rules more often. Davis et al. (1980) reported that cyclists' disregard for basic traffic laws was a major factor in 70% of bicycle and motor vehicle accidents. This is not hard to believe, as one can often observe cyclists who slow down but do not stop for stop signs. Trinkaus (1985) conducted a study in New York at a busy intersection where 137 bikes passed per hour and 61 of the cyclists encountered a red light. Trinkaus found that 19 went through the intersection without stopping, and 41 seemingly stopped because cross traffic necessitated that they stop. Only one stopped because the light was red! At a nearby stop sign, 140 cyclists were observed and only three stopped correctly. Bicycles are recognized as vehicles in all 50 states. This legal fact needs to be emphasized, and police should be encouraged to enforce traffic rules for bikers.

McDermott (1984) suggested that bicyclists under the age of seven should be forbidden on the street. At seven years of age, the proper use of the safety helmet should be explained as well as the meaning of road signs (McDermott, 1984). The safe use of bicycles should be demonstrated to children, after which they can be allowed to practice under supervision, and finally be issued a license when proficient (McDermott, 1984). This program is recommended for educating the young and getting them off to a safe start in cycling. Davis et al. (1980) suggest that accidents can be reduced by properly maintaining bicycles, using helmets and protective clothing, and avoiding loose sand or gravel. In addition, the use of lights and reflectors would help.

## CONCLUSION

It has been shown that many cyclists are injured and killed each year in cycling accidents. A large proportion of these

are young males who received serious head injuries. In fact, 75% of all bicycling-related deaths involve serious head trauma. Scientific evidence indicates that helmets would be an excellent countermeasure.

Helmet tests indicate that ANSI or Snell seals ensure that helmets meet or exceed the prescribed safety standards. Test results indicate that the best helmet has a hard shell cover with an expanded polystyrene liner. The United States Cycling Federation (USCF) has required hard shell helmets in all sanctioned competition for the past two years.

Helmets are effective, but they are not being used enough. The time has come for a major campaign to increase their use. Safety education programs must be instituted to promote safe cycling and inform children and adults of safety measures that prevent injuries. The fact that bicyclists, and sometimes motor vehicle drivers, disregard traffic laws is a problem. Bicyclists need to obey the law, as do other vehicle operators, and police need to be encouraged to enforce the law for protection of the rights and responsibilities of all vehicle operators.

### RECOMMENDATIONS

The evidence presented suggests that the mandatory use of bicycle helmets would help reduce the number of bicycle injuries and prevent some deaths. A mandatory helmet law could be difficult to pass given lessons learned from mandatory motorcycle helmet laws. If bikers followed rules of the road for vehicles, there would be no need for additional bike safety laws. Active parental involvement could also help bring about bicycle safety awareness through voluntary helmet use and enforcement of existing laws.

The target population is well-defined. Sixty-eight percent of severe head injuries occur to riders under 15 years old (Thompson et al., 1989). More emphasis must be placed on certifying young children regarding rules of the road and the importance of obeying road signs. Education should take place in public schools and emphasize the use of bicycle helmets and their effect on injury reduction. Children should learn in school that wearing a helmet is the correct, safe thing to do.

Education and law enforcement can be solutions to the problem. Awareness programs should be set up on a local basis with municipalities publishing the rules and penalties for disregarding the law.

Bicycle owner's manuals could also help solve the problem. Bicycle manufacturers have a responsibility to the public to provide information that can reduce injuries. The manual should have a safety section that discusses the use of a bicycle helmet and benefits of obeying traffic rules. Since few owner's manuals are read, especially by children younger than 15 years, a bright warning tag, required by the Consumer Product Safety Commission or the Federal Trade Commission, on all new bicycles would be a beginning toward educating children and parents regarding the safety benefits of helmet use and adherence to the law.

The number of bicycle-related deaths of children exceeds those from accidental poisoning and firearm injuries. The time has come to increase public awareness—through public

service announcements, consumer labeling, and mass education campaigns—of the incidence of injury and death of bicyclists and the role of helmets in preventing deaths and injuries.

It has been shown that bicycle helmets can reduce head and brain injury in bicycling accidents by 85 and 88%, respectively. Educational programs indicating the risks involved with riding bicycles and emphasizing rules to be followed would help. These three measures: helmet use, education, and adherence to the law are all effective ways of making bicycling a safer means of transportation and recreation. AD

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# ENGINEERING PSYCHOLOGY AND THE CONSUMER

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**S**ince World War II a new applied academic discipline called engineering psychology has emerged, bringing perspectives of psychology to the design of various devices for human use. In the last several decades the field has grown markedly with its primary emphases on military, aerospace and industrial rather than consumer applications. The relative lack of attention to consumers is unfortunate since many consumer products are poorly designed from an engineering psychology perspective.

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The purpose of this article is to introduce consumer affairs specialists to this relatively new field and to show them how further acquaintance with it could help consumers make more satisfying product choices in the marketplace.

### THE FIELD OF ENGINEERING PSYCHOLOGY

From its beginnings in the World War II era, the field of engineering psychology has focused on the design of machines for human use with the goal of making them, to employ an expression now in vogue, user-friendly. This relatively new field—also known as “human engineering,” “human factors engineering,” and “ergonomics”—has been broadly defined by one of its pioneers, Alphonse Chapanis (1985), as a discipline that “discovers and applies information about human abilities, limitations, and other characteristics to the design of tools, machines, systems, tasks, jobs, and environments for safe, comfortable and effective use.” Its aim is “to apply information about people to things—to the things that all of us have to use, or have to do, because of our occupations; or want to use, or want to do, because of our inclinations.”

A professional association, the Human Factors Society, was established in 1957 and now has some 4,500 members; most of its growth has occurred in the last ten years with the addition of more than 2,500 members. New academic journals were also launched during the postwar period (e.g., *Human Factors* and the *Journal of Man-Machine Studies*) as well as new courses and programs in colleges and universities.

As noted earlier, engineering psychology as an occupational specialty has focused on certain fields more than others. In particular, military and space applications have been common reflecting (1) the extraordinary number of new technological developments in these areas that require people and machines to work together in unfamiliar ways, and (2) the tremendous safety risks should such developments fail. More recently, industrial applications of engineering psychology have also grown substantially. This development reflects, in part, the publicity given to the extremely poor design, from an engineering psychology perspective, of the control room of the Three Mile Island nuclear facility, as noted by the Kemeny Commission appointed by President Jimmy Carter to examine the 1979 accident.

Largely missing from this brief review of the research literature is material on household products. Yet, as Huchingson (1981) noted, there are many common household products with

engineering psychology linkages such as “controls, displays, workspace restrictions, noise, vibration, and safety interfaces, maintainability problems, and instructions for operation and safety in use.”

Not only does the literature of engineering psychology show relatively few references to household equipment and devices, but so does the literature of household equipment and devices show few citations of engineering psychology. Household equipment is a subfield of home economics, and courses on this subject are offered by many colleges and universities. Since these courses typically deal with many aspects of common household equipment and devices (e.g., how they are made, work, are used and cared for), this writer decided to review commonly used textbooks for such courses (e.g., Wilson 1976; Garrison & Brasher 1982; Ehrenkranz & Inman 1983; Picket, Arnold & Ketterer 1986). A careful examination found no mention of engineering psychology or of specific research from this field. Yet, each of the books speaks of the growing complexity and sophistication of household equipment as well as its increasing role in our daily lives.

Thus the linkage between engineering psychology and household equipment has yet to be firmly established in either academic field, a circumstance that seems especially unfortunate in light of the rapidly expanding research base of engineering psychology and the increasing numbers of new and unfamiliar household devices that consumers encounter in the marketplace and the home.

### SAMPLE ENGINEERING PSYCHOLOGY PROBLEMS CONFRONTED BY CONSUMERS

To determine the kinds of engineering psychology problems consumers experience with household products, this writer recently conducted an informal survey of local consumers. Listed below are some typical problems noted:

- Hand calculators with keys too small and too close together to permit easy key entry by many users.
- Floor waxers with handles too short for tall users.
- Vacuum cleaners with disposable bags that are difficult to dislodge from the cleaners.
- Travel alarm clocks with poorly positioned alarm shutoff switches that are not easy to locate and deactivate in a darkened room.
- Reclining chairs that require inordinate strength to bring to upright position.
- Portable radios and other audio devices with toggle switch controls that do not comply with standard stereotypes (e.g., the “on” position should be “up” and the “off” position “down”; likewise, “high tone” positions should be “up” and “low tone” positions “down”).
- Kitchen ranges with four burners arranged in a *bowlike* configuration but with control knobs arranged across the front of the appliance in a *linear* configuration, thus making unclear which control knob is associated with which burner.

That problems such as these can affect large as well as small manufacturers became embarrassingly clear in November 1983 when IBM made its entry into the consumer market



with the PCjr home computer. Six months later this machine, which listed for \$1,300, was referred to by *Time* as one of the biggest sales flops in the history of the computing industry. The reason most frequently cited, according to Elmer-Dewitt (1984), was the PCjr's Chiclets-style keyboard with small, soft rubber buttons (instead of regular typewriter-style keys) that made it difficult to do more than slow, "hunt-and-peck" typing. In July 1984, IBM admitted its mistake by announcing that a typewriter-style keyboard would be retroactively provided free to each registered PCjr owner. The economic and public relations costs resulting from inattention to engineering psychology demonstrate that even large, established corporations can be seriously hurt by ignoring the principles of this field.

#### THE SYSTEMS MODEL AND ENGINEERING PSYCHOLOGY

As Kantowitz and Sorokin (1983) noted, the systems model is widely used as an analytical tool by engineering psychologists. To illustrate some of the implications of engineering psychology for consumers let us look briefly at the individual components of the systems model.

#### THE HUMAN OPERATOR

A fundamental finding of engineering psychology is the existence of individual differences among people—differences in abilities, talents, interests and personality. For example, as Konz (1979) noted, on the average, the grip strength of women is about two-thirds that of men. Also, women have smaller hands than men, about 2 cm. shorter according to one study (Ducharme 1977). These two findings suggest that women would have trouble with hand tools designed for a man's greater strength and hand, such as pliers, shears and wire strippers. This, indeed, is what Ducharme (1977) found in a survey of 1,400 adult women.

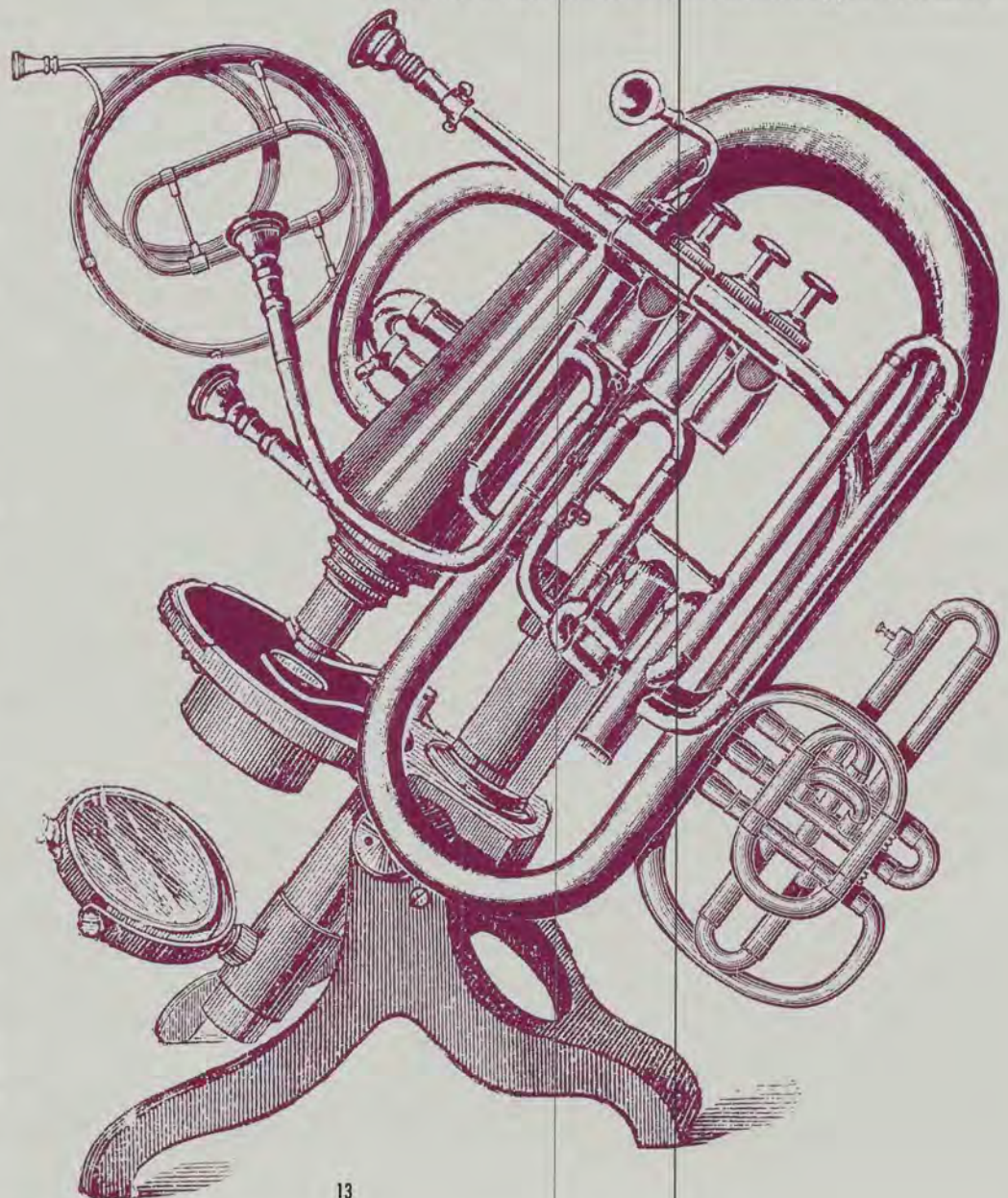
Left-handed people are another group that sometimes has difficulty operating hand tools. As Laveson and Meyer (1976) indicated, many serrated knives are designed with the beveled or cutting edge on the left-side. When such a knife is used by left-handed people, they may find that the knife fails to cut since the pressure is being

applied to the noncutting side. The situation would be improved for the approximately 10% of the population that is left-handed if knives were made with double-edge beveling.

Other groups whose capabilities may differ from the norm include the elderly (lessened strength and stamina as well as visual and auditory acuity) and people who are colorblind. The latter condition, which affects more men (about 1 in 12) than women (fewer than 1 in 100), has implications for the use of colors in visual displays and control mechanisms for household equipment.

*THE ITEM OF HOUSEHOLD EQUIPMENT.* Just as human operators differ, so do the items of household equipment they use. In an attempt to get a closer look at how such items differ, students in this writer's consumer psychology classes recently surveyed more than 300 adult consumers in their homes. Since this was a convenience sample consisting of friends, relatives and neighbors of the student interviewers, the results should be viewed as suggestive rather than definitive.

Of special interest for this article are the findings reported for ease of use for ten common household appliances. Each



appliance was rated on a five-point scale with 5 indicating "very easy to use" and 1 "very difficult to use." The three easiest to use appliances and their respective scores were: refrigerators (3.59), television sets (3.43) and telephones (3.35). The most difficult to use were videocassette recorders (2.32), vacuum cleaners (2.91), and stereophonic radios (2.94). Occupying the four middle positions were regular ranges (3.19), microwave ovens (3.24), washing machines (3.17) and clothes dryers (3.29).

Why these differences with regard to ease of use? The respondents were especially critical of the instruction manuals for videocassette recorders, a relatively new and complex piece of equipment with which many had had little previous experience. Maintenance was mentioned most frequently as a problem for vacuum cleaner users, especially changing bags. Stereo radio users complained most often about control knobs, claiming that there were too many and that their functions were not clear.

Some manufacturers, according to Sanders and McCormick (1987), have drawn heavily upon engineering psychology in the design of consumer products. One is the Reach toothbrush designed for Dupont by Applied Ergonomics, Inc. and manufactured by Johnson and Johnson. A second example is the disc camera introduced by the Eastman Kodak Company in 1982.

*THE SYSTEM TASK.* An important job of the engineering psychologist is to match user and product so that a particular task can be accomplished. This usually means a simple (and often less expensive) brand and model for a user with aspirations to perform less sophisticated tasks. If the consumer product is overly complex for the task the result may be a wasteful expenditure of consumer dollars along with a frustrating experience for the user. This is true especially if users find they have to cope with displays and controls that can be understood only by mastering a lengthy instruction manual. Many of the videocassette recorder users in the household product survey reported such frustrations.

*THE SYSTEM ENVIRONMENT.* Engineering psychologists have devoted an enormous amount of research attention to the subject of the system environment, especially as it relates to the often-stressful conditions of military and aerospace applications. Although consumer environments are usually more benign, an exception is the high heat and humidity levels often associated with summer. Together they often create stressful conditions that can lead to accidents involving such potentially hazardous household products as kitchen knives, garbage disposals, toasters and ranges.

#### HUMAN INTERACTIONS WITH HOUSEHOLD PRODUCTS

Having examined the individual elements of the system model used by the engineering psychologist, let us look next at the interactions of its human and machine components. Three psychological processes are of primary concern, and each has a counterpart in the machine world. First are the sensory and perceptual processes acting on the informational displays of household products. Next are the motor response

processes that act on the control mechanisms of the household devices to effect a system response. Between these two processes are cognitive processes that attempt to understand the principles of operation of the household product.

*SENSORY AND PERCEPTUAL PROCESSES.* Stimulating the sensory and perceptual processes of the user are various displays. These are of special interest to engineering psychologists conducting research on aerospace and military missions. Such undertakings often focus on human operators who are attempting to cope with unexpected developments in rapidly changing and often hostile environments (e.g., outer space or military combat). In contrast, the relatively constant household environment rarely poses such challenges and, as a result, there are fewer and less complex problems. Indeed, in the student survey of consumer difficulties with ten household products, display problems accounted for less than 2% (10 out of 592) of those noted by respondents. Nonetheless, display problems sometimes arise with the design of household equipment, and consumers should be alert to the possibility of presentations that are not likely to be attended to or correctly interpreted by product users. Of special concern are some of the newer electronic products for which display conventions have not yet evolved, such as microwave ovens, videocassette recorders and home computers.

*MOTOR RESPONSE PROCESSES.* A major motor response problem with household products concerns control mechanisms. The consumer survey found that respondents cited problems with control mechanisms more frequently than any other category. The problems were of six types: too insensitive (27%), too many (23%), poorly labeled (17%), too small or close together (14%), poorly positioned (11%) and not dependable, due, for example, to buttons sticking (15%). Control mechanism problems for five household products surveyed were especially troublesome: ranges, telephones, stereophonic radios, televisions and videocassette recorders.

Other control problems not noted in the survey concern the use of various hand tools. As Sanders and McCormick (1987) noted, hand tools should be designed to permit the user to engage them with the wrist aligned with the forearm. If the wrist is bent during extensive operations with a hand tool, the result can be tenosynovitis (inflammation of the tendons and their sheaths). Terrell and Purswell (1976) also found that a reduction in grip strength accompanies bent-wrist use of hand tools.

*COGNITIVE PROCESSES.* Recently a leading cognitive psychologist (Norman 1988) published a book using anecdotal sources and behavioral research literature to relate the significance of cognitive processes to engineering psychology. His treatment is far-ranging with examples of good and poor design for such devices as doors, faucets, typewriters, refrigerators, cars, computers, power plants and airplanes.

Norman introduces four principles of good design (1988, pp. 52-53):

1. *Visibility.* By simply looking, the user can tell the state of the alternatives for action.
2. *A good conceptual model.* The designer provides a good

conceptual model for the user with consistency in the presentation of operations and results and a coherent system image.

3. *Good mappings.* It is possible to determine the relationships between actions and results, between controls and their effects, and between the system state and what is visible.

4. *Feedback.* The user receives full and continuous feedback about the results of actions.

A well-designed household product, according to Norman, would be one consumers could "figure out" almost immediately because the designer had made clues to its operation very apparent. Moreover, once in operation, the machine would provide specific and timely feedback to permit users to make appropriate adjustments.

Unfortunately, few consumer products meet these high ideals. This is especially true of some of the new electronic products, many of which require familiarity with a lengthy instruction manual.



#### ENGINEERING PSYCHOLOGY GUIDELINES FOR BUYING HOUSEHOLD EQUIPMENT

Following are shopping guidelines for consumers looking for "user-friendly" selections.

1. *Tradeoff Between User-Friendliness and Other Criteria.* First, engineering psychology criteria should be considered in conjunction with other criteria: engineering (e.g., efficiency), economic (e.g., purchase price and operating costs), and aesthetic (e.g., attractiveness of the item to the senses). Tough tradeoff problems may emerge here and individual consumer values will play a critical role in resolving them.

2. *Characteristics of Components of the Model.* Assuming that engineering psychology considerations have some importance, they should be considered along with characteristics of each principal component of the systems model. Questions concern the characteristics of the user(s), product, task or tasks for which the product will be used, and environment(s) in which the equipment will operate. To illustrate the significance of such information, a product may work well for a right-handed person but not for a left-handed one; for one task but not another (reheating food in a microwave oven as compared to cooking food in it); in one environment but not another (a kitchen timer alarm that rings loudly in a quiet home may be barely audible in a noisy apartment).

Making these determinations is difficult and is further complicated when the purchaser and user are not the same person (e.g., buying a gift for a friend), or when the purchaser is acting as a buying agent for a group (e.g., acquiring a toaster-oven to be used by several members of the family). In these instances one can often do little better than guess at the correct choices.

3. *Comparison Shop.* Once the prospective purchaser has identified salient characteristics of the components of the system model, then the user-friendliness of several product mod-

els and brands should be checked out. This may be done using a simulation process (e.g., a mental exercise) but it preferably takes the form of an actual tryout at the point of purchase or at home. Ideally this "test drive" should be done under several operating conditions.

These steps are easier to state than accomplish, but if the effort is made, consumers may well improve their chances of purchasing user-friendly household products. The writer hopes that consumer educators will prepare themselves to help shoppers with this difficult task by becoming better acquainted with engineering psychology and its potential for the field of consumer affairs. The starred references below offer a useful starting point for consumer affairs professionals seeking additional sources of information. A1

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# GETTING IT RIGHT: FDA'S TAMPON LABELING PROPOSAL, REPROPOSAL, AND REVISED REPROPOSAL

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*On its third try, the FDA came up with a tampon labeling rule that satisfied most parties and was consistent with the findings of this empirical study.*

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Even though direct regulation of product and service characteristics dropped from legislative favor during the 1980s, support for providing consumers with information remained strong. New information disclosure requirements were brought to bear on alcoholic beverages, all-terrain vehicles, chewing tobacco, credit cards, home equity loans, an anti-acne drug, sulfites, sunglasses, salt, and airlines. In 1989, the U.S. Food and Drug Administration (FDA) undertook a major review of its food labeling requirements, and a bill to require disclosure of interest rates on savings accounts made legislative headway.

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It was fitting that the decade ended with the October 26, 1989 publication of the FDA's labeling rule for menstrual tampon absorbency. This rule ended an almost decade-long process of trying to help consumers reduce the risk of toxic shock syndrome (TSS). The tortuous path toward the final rule reveals both the primitive state of policy making as well as the need to design new information to take account of existing disclosure requirements and any (often unstandardized) descriptive terms used voluntarily by individual manufacturers.

### BACKGROUND ON THE TAMPON LABELING RULE

In the course of four months in 1980, toxic shock syndrome (TSS) was transformed from a virtually unknown disease to the object of a multimillion dollar voluntary product recall (Weiner 1986). The number of cases of TSS reported to the Centers for Disease Control (CDC) skyrocketed in 1980, totaling almost 900 and including 44 deaths (Broome 1989; CDC 1982; Winger 1989). The CDC figures constitute lower bound estimates because they are based on voluntary reports from physicians and patients. Although the exact incidence of TSS is not known, recent estimates range from one case per 100,000 menstruating women per year (Gaventa et al. 1989) to a high of 6-17 cases (Kotex package label).

TSS has been connected with high levels of tampon absorbency, although not all cases of TSS are menstruation-related. In 1980, 91% of reported cases were menstruation-related; in 1986 only 56% were (Winger 1989). While the first, small-scale studies of tampon-related TSS attributed the disease to a single tampon brand, Proctor and Gamble's Rely, later studies have tied TSS to the use of other superabsorbent tampons as well (Berkley, Hightower, Broome & Reinhold, 1987). Despite uncertainties about the precise connection between tampon use and TSS, the Food and Drug Administration (FDA) in 1982 required that all tampon manufacturers provide certain information to prospective users. Manufacturers were allowed to confine the TSS information to a package insert as long as the following warning appeared prominently and legibly on the package label:

*ATTENTION: Tampons are associated with Toxic Shock Syndrome (TSS). TSS is a rare but serious disease that may cause death. Read and save the enclosed information.*

Despite the required warning, the FDA remained concerned that women might not be provided with the information needed to select the tampon brand or type with the lowest absorbency required to effectively handle menstrual flow (i.e., minimize health risk without unduly sacrificing product performance). The FDA had been urged by consumer groups to either standardize or ban terms such as regular, super, and super plus that are commonly used by manufacturers to describe absorbency on the grounds that such terms are not currently used in a consistent fashion across brands ("Tampon Absorbency..." 1988; Wolfe 1987). As late as the spring of 1989, for example, the Plutex super had an absorbency rating of 10 grams while the o.b. regular had a rating of 11 grams.

After an unsuccessful attempt to encourage tampon manufacturers to develop a voluntary labeling format containing relative absorbency information,<sup>1</sup> the FDA proposed an additional labeling rule in September 1988. The essence of the

proposal was that all tampon packages would bear one of six letter designations (A through F), corresponding to increasing ranges of absorbency. For example, a designation of A would indicate an absorbency level of under 6 grams, and a designation of B would indicate an absorbency level of between 6 and 9 grams. In addition, the FDA rule would require manufacturers to explain the rating system and describe how it could be used by consumers to compare different tampon brands and types (*Federal Register* 1988). The FDA chose not to standardize terms like regular and super, but it did require that any such descriptors appear in close proximity to the mandatory letter designation.

### ANALYSIS OF THE PROPOSAL

The FDA's 1988 proposal raised a number of important scientific issues, but empirical research played virtually no role in the rule-making process. In an effort to test some of the assumptions embedded in the proposal, we conducted a small-scale empirical investigation of how consumers would interpret the tampon labeling proposal. Three research questions in particular were raised by the proposal:

1. To what extent do users know that a tradeoff exists between absorbency and risk?
2. Even if consumers understand the connection between absorbency and risk, will they readily equate an A rating with low absorbency?
3. Will consumers rely more heavily on existing nonstandardized terms like "regular" and "super" than on the new rating system, and how will consumers resolve any potential discrepancies between the two?

**BASIC FEATURES OF THE STUDY.** During March 1989, a nonrandom sample of 228 undergraduate students in a large university in the western United States participated in the study by filling out self-administered questionnaires. To maximize the representativeness of the sample relative to the undergraduate population at this particular university, recruitment took place in classes that fulfilled the university's general education requirements.

For the purposes of this study, college-aged students are a logical subject pool because the risk of TSS is greatest among young tampon users (Gaventa et al., 1989). Also, the impact of a government-mandated label is likely to be greatest among those consumers whose usage patterns are least ingrained. Because a university sample is higher in education than a random sample of females of similar age, the findings conservatively estimate the potential communication problems associated with tampon labels.

Respondents ranged in age from 18 to 49 with approximately half of the sample 21 years and younger. The vast majority of the sample (92.1%) reported having used tampons at some time, and 79% of the respondents indicated they currently used tampons. Of the current users, half said they used tampons exclusively while the other half used both tampons and sanitary napkins. The majority (54.1%) of the current tampon users use regular tampons during the first few days of their menstrual period, while 39.5% use the more absorbent super or super plus tampons and 6.3% use the less

absorbent junior type. (The results reported below are not sensitive to these differences in actual patterns of tampon use.)

**THE RELATIONSHIP BETWEEN ABSORBENCY AND RISK.** Although the exact causes of TSS are not completely understood, there is general scientific agreement that there is a direct relationship between tampon absorbency and risk of TSS. This relationship is explained in tampon boxes by means of an insert, but it is not clearly explained on boxes through either the warning mandated in 1982 or the proposed absorbency labels. Instead, tampon boxes carry the recommendation that women use the least absorbent tampon needed to control menstrual flow.

Dr. Sidney Wolfe (1987), director of the Ralph Nader-inspired Health Research Group, raised the issue of whether women understood the relationship between absorbency and risk of TSS. But throughout the rule-making process, the FDA chose not to address the issue. Because the ultimate effectiveness of any absorbency label depends on the extent to which women recognize the tradeoff between performance and safety, it is important to empirically examine the extent to which tampon users understand this relationship.

In our study, almost all of the respondents (93.4%) indicated that they had heard of TSS and 57.5% said they were aware of TSS warnings on tampon packages. To measure the respondents' awareness of the absorbency/safety tradeoff, they were told to assume that the commonly used descriptors of junior, regular, super, and super plus corresponded to particular absorbency levels, with junior being the least absorbent. They were then asked to identify the safest tampon. Only 32.9% of the respondents identified the junior as the safest. The majority of the respondents named regular tampons as the safest, with 11.8% selecting the super or the super plus. Based on these results, the original proposal did not adequately address public understanding of the link between tampon absorbency and the risk of TSS.

#### **USE OF A LETTERING SYSTEM.**

The most criticized feature of the 1988 tampon labeling proposal was its choice of a lettering system to

express tampon absorbency levels. Consumers have not demonstrated a high reliance on previous, letter-based disclosures. Foods such as cheese, eggs, fruits and vegetables are graded by the U.S. Department of Agriculture, but the highest rating is AA in some cases, A in others. Similarly, the lowest rating can range from B to D. Perhaps because of this inconsistency, few consumers appear to use the USDA grades. An A,B,C format is also used to indicate the traction and heat resistance of tires, with A indicating greater traction and heat resistance. Again, there is no evidence that consumers understand or employ this rating system.

Given the typical use of an A rating to indicate superior performance, the distinct possibility existed that tampon buyers would associate an A rating with greater absorbency (i.e., better performance) rather than, as intended by the FDA, with greater safety. To test possible misinterpretations of the FDA's original proposal, respondents were told that the FDA was considering a standardized labeling format based on the letters A through F. The respondents were then asked whether they would assume that an A rating means least or most absorbent. Nearly two thirds (62.8%) of them indicated they would assume that an A indicated most absorbent. Thus, an overwhelming majority of the sample would have misinterpreted the FDA's proposed letter rating system in the absence of additional information explaining the system.

**CONTINUED USE OF NONSTANDARDIZED TERMS.** Another controversial aspect of the labeling proposal was the FDA's



decision not to standardize or ban the use of terms such as junior, regular, super, and super plus. The FDA objected to standardizing these terms on the grounds that more than four categories (junior, regular, super, and super plus) were needed. It chose not to ban the terms either, presumably not wanting to infringe on the rights of manufacturers or eliminate a source of potentially useful consumer information.

Each tampon manufacturer has always been free to use nonstandardized, descriptive terms in any way it wished. As a result, actual cases existed where one company's super was less absorbent than another company's regular. Thus, a key question regarding any new labeling rule is how consumers will resolve any potential conflicts between a new standardized system and a more familiar but unstandardized system.

To explore this question, respondents received an explanation of the FDA's original proposal under which absorbency ratings ranged from A for least absorbent to F for most absorbent. They were then asked to identify which of two brands would be most absorbent: C/Super or D/Regular. The majority of respondents (55.9%) incorrectly chose the C/Super, demonstrating the power of terms already in use.

A follow-up question asked respondents by whom standards for terms like regular and super are established; 40.8% of respondents did not know. Of those respondents claiming to know, 65% correctly stated that the terms are defined by individual tampon manufacturers, 30% thought the terms were defined by the tampon industry, and 4% believed that the terms were standardized by the federal government. Thus, misperception of the origin of terms like regular and super may account for some of the cases in which respondents overrode the lettering system in the FDA proposal, but the power of familiar terms was probably a factor as well.

Finally, respondents were asked to select their most and least preferred labeling format for expressing tampon absorbency from among five choices: (1) a numbering system

(1 through 6), (2) a lettering system (A through F), (3) direct presentation of grams of absorbency, (4) placement relative to a continuum representing all brands on the market (similar to energy efficiency labels), and (5) standardization of current descriptive terms so that they corresponded to particular absorbency ranges (e.g., regular would mean 6-9 grams of absorbency).

Of the five alternatives, the most preferred format was standardization of current descriptive terms to correspond to specific ranges of tampon absorbency. The least preferred format was the lettering system.<sup>2</sup> The number of respondents who designated each of the five formats as their most preferred was: standardized terms (81), numbers 1 to 6 (54), number of grams (37), placement along a continuum (30), and letters A to F (20). This preference ordering did not vary by respondent age, type of tampon use, or reported importance placed on safety when selecting a tampon. Thus, the format initially proposed by the FDA was relatively unappealing to the consumers in our study.

#### THE 1989 REPROPOSAL AND REVISED REPROPOSAL

In response to numerous criticisms of the original proposal, the FDA published a reproposal on June 12, 1989. The reproposal abandoned the lettering scheme in favor of six new and standardized absorbency terms: low, medium, medium-high, high, very high, and highest absorbency. The proposal allowed but did not require manufacturers to display the absorbency range in grams corresponding to the applicable term. Moreover, manufacturers were permitted to continue using nonstandardized terms such as regular and super, but such terms had to be less prominent than the new terms. Finally, the reproposal stated that tampon package labels must include an explanation of the ranges of absorbency and their corresponding terms and how consumers might use this information to reduce the risk of TSS.

The FDA's reproposal never made an affirmative case for the six descriptors; instead, it pointed out the problems of alternative labeling formats. For example, the FDA made a convincing case for the use of 3-gram ranges of absorb-



ency, based on variations in tampon production and testing methods. But the FDA did not explain why the six particular terms were chosen.

While the use of new descriptive terms represented an improvement over the lettering format, the reproposal format still had problems. In particular, the use of the word "high" in four of the six categories could cause confusion. Without immediate reference to all six categories and their corresponding absorbency levels, consumers would likely have difficulty interpreting the four categories containing the word "high." Conversely, if consumers understand that there are six categories, a more disconcerting possibility exists. They may assume that the two middle categories, medium-high and high, represent tampons of average absorbency. In fact, a tampon labeled high would be at the upper end of today's tampon market in terms of absorbency. Thus, the new format might interfere with the goal of moving women to the least absorbent tampon consistent with their need to control menstrual flow.

The main criticism expressed during the public comment period was that a dual system of new, standardized term and old, unstandardized terms would confuse consumers and result in the failure of the repropose rule to accomplish its objectives (*Federal Register*, 1989). Prohibiting the use of the old, unstandardized terms would have been one way of reducing confusion, but at the expense of commercial freedom of speech.

After receiving public comments on the reproposal, the FDA issued a final rule on October 26, 1989 in the form of a "revised reproposal." The FDA argued that the potential confusion between nonstandardized and standardized absorbency terms was best avoided by simply standardizing the existing terms that were already familiar to consumers. Thus, the final rule coincided with the position taken by several manufacturers, the majority of consumer groups, as well as the respondents in our study. The only viewpoint that went completely unsatisfied by the final rule was the one that favored absorbency expressed directly in grams rather than in non-overlapping ranges. (The FDA held firm on its position that variations in tampon production and absorbency testing made the use of ranges necessary.)

## DISCUSSION AND CONCLUSIONS

The educational goal of the tampon absorbency labels is somewhat unique among disclosure requirements inasmuch as it combines performance and safety information. Requirements that provide comparative performance data are generally intended to help consumers balance performance and *price*, without concern for safety. This is true, for instance, with respect to energy efficiency labels on appliances, miles per gallon labels on cars, and treadware labels on tires.

The tampon labels, in contrast, use comparative performance data to aid consumers in balancing performance and *risk*. The clos-

est existing parallel to the tampon absorbency labels are the disclosure requirements in cigarette advertisements. In addition to a set of four rotating warnings, tar and nicotine levels are also required (as measured by the Federal Trade Commission's method). Like tampon absorbency, there is a tradeoff between performance and safety because high levels of tar and nicotine would be desirable if not for their negative health effects.

The tradeoff between performance and risk exists in other purchase situations as well. For example, many consumers prefer that their fruits and vegetables look flawless, but this is difficult to achieve without using pesticides. Many parents would like to dress their children in pure, untreated cotton, even at the risk of relatively high flammability. As a final example, many people want the maneuverability of a three-wheel, all-terrain vehicle even though four-wheel models are safer.

In short, if consumers are becoming more risk-conscious and risk-averse, disclosure policies that simultaneously address performance and risk are likely to become more common. The uncertain course of the tampon absorbency label proposals shows that greater insight is needed before effective communication of consumer information can take place when tradeoffs exist between performance and safety.

First, lawmakers and regulators must rely more heavily on science, and empirical research in particular, in the rule making process. In the case of the tampon labels, research on consumer behavior (Bettman et al. 1986; *Review of the Research Literature...*, 1987) was not used in any systematic way in formulating or revising the original proposal. Nor did the various individuals, consumer groups, or manufacturers present empirically based arguments (except regarding absorbency testing technology).

Second, information disclosure requirements must be crafted



carefully to be as consistent as possible with terms that are already familiar to consumers. In the case of tampon absorbency labels, the FDA devised two new rating systems before deciding to standardize the terms that tampon manufacturers had been using for years. The results of our study indicated that consumers not only preferred standardization of the existing terms but also might have ignored new information that conflicted with the familiar but unstandardized terms.

Third, as product disclosures increase, greater consistency in formats must be achieved *across* product classes. When the goal is simply to express a risk unrelated to product performance, standardization through a small number of visual symbols has been proposed (Hadden, 1986). But the task of standardization is more complex when a disclosure combines performance and risk information. For example, with sunscreens, higher numbers indicate greater performance and greater safety, but with tampon absorbency, higher numbers indicate greater performance and less safety. Whenever possible, numbers should be used in a way that corresponds with a product's performance characteristics (e.g., miles per gallon). Letters should be avoided as a means of expressing performance, especially when a performance/risk tradeoff exists (as in the case of tampons). In this event, the risk should be fully explained in a verbal or visual warning; then performance data should be provided in a fashion that clearly reflects a product's technological characteristics (e.g., grams of absorbency rather than a simple number).

Finally, interdependencies exist not only among information disclosure formats but among information disclosure media as well. It is likely that the effects of disclosure in multiple media are multiplicative, although there is no strong research to support this supposition. In the case of cigarettes, warnings are carried on the package and in advertisements, but tar and nicotine levels are only required in ads. The new federal alcohol warnings take the opposite course; they apply to labels but not to advertisements. In the case of tampon absorbency, the new requirements apply only to labels; the existence of tampon advertising was completely ignored in the rule making proceedings.

Thus, effective communication of information to consumers requires attention to both message format and message distribution. The experience of trying to promulgate a rule on tampon absorbency ratings showed that the FDA was sufficiently flexible to recognize that a mistake had been made in the original proposal. But there is no evidence that the FDA changed the process that generated the ill-advised proposal and reproposal. It is virtuous to admit an error, but we should be able to expect more from our public policy makers. **AD**

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#### FOOTNOTES

1 The tampon manufacturers were divided on the issue of how to disclose absorbency information. Kimberly-Clark Corporation and Sentinel Consumer Products favored a labeling plan using absorbency ranges, while two other companies, International Playtex, Inc. and Personal Products, Inc., preferred labeling each type of tampon with a single number representing absorbency in grams (*Federal Register*, 1988).

2 Respondents were asked to indicate their most and least preferred formats. Despite pretesting of the survey instrument, a majority of the respondents did not follow the instructions correctly. A plurality of respondents (40.4%) rank-ordered all five formats, thereby providing additional information for analysis. Another large group of respondents (27.2%) checked only one of the five formats. In the context of the question it seemed likely that the check was intended to designate the most preferred format. To test this assumption, we analyzed separately the preferences of those respondents who followed the instructions, those who provided complete rankings, and those who checked only one of the alternative formats. Among all three groups of respondents, the most preferred formats were the standardized terms and the 1 to 6 numbering system, in that order. The lettering system was the least preferred by two of the groups.

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# PRICE DISCRIMINATION: LESSONS FOR CONSUMERS

*All consumers are not created equal. Some know, understand, and take advantage of price discrimination, thus expanding the purchasing power of their income by 20 to 40 %. This article explains price discrimination, showing how intelligent consumers can achieve these gains and discussing how consumer educators can explain price discrimination. It also evaluates the pro's and con's of price discrimination from the social viewpoint.*

You find yourself—like the author and his wife—in midtown Manhattan at 5:30 on a Saturday night without a hotel room. What do you do? Our first move was to telephone national motel Chain A, free on their 800 number: “Do you have a double in Manhattan for tonight?” “No” was the answer.

We then called Chain B on their 800 number. “Yes, we have a double,” said the operator, who was presumably monitoring a computer in Omaha or other such place. “How much?” “\$175 at The Napoleon.” [Hotel and other com-

mercial entities are fictional though they represent real entities.] This for a hotel rated two stars (out of five) in the Mobil Guide! Ask no more and you will learn no more, since 800 operators follow instructions provided by their employers. You can decide to take the \$175 room or telephone another chain or hotel.

Our next question: “Do you have a ‘Weekend Special?’” (We had seen ads for “Weekend Specials” in the Travel Section of our Sunday newspaper.) You could almost hear the operator warm to the question even though she may

have been in Omaha. "Oh yes! At the Par Excellence." "How much?" "\$89, and you get wine and cheese when you check in." The answer to this question halved the price, put us in a 4-star hotel, and gave us wine and cheese as well. But we had a car and an overnight garage in Manhattan would cost about \$18 per night. We remembered staying earlier at a motel of Chain B in New Rochelle, 15 miles out. So we asked whether the New Rochelle B had a double. "Yes, \$89," was the answer. This would "demote" us to a 3-star motel, but in New Rochelle you can park free after a 20-minute drive from Manhattan. Our next ploy: "I'm a senior citizen. Do you offer a discount for senior citizens?" "Oh, yes," was the answer; "\$69 for a double." To which my response was: "I'll take it." I then agreed to "guarantee" the room rent, meaning that we would owe the bill whether we used the room or not.

In two minutes of telephoning, we had reduced the cost of our overnight from \$193 (\$175 for the room plus \$18 for parking) to \$75 (\$69 for the room in New Rochelle plus \$6 to cover the cost of driving to and from New Rochelle.) Our total gain: \$118 or about \$60 per minute!!

But this \$118 understates the gain. The \$118 comes from after-tax income. In order to spend \$118, you must earn more because some of your income is lost to income and payroll taxes. Someone paying 40% of their last dollar earned in taxes would need to earn \$207 in order to spend \$118. (They would pay 43%, or \$89, in taxes, leaving \$118 to spend. The 43% marginal tax rate is the sum of 28% federal + 7% state + 8% Social Security). So the true saving from the two minutes of telephoning would be equivalent to \$207 of additional earnings. (This calculation will be explained below.)

The essential point is that the extra questions yielded better quality. Instead of the original 2-star hotel, we had the choice of a 4-star hotel in Manhattan or a 3-star in New Rochelle.

A few hours later we drove to the New Rochelle B and found the motel packed, with people being turned away. "We have your room, sir," the clerk said and we proceeded to register. But the clerk put the room rent down as \$89. "Hold on," I said, "I am a senior citizen." The clerk summoned the manager who declared, "We only offer the senior citizen discount when you make reservations 7 days in advance and when we expect to be less than 80% full." "That's too bad," I parried. "You and I have a contract. Your 800 operator had me guarantee my reservation. That meant that I had to pay whether we used the room or not. Right? And she quoted me the \$69 price that I

accepted!" The manager caved in: "You're right." And so we rested in New Rochelle for \$69 plus \$6 of driving expenses while parking free.

This is a real life example. It involved two particular national motel chains. But it could have readily occurred in a local chain or in independent hotels or motels, or, as illustrated below, for thousands of products or services. You don't have to be an expert. Any understanding consumer can take advantage of or initiate the practice of price discrimination.

The remainder of this article has four parts:  
 Understanding Price Discrimination  
 Lessons For Consumers: Applying Price Discrimination  
 Teaching Price Discrimination  
 The Social Implications of Price Discrimination

### UNDERSTANDING PRICE DISCRIMINATION

*Price discrimination* occurs when a *single seller* charges *different prices* to *different customers* for the *same product*.<sup>2</sup>

The clearest example of price discrimination in the hotel parable was the \$69 price that New Rochelle B offered to senior citizens versus the \$89 price offered to non-seniors. Note the four conditions from the definition:

- A single seller: New Rochelle B Motel.
- Different prices: \$69 vs. \$89.
- Different customers: Senior Citizens vs. Others.
- Same product: A standard double room.

*Product discrimination* is a close "cousin" to *price discrimination*. *Product discrimination* occurs when a *single seller* sells *different products* to *different customers* for the same price.<sup>3</sup> An example of product discrimination, also from a hotel setting: Two customers pay the same price, but the room clerk gives one a standard double room and the other a suite. In practicing price discrimination, sellers can add or subtract features of a product or service. In selling a camera, the dealer may include a battery for one customer and omit it for another. Logically, price and product discrimination are identical: A single seller treats different customers differently, thus "discriminating" in favor of one or the other.

You may observe that the hotel parable was not a "clean" example of price and product discrimination: Is a chain of motels a "single seller"? In real life many actual cases are not clean, but the principles still apply. As consumers, we can look for price differences and also for differences in products, arising from different features or quality.



## PRICE DISCRIMINATION: WHY AND WHEN

Sellers may initiate price discrimination on their own. Ordinarily, what happens is that sellers identify some market segments<sup>4</sup> who will buy at almost any price (a highly inelastic demand) and other segments who will buy only at lower prices (an elastic demand). Alternatively, consumers may initiate price discrimination by asking sellers directly for a favorable price.

Why should sellers practice price discrimination? Because it is profitable if three conditions are met:

- (1) There exist groups of customers, or individual customers, who differ with respect to the highest price they will pay;
- (2) The price charged to the consumers paying the lower price covers the seller's variable costs, i.e., those that vary with the number of units sold, like the wholesale cost of an item);
- (3) The seller can keep his markets separate, making it impossible or unlikely for the customers paying the lower price to resell the product to those paying the higher price.

Consider the example of a movie house. At a single profit-maximizing price, it typically has empty seats. Its owner believes that at a substantially lower price—say, half price—seats could be sold to many children and senior citizens who otherwise would not patronize the establishment. Indeed, the owner believes that the demand of these groups is highly elastic, i.e., that *only* at lower prices will tickets sell to these groups in large numbers. This belief meets condition #1 above.

Once a showing is scheduled, most of the costs are fixed: heat, projectionist's and ticket seller's wages, rental of the film have already been incurred and must be paid, regardless of patronage. Given empty seats, the variable costs are minimal: printing tickets, a little more heat, perhaps another usher. A half-price ticket will cover these variable costs many times over with the excess adding to profit or reducing any deficit. Thus, condition #2 is met.

The markets for children and senior citizens are easily kept separate: These groups will be issued distinctive tickets and other customers will only be admitted when they present appropriate tickets. Thus, the operator of the movie house meets condition #3.

Sellers use many devices to keep markets separate, confining lower prices to: (1) customers with verifiable characteristics, e.g., age or membership in an organization; (2) customers who purchase at or for particular times or occasions, e.g., sale periods, early bird specials, matinees, "red eye" expresses; (3) regular customers, e.g., credit card holders or those

on certain mailing lists; (4) those who ask for special prices; (5) those for whom it is inconvenient or embarrassing to act as resale agents, e.g., professors purchasing texts at academic discounts.

It will occur, correctly, to some that price discrimination may be viewed as a substitute for advertising. Instead of paying for advertising to induce customers to purchase products at the regular price, the seller can pay for additional customers by offering them a discount, i.e., practice price discrimination.

## LESSONS FOR CONSUMERS: APPLYING PRICE DISCRIMINATION

A first step in profiting from price and product discrimination is to recognize how commonly each is practiced.

- Every genuine sale or special;
- Every instance of bargaining;
- Coupons: Cents-off, 2-for-1, double couponing, rebates, cash coupons;
- Off-peak discounts: movies, travel tickets, early bird specials, lunch vs. dinner prices, out-of-season discounts, etc.;
- Discounts to members of organizations (employers, churches, fraternal organizations, professionals organizations, credit unions, etc.) on car rentals, air tickets, insurance, prescription drugs;
- Including ancillary services or features: delivery, accessories/ features, level of quality;
- Loyalty clubs: lists of former customers, Frequent Flyer clubs and similar organizations;
- Upgrades: economy to first class air, standard hotel room to a suite, regular to deluxe of any product or service.

In thinking of any purchase, it makes sense to ask if it is subject to either or both price and/or product discrimination. In contemplating any purchase, it behooves intelligent consumers to think of groups to which they belong that the seller is likely to favor with lower prices, quality constant, or with more quality or more product, price constant.

## CONSUMERS CAN TAKE THE LEAD

"Ask and it shall be given you." This scriptural injunction embodies yet another lesson for consumers: Take the lead in initiating price discrimination. An example involves a woman who likes classical music. Shopping in a posh store in Minneapolis, she asked the salesperson, "Do you have a record set of the complete works of Bach?" "Yes," was the answer, "The price is \$200." In a quiet voice our shopper





placed the "bait." "That's too bad. I'd buy it for \$150." The salesperson reacted at once, "Please wait a minute." She left to consult the department head and returned to announce, "We can sell it to you for \$150."

Note the circumstances: The bait was offered *quietly*, thus, no one else learned of this low price and the store did not need to change its regular price. Presumably the \$150 exceeded the wholesale cost of the product, making the transaction profitable. By offering a lower price and practicing price discrimination, the store made a sale that might otherwise have been lost. The shopper's quiet, firm demeanor convinced the salesperson of the inclination to buy but only at the lower price.

### BARGAINING

Any instance of bargaining is an exercise in price discrimination. Why? Because each outcome has different terms: different prices or differences in what is included.

In bargaining, buyers, through the quality of their acting, seek to convey the lowest possible maximum price they would accept. The seller does likewise. What keeps the prices different is the differential bargaining ability and circumstances of each party; what keeps the markets separate is the private nature of the bargain.

Most Americans know that house and automobile prices are negotiable. What many fail to recognize is that purchases of *all* used items, *most* new durable goods, *most* large-ticket purchases (say over \$500) are subject to bargaining.<sup>5</sup>

### FOLLOW THE MARGINAL RULE

The discussion thus far has dealt exclusively with the possible *gains* from price discrimination. As the discussion of bargaining hints, there are costs involved in pursuing price discrimination. So one must ask: How much effort and time should one devote to seeking gains from price discrimination? The marginal rule provides the answer: Search as long as the *expected gains* from price discrimination exceed the *expected costs* of the search. The gains take the form of lower price and/or better quality. *Costs* consist of anything undergone or given up (foregone opportunities) to attain a given end. Costs may include such items as gasoline, bus fare, telephone calls or earnings sacrificed for time used; or subjective notions such as distaste for (or addictive pleasure from) shopping and the foregone pleasure otherwise conferred by

an afternoon of alternate activity.

Note that the word "expected" is embedded in the rule: Buyers must decide in advance whether to seek gains through price discrimination. This forces them to estimate, or guess, the expected gains and costs, searching to the point—the margin—where the expected costs equal the expected gains. That the *actual* gains or costs may not correspond to the *expected* gains or costs is irrelevant.

### DO YOU WISH TO PLAY THIS GAME?

Some people may balk at spending their time searching for discounts, thinking of the circumstances or of the group that the seller will favor, initiating price discrimination, or bargaining. Some may view these activities as chintzy. Some may have learned that sellers are to be trusted rather than doubted. Some may take pride at having arrived at a level of affluence where they do not need to seek bar-



gains. Still others may prefer to spend their time in ways other than shopping.

Alternatively, some may feel that they are inept at stalking bargains or striking a bargain. These activities may embarrass them or leave them feeling awkward.

The author has no quarrel with any of these reasons for not seeking the gains of price discrimination *as long as the people involved recognize that they are sacrificing some of their purchasing power.*

## TEACHING PRICE DISCRIMINATION

Arousing interest in price discrimination is easy: It pays. I have sometimes started talks on price discrimination (also dealing with informationally imperfect markets) with the (true) story of the extension agent who told me that her understanding of price discrimination had saved her family \$500 in vacation expenses by reducing the family's hotel-airline-rental-car outlays from \$1,500 to \$1,000. Before they came to understand price discrimination, they had never thought of purchasing these services at the corporate rate (arising from her husband's employment).

One approach to achieving a complete understanding of the principles of price discrimination is to ask students to (1) choose a product they are considering buying; and (2) undertake a before-investigation and after-investigation analysis of price/product discrimination as applied to the product. Eligible products might include durable goods—a car, compact disc player, bicycle; or trip; recreational services such as season tickets to a ski resort. The *before-investigation analysis* would require students to answer the following questions prior to contacting any sellers:

1. Will sellers of this product practice price discrimination? Why or why not? *If the seller is expected to practice price discrimination, then:*
2. Will these sellers practice price discrimination (a) on their own initiative, or (b) in response to actions of consumers, or (c) both?
3. What groups are likely to be favored with lower prices? For each: Does the seller see price discrimination as (a) the only way to sell to this group, or (b) as a more efficient substitute for advertising?
4. Explain "price elasticity of demand." Take one of the groups listed in #2, above and describe it in terms of "elasticity of demand."
5. List all types of *fixed costs* and *variable costs* faced by typical sellers of this product. Roughly, how important are fixed and variable costs for this seller? How does this relate to the practice of price discrimination?
6. Consider the three necessary conditions for the practice of price discrimination. Show how these are met by a typical seller of this product.
7. Explain *product* discrimination and show how it might be applied by the seller of this product.

Answers to these questions could form the basis for classroom discussion.

Students would then contact one or more sellers, observe the extent to which they practiced price discrimination, discuss pricing prac-

tices with them, and record answers (if different) to the questions above.

These and other ideas merit classroom discussion. First, it is worth stressing that "income" earned by getting out a lower price (quality constant) or better quality (price constant) is better than "ordinary" income: It is *not* subject to income taxes. One way to dramatize this point is to have students calculate the "extra income equivalent" of each dollar saved through obtaining a lower price via price discrimination. The formula is:

*Extra Income Equivalent = Dollars Saved / (1 - tx) where: tx = Marginal Tax Rate, i.e., the percentage of additional income taken by federal + state and Social Security taxes.*

An example may clarify the use and interpretation of the formula. Suppose a traveler saves \$100 by purchasing a SuperSaver air ticket. Suppose further that this traveler would pay 30% of each additional dollar of income in taxes. Thus, the Extra Income Equivalent =  $\$100 / (1 - .30) = \$142.86$ . Students can verify the formula by calculating that this traveler would pay \$42.86 in taxes ( $\$142.86 \times .30$ ) out of \$142.86 of income, leaving \$100 to spend). Thus, saving \$100 is equivalent to earning \$142.86.

Isn't it enough to know that sellers offer discounts and will bargain? Yes, but when buyers, achieve a complete understanding of price and product discrimination, they are more likely to "get inside the mind" of the seller and guess which groups and circumstances will be accorded more favorable terms. This knowledge leads to a longer list of favorably treated groups and circumstances and improves the chances that the consumer will gain from price discrimination.

The word discrimination has pejorative associations. One thinks naturally and negatively of "discrimination" on the basis of sex, race, age, etc., which reflects prejudice and ill will. Not so in the case of price and product discrimination, which are purely economic. The seller treats groups favorably or unfavorably according to the judgment of whether favorable treatment is necessary (1) to achieve a sale and (2) increase profits. Distinguishing between these different uses of the word discrimination should avoid misunderstanding.

## THE SOCIAL IMPLICATIONS OF PRICE DISCRIMINATION

There was a time—perhaps before World War II—when consumer markets in the U.S. could have been accurately characterized as one-price markets. The consumer did not expect a *range* or prices for most products. Instead the

consumer asked the merchant what the price was and accepted it.

Economists and marketers gloried in these one-price markets for they economized on time and effort. Intelligent consumers didn't need to spend time and energy searching out discounts or bargaining. Furthermore, these markets were fair, charging the same price to everyone—the knowledgeable and ignorant, assertive and passive, rich and poor. (It should be recognized that a one-price market is not always fair. The one price could be the high price charged by a monopolist. Alternatively, it could be the single, high price that was formerly imposed under resale price maintenance laws.)

Now, thanks largely to price discrimination and consumer ignorance, local consumer markets exhibit substantial price variation, quality constant. To be specific, for about 40 % of products, the highest price, quality constant, is more than double the lowest price (Maynes & Assum 1982).<sup>6</sup> This estimate understates the true extent of price dispersion, since the price data on which it was based consisted of “the single lowest price that the seller would honor for all customers.” Thus, it includes sale prices available to all, but excludes discounts and bargained prices accorded only to special groups or individuals.

The existence of extensive price dispersion condemns all consumers to an economic game in which they must search and bargain in order to discover the lowest price, quality constant; hence they surrender some of the purchasing power of their income. Alternatively, they may discover the lowest price but not the highest quality available at that price, another means of squandering personal purchasing power. Finally, for many searching/shopping is a cost, not a pleasure. In evaluating the functioning of such markets, the cost of the search must be added to the dollar price paid. The existence of substantial price dispersion ensures that there will be winners and losers in varying degrees. The winners are likely to be the knowledgeable, assertive searchers, while the losers are likely to be ignorant, passive non-searchers.

#### SUMMARY

This article demonstrates that price discrimination and its cousin, product discrimination, constitute a powerful means of expanding the purchasing power of income. Now it is up to you to decide whether you wish to follow this path! The price of *not* taking this route is likely to be the loss of a considerable portion of your purchasing power.

Now, as a citizen, you should be in a better situation to make your own judgement on the desirability of price discrimination arrangements versus a one-price consumer market. A1

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#### FOOTNOTES

1 Most of my examples are personal for the reason that it is difficult to obtain all the essential details from others.

2 For a formal but easily understood analysis of price discrimination see Byrns and Stone (1986). For a sophisticated, state-of-the-art survey of price discrimination in most of its facets see Phlips (1983).

3 “Price discrimination” is a broadly used and widely accepted concept. “Product discrimination” however, has been introduced by the author.

4 A market segment consists of groups of consumers with relatively homogeneous preferences and similar characteristics (age, social class, etc.)

5 If your appetite is whetted and you wish to know more about bargaining, see Maynes (1976).

6 In a masterful review article, Geistfeld (1988, p. 169) concludes, equivalently, that most local consumer markets may be characterized by a “weak price-quality relationship.”

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*The views expressed are those of the author and not those of the Federal Trade Commission. Nor does the article use confidential data from The Commission.*

## BOOK REVIEW

# SMART SPENDING

Schmitt, Lois (1989)

*A Consumer's Guide: Smart Spending.*  
Macmillan \$11.95

**S**mart Spending, by Macmillan Children's Book Group, is for young readers ages 10-14 years. The author, Lois Schmitt, an educator, and for twelve years Education Specialist for Nassau County N.Y.s Department of Consumer Affairs, has compiled a very realistic and sound resource for older children and young teenagers. *Smart Spending* also may be used as a reference for educators who work with young people. This book is a collection of consumer traps described in case study style accompanied by possible resolutions and/or preventative actions that could be undertaken by young consumers. It is organized by chapter around key consumer issues: advertising, money management, consumer fraud, mail order, labels and warranties, product safety, foods and nutrition, and effective complaining.

There should be no question in the minds of ACI readers concerning the need for consumer education aimed at young people. One survey reported that 7 to 12 year olds spend \$5.3 billion a year and another reported that 80 to 100 percent of the 7-12 year olds made at least one quasi-independent shopping trip each week (McNeal). The challenge for educators is how to teach children to deal with a complex marketplace that lacks consumer protection and adequate information geared towards the young consumer.

Exactly how to frame educational approaches and information for youthful consumers requires an understanding of the cognitive, social, emotional and other developmental changes and stages of youth. What is important to them may not be what adults perceive as important to youth. Yet adults wish

to influence and assist children so that they gain skills and knowledge that will serve them well as independent adults. Schmitt has done a good job of understanding the child's perspective and their experiences with consumer problems while at the same time making a contribution to advancing that child's consumer interest and expertise.

Rather than a comprehensive reader, Schmitt's 112 page work is a selective reference tool that can assist young consumers. It is also a source of very interesting consumer cases for adults working with children. Since the style of the text is prescriptive, only the most consumer conscious of the 10 to 14 year olds will voluntarily read this book from cover to cover. Parenthetically, adult consumers are very much the same as young consumers. Adults often seek information on a consumer problem only when the issue presents itself or, worse yet, they get the information after the fact!

The book's readability could be improved by more direct involvement of the readers in possible solutions to problems. Asking readers to consider solutions by raising questions and outlining positive and negative consequences of decisions are several strategies the author could have used. The author does attempt to involve the reader in certain chapters. For example, the chapter on foods begins with a quiz on food content and nutrition.

Clearly the author has an urban point-of-view that is based on her experiences in a large suburban county consumer affairs office near New York City. This presents no problem for the more general consumer information and for most of the marketplace examples, however, children in more rural or small town settings do face a more limited choice set. These children may rely more on their parents for transportation

and probably have more limited exposure to regular shopping trips to large retail establishments. This urban bias becomes a weakness on several occasions when readers are referred to local consumer affairs offices as a source of help. Unfortunately, in many communities there are no local consumer affairs agencies. This book could be improved by identifying a range of recourse channel alternatives in a more systematic manner.

Schmitt presents a variety of case studies, however, the way these case studies are presented may confound some to the reader's problems. The consumer problems in each of the case studies are of different magnitude.

Children often get bogged down in implementing decisions and in determining how effectively to apply their consumer search energies. Like their adult counterparts, they may "sweat the small stuff" agonizing over a rather inconsequential decision and then "blow it" on more long term and important choices. Case study examples that illustrate strategies for deciding when and how long to search and for judging how significant a problem and/or choice is would be valuable additions to the book.

Important consumer economics and family resource management topics such as trade-offs, scarcity, and understanding wants and needs are skillfully and simply woven into the text. The last chapter on complaints is particularly well-done. Samples of weak complaint letters are presented and critiqued. They are then rewritten using an effective complaint format.

Schmitt has done a good job of cutting through the clutter. This is a potential pitfall for all consumer information guides and even more so for those aimed at young readers. She presents only the most useful and pertinent information for her readers. For example, when she discusses consumer scams that affect children, she does not fall into the typical consumer educator's trap—presenting information overload. There is no need to cite all related laws and regulations, to explain jurisdictions and generally to overburden young people with information that will both confuse and

turn them off. She wisely approaches the subject with an implicit goal of supporting young people on consumer issues, increasing their consumer awareness and knowledge, and introducing them to potential resolutions of their consumer problems.

Although *Penny Power*, the Consum-

er's Union magazine for children holds greater interest and appeal for its intended readers, *Smart Spending* is still a relevant publication and will be of interest to most young people if taken in small doses. This book also should be a useful reference to educators who work with children. ACI

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EDUCATION

# A STRATEGY FOR SUCCESS IN ADVANCING CONSUMER EDUCATION

From "A Nation At Risk" to the Education Summit, America has been absorbed with concern for improvement in education. It has become evident that rapid advancements in technology demand that education provide not only basic literacy skills, but also skills that help us adapt to a constantly changing social and economic climate. Very often, these are the skills we focus on in consumer education. And so, as we approach the 21st century, consumer educators have a unique opportunity for advancing consumer education in America.

Members of the American Council on Consumer Interests have an impressive history of advancing the teaching of these skills through their roles as researchers, teachers, and consumer leaders in business and government. I congratulate you on that record.

Today, however, we find ourselves in an era of competing education agendas and strict budget constraints. Consequently, consumer leaders seeking to enhance the availability of consumer education must find ways to place it within the context of overall educational improvement.

Perhaps the first step in our efforts to find the proper fit for consumer education is to review its goals. Oliver Wendell Holmes once said, "We need education in the obvious more than investigation of the obscure." The obvious here is that informed and educated consumers and workers are vital to America's long-term economic health. Therefore, we must work to strengthen our economy, and that means producing consumers who can:

- Develop and stick to budgets for spending in accordance with well-defined personal goals,
- Protect themselves from fraud and abuse,
- Save and invest wisely, and
- Take advantage of emerging domestic and imported technologies to improve their quality of life.

Strengthening the economy also means producing efficient and resourceful wage-earners. At the U.S. Office of Consumer Affairs, we firmly believe that the basic reading, writing, and computation skills needed to be productive wage-earners are the same skills needed to complete even the simplest market-place transactions.

Beyond basics, the higher order skills critical to advancement in the workplace—such as reasoning and critical thinking—are essential to managing personal and family finances, assessing marketplace issues and options, and understanding our place in the international economy. So it is plain that our lives are not strictly compartmentalized, but rather that wage-earner and consumer roles overlap. As consumer educators, we must keep this in mind.

At a time when America's long-standing leadership in the global economy is being threatened by other nations, there is mounting concern among business leaders, educators and governments that American students are leaving school ill-prepared for this competitive marketplace. Their lack of preparation translates into a competitive disadvantage for businesses who depend on these students for their workforce. Quite simply, a company that must spend millions of dollars teaching basic literacy skills to a large percentage of its employees is behind at the outset in the race with European and Asian companies.

At the same time, individuals who lack critical computer skills also may be unable to use consumer technologies such as electronic banking and point of sale terminals. Many cannot read and comprehend stories written above an eighth-grade level, and thus, cannot relate daily news to their jobs, personal goals or spending decisions. As a consequence, society may ultimately pay the cost of their bankruptcy, inability to find work or even welfare dependency.

These costs to our economy and society would be better directed toward

preventive measures—toward educational programs that teach basic and higher-order skills in a context that can be related to roles as workers and consumers. And that, of course, is the goal of consumer education.

It may be helpful also to look at current educational reform efforts themselves. As a nation, we have been talking about education reform at least since 1983 when "A Nation at Risk" was released. Yet we are reminded daily by the media, government officials, educators and employers that change in education has not kept pace with our economic needs or technological developments.

Clearly, successful reform in America's system of public education requires us to look at education differently than we have in the past. Historically, the role of education was to train only a small segment of society. But the value of education for all was quickly realized and, today, there is a pervasive need for an educated workforce that can help us compete in the global economy and, at the same time, maintain a solid economic base at home.

Therefore, it appears that reviewing curriculum is essential. President Bush and state governors have now agreed on national educational goals, with specifics to be worked out at the state level. One key concern was that these goals focus on proficiencies—termed by some as "domains of learning"—that every graduating student should have. This is a much broader, more functionally oriented view than one focusing solely on specific lessons and courses.

Where do consumer educators fit in this environment? Overall, as I said at the outset, I believe it has handed us a new and exciting challenge. We must join the dialogue at the state and local levels as parents, teachers, administrators, legislators, and government decision makers meet to flesh out the broad goals established at the summit. And we must ensure that the consumer skills are discussed and incorporated.

In so doing, we may find it helpful to re-examine previously successful approaches to advancing consumer education. For example, "marketing" con-

sumer education as a separate course requirement where it does not already exist may no longer be the best strategy. When I was at the U.S. Department of Education, I found that every discipline under the rubric of vocational or adult education wanted its own special curriculum. Specialists in agriculture wanted to be sure students had an appreciation for the history and significance of agriculture to America's economy, for example. There is no question that these and hundreds of other specific disciplines are important to a student's overall understanding of the world, but there simply is no room for separate courses on each.

And so, I believe the best strategy for consumer educators is a proactive approach in which we focus on incorporating consumer education concepts into core curricula, as those curricula are reviewed at state and local levels in the context of overall education reform. Consumer educators can provide sample consumer-oriented questions and problems that can be incorporated into history, math, civics, and reading comprehension courses. We can produce examples of how workplace skills already being taught apply to consumer decision as well. The key is to help students see the day-to-day relevance of what they are learning. This is particularly critical for students at risk of dropping out, because they often see little connection between the courses they must take in school and the problems they face outside the classroom.

In schools where consumer education courses now have a secure home, the infusion of basic and higher-order thinking skills into the teaching of specific courses often needs strengthening. We must help students apply concepts learned in one course to other courses. Just as there is overlap in our workplace and personal lives, there is also overlap among the lessons we learn in school. The more students are able to recognize this overlap and learn skills applying across the board, the better they will be at adapting these skills throughout their lives.

Clearly, the education environment has changed. The mix of decision mak-

ers now involved in educational restructuring is large: It encompasses administrators, teachers, parents, government officials, and others.

While the competition for input is great, this larger mix adds another positive twist to the challenge consumer educators face. Consumer education concepts permeate nearly every decision we make in our lives. It's not difficult to cite examples of consumer education concepts used in everything from reading comprehension (e.g., warranties, contracts, and product labels) to mathematics (interest rates on credit cards and comparative financing on auto loans). Who, then, is better than consumer educators at helping decision makers find ways to teach critical skills in the context of real-life decisions...and education reformers to meet the national goals and personal challenges of the 1990s—and the next century. ACI

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EDUCATION

# CAREERS IN CONSUMER AFFAIRS

Career opportunities exist for professionally trained college graduates interested in the field of consumer affairs. This article describes consumer affairs as an academic area of study, typical curriculum requirements, expected competencies of graduates, job and career development responsibilities, and career options.

Consumer affairs is an area of study that prepares students to reasonably advocate the consumer interest and help consumers improve their well-being. The primary responsibilities of consumer affairs professionals are to champion the consumer's viewpoint to their employing organization and to convey information about the organization's products and services to the consumer.

Although consumer affairs deals with concerns of business, it is people-oriented, with emphasis on the consumer perspective. It focuses on the human viewpoint in problem solving. Consumer affairs majors are expected to have a keen interest in people and the quality of life.

Furthermore, consumer affairs professionals are concerned with more than simply calculating the benefits and costs of alternatives. They also consider fairness, decency, kindness, compassion, and honor. Each student majoring in consumer affairs identifies his or her life mission and educational needs and career aspirations which, ultimately, are rooted in their values, goals, interests, and priorities. Majors are expected to develop clear ideas about the way the world works and what needs to be done to make it better.

## CURRICULUM REQUIREMENTS

Consumer affairs majors study the role

of consumers in the economy and analyze the information needed for individuals and families to become more knowledgeable and assertive consumers. They seek answers to questions such as "How can I get my money's worth?", "How can I contribute to improving communication and respect between consumers and producers?" and "How can I personally help improve the world in which I live?" The subject is taught from the consumer point of view, not from the perspective of marketing interests in consumption. For example, students learn which styles of nutritional information food labels are most helpful to consumers rather than which format sells the most products.

The concepts and skills of the consumer affairs profession come from a range of academic disciplines and applied areas including political science, law, finance, insurance, management, marketing, accounting, economics, family economics, psychology, sociology, credit, statistics, research methods, computer technology, health, foods, clothing, household equipment, media, and communications. This broad knowledge is used to help consumers get the best product or service for their money, to promote the availability of choices for consumers, to assess consumer complaints and suggest fair solutions, and to help consumers better manage their money. The curriculum provides students with a liberal education rather than a technical one.

Courses in consumer affairs generally have a family perspective through which students can examine problems and issues to improve the quality of life of individuals and families. Issues and problems are studied from the perspectives of consumers, business, and governments. Students learn a variety

of terms, concepts, processes, and applications relevant to employment in careers as consumer affairs professionals.

Course offerings in the consumer affairs major often include titles such as Consumer Problems, Consumer Protection, Family Finance, Budget and Debt Counseling, Debtor/Creditor Relationships, Resource Management, Family Economics, and Professional Seminar in Consumer Affairs.

Consumer affairs majors are provided a variety of in- and out-of-class learning experiences. Opportunities for personal development exist with student professional associations on campus as well as state and national organizations, such as the Consumer Education and Information Association of Virginia (CEIAV), Consumer Educators of Michigan (CEM), Illinois Consumer Education Association (ICEA), American Council on Consumer Interests (ACCI), Society of Consumer Affairs Professionals in Business (SOCAP), and National Association of Consumer Agency Administrators (NACAA).

Students are expected to develop independence and initiative. Because the curriculum is designed with the ultimate goal of developing skills and confidence, students progressing through the consumer affairs curriculum have increasing responsibility to individualize aspects of their educational program. Majors in consumer affairs often are required to complete an individual study experience, such as research or a field study or internship.

## COMPETENCIES OF GRADUATES

Students develop competencies that, upon graduation, enable them to: (1) make rational buying decisions, (2) efficiently resolve consumer problems, (3) advise people to manage resources more effectively, (4) assist individuals and families experiencing debt and budgeting problems, (5) be familiar with major problems and issues confronting consumer affairs professionals, (6) understand how to operate a consumer complaint handling system, and

(7) advocate the consumer interest to superiors in an organization.

Graduates of consumer affairs programs generally seek employment as a Consumer Affairs Professional (CAP). Employers look for the ability to communicate effectively in writing and orally. They want employees who possess strong analytical decision-making skills, being able to take into consideration a number of complicated, subjective factors. CAPs should have a thorough knowledge of consumer-related problems and issues, utilize economics in analyzing alternatives, know survey research techniques, appreciate the free enterprise system, understand consumer behavior and public relations, appreciate the legislative and regulatory process, and understand ways of affecting changes in legislation and public policy. They should also be able to plan, research and develop consumer education and information materials as well as implement programs.

Graduates should be motivated, resourceful, and self-directed. Employers prefer those who are willing to work and demonstrate curiosity, dependability, openmindedness, competence, confidence, leadership, and a positive professional attitude. CAPs need to see both the short and long-term view of a situation. In addition, graduates should possess the desire to increase knowledge and skills and stay up-to-date in the field.

#### JOB RESPONSIBILITIES

The focus of consumer affairs work is on problems and issues affecting consumers. The desired result is improvement of consumer welfare, by positively affecting public policy, corporate behavior, and societal changes and individual or family behavior.

Consumer affairs professionals often interact with consumers, social service and government agencies, educators and people with limited incomes. Many large organizations have consumer affairs professionals who inform and educate the firm's employees.

Major activities of consumer affairs professionals include responding to con-

sumer inquiries and complaints; championing the interests of consumers within organizational decision-making structures; developing promotional and informational programs; preparing publications on the use of products; monitoring and evaluating consumer trends and legislative issues; writing news releases, informational brochures, and newsletters; speaking to opinion leaders and consumer, educational, professional, and government groups; helping others understand their employer's perspective (that of business, government or a nonprofit agency); and being an agent of change.

#### CAREER DEVELOPMENT OPPORTUNITIES

People who graduate from consumer affairs programs are qualified for employment in positions as Consumer Affairs Professionals (CAPs). These jobs exist to a limited degree in most large business and government agencies.

**ENTRY-LEVEL JOB TITLES.** Typical entry-level job titles include consumer information specialist, consumer investigator, complaint mediator, customer service representative, product information specialist, consumer researcher, consumer writer, product testing specialist, consumer service specialist, credit counselor, budget counselor, publicist, community relations representative, consumer communication specialist, consumer education coordinator, public relations specialist, and public information officer.

**LIFELONG CAREER DEVELOPMENT OPPORTUNITIES.** Lifelong career opportunities as a consumer affairs professional exist. Those in advanced positions, which require several years of successful consumer affairs experience, include directing and training consumer affairs staffs, representing the organization at meetings, monitoring legislative and regulatory issues, addressing legislative hearings, coordinating research of consumer complaints, and reasonably advocating consumer interests to senior management within the organization.

#### CAREER OPTIONS

Consumer affairs graduates are employed in business firms, government agencies, and nonprofit organizations. Consumer affairs positions are more likely to be found in large organizations than in smaller firms. Potential employers are located throughout the country, although the greatest number of employment opportunities are in urban areas.

**JOBS IN BUSINESS.** Many positions are available in businesses concerned with manufacturing, processing, and marketing. Graduates often find employment in industries such as banking, investments, food, housing, retailing, entertainment, insurance, oil, agriculture, radio, television, journalism, household appliances, labor, medical care, and credit. Graduates may work for business trade associations, such as the American Gas Association, National Turkey Federation, American Association of Retired Persons, Better Business Bureau, or the American Bankers Association. Some graduates work for regulated utilities, such as the telephone, water, gas and electric industries.

**STATE AND LOCAL GOVERNMENT JOBS.** Graduates may work for state and local government agencies, such as a county office of consumer affairs, state office of consumer affairs, housing authority, department on aging, weights and measures office, tourism, licensing, registration, bureau of automotive regulation, social services, energy agency, cooperative extension service, attorney general's office, insurance commission, financial institutions bureau, utilities commission, or for a legislator.

**FEDERAL GOVERNMENT JOBS.** Employment opportunities are also available with the federal government as staff for members of Congress as well as various agencies, such as the Office of Management and Budget, Consumer Product Safety Commission, Food and Drug Administration, U.S. Department of Agriculture, Environ-



mental Protection Agency and U.S. Office of Consumer Affairs.

**LOCAL JOBS IN FEDERAL OFFICES.** Employment positions for consumer affairs majors are available also in federal offices located in local communities, such as the Farmers Home Administration, Housing and Urban Development Office, Army Community Services, Navy Family Services, Social Security, and Energy Office.

**JOBS IN NON-PROFIT AGENCIES.** Graduates may also work for nonprofit agencies, such as a Consumer Credit Counseling Service, Center for Auto Safety, Public Voice for Food and Policy, Common Cause, Community Services Agency, Solar Energy Center, Legal Services, or a public interest research group. ACI

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GUEST OPINION

# WHAT PRICE BARGAIN? A LOOK AT THE HIDDEN COSTS OF AIR TRAVEL

**W**hen it is time to visit a relative or fly to a conference most consumers call their travel agents and request the "cheapest fare to get them there" (Lawson, 1988, p. 52). By far, price seems to be the primary reason for choosing a particular airline or flight, with quality of services a distant second. What most consumers don't calculate into their airfare are the hidden costs of a low-priced ticket. Consumers believe that if the government certifies a carrier as safe, it is. They have traditionally placed their trust in Congress, the FAA, and the DOT to oversee the air transport system, and in airline managements to comply with regulations and monitor themselves.

Just as safety is not usually figured into the selection of an airline, neither does the consumer typically consider the quality or well-being of the crew. Consumer misperceptions of pilots are that they are unaffected by events out-

side the cockpit. The pilots have routine tasks and responsibilities to perform, and they are always alert to do what they have been *trained to do* in that rare case of an emergency—avert a disaster.

## AIR LINE DEREGULATION

Prior to deregulation, airlines made their profits by gaining the most advantageous routes. After deregulation, competitors could begin service on the same route without government approval. "Fare wars" developed among carriers to the point that some sacrificed all profits on selected routes in order to remain in the market.

The rapid expansion stage of new carriers in the post-deregulation era was quickly followed by an equally rapid consolidation period of bankruptcies, mergers, sales, and takeovers. With each of these consolidations, hostility between employees of the merged

airlines intruded into the cockpit, as employees faced threats to seniority and job security. Many of the newly merged/acquired carriers experienced increasing troubles in the form of cut-backs, negative press, or, for some, financial disaster.

Faced with financial losses and potential bankruptcy, airlines had to recover costs. Decreased attention appeared to be paid to recurrent maintenance. In other areas labor costs were reduced. This resulted in feuds between labor and management.

**WHY THE WAR BETWEEN MANagements AND AIR LINE EMPLOYEES.** Many financially troubled airlines turned to labor as a means of cost reductions. Employee furloughs or layoffs increased worker responsibilities and worker stress while decreasing the level of service. Salaries were frozen, benefits were taken away, or employees were forced to "give back" salary or work rules in the form of continuous contract concessions. Workers who retired or quit were not replaced, or were replaced by less experienced workers at lower salaries. Replacement pilots were hired with only minimum FAA requirements. Decreased pay for the newer employees caused friction between pilots in the same cockpit.

Hostile labor/management interactions escalated as management increasingly saw highly skilled, experienced workers as a liability rather

than an asset. No longer was a dollar value placed on employee experience, loyalty, or commitment, or on the employee's ability to function safely and efficiently.

*HOW PILOTS ARE AFFECTED BY CORPORATE INSTABILITY.* Studies of plant closing have shown that the period of prolonged anticipation of job loss, wage cuts, and bankruptcy can be as detrimental to the worker as the event itself (Kasl, Gore, & Cobb, 1975). And for airline employees an "emotional roller coaster" of hope, fear, anger, bargaining and depression seemed to be the legacy of the age of deregulation (Little and Gaffney, 1987).

Prior to deregulation, when a pilot was hired by a major carrier, it was usually a life-time commitment for both parties. It made good economic sense for the carrier to save on training costs by hiring and retaining the most highly skilled, responsible, motivated pilots and providing working conditions that would ensure their loyalty and commitment. For the pilot, whose specialized skills could not be transferred easily, it also made economic sense to stay with one airline. Today, when faced with the prospect of decreased compensation, more demands, often hostile treatment by managements, and threats of job loss or prolonged job instability, pilots either endure their situation with their particular carrier or seek employment in a more desirable climate and thereby give up all benefits earned company seniority.

Researchers have noted that as a company's instability increases, those with other options leave. In the airline industry they are the ones who are young enough to begin again at another carrier or in another profession, or who are old enough to apply for a early retirement (Hurst & Shepard, 1986; Little & Gaffney, 1987). It is with the perception that they have no other options that employees will often give the most concessions. They do so unwillingly, and their morale, loyalty, and, most likely, job performance are negatively affected (Spencer & Cassell, 1987).

Two recent studies on Commercial Airline Pilot Stress confirm that pilots, like other human beings, experience job related stress and develop stress symptoms (Gaffney, Little & Scheirer, 1987; Little, Gaffney, Bender, Proulx & Scheirer, 1988). In 1986, a random sample of approximately 450 pilots from one major unstable commercial carrier and two smaller, yet prominent stable commercial carriers was analyzed for stress symptoms. Carrier classification for the unstable airline was based on a history of threat of bankruptcy, hostile labor-management interactions, pay cuts, wage freezes, and a strenuously protested acquisition. Factors considered for the stable airline were the history of profits, no mergers or takeovers, and positive labor-management interactions. Using eleven stress measures, it was possible to statistically classify high-stressed pilots 85% of the time by carrier affiliation alone. *The high-stressed pilots worked for the unstable carrier.* In 1987 the study was replicated and enlarged. Using a sample of approximately 1,500 pilot respondents from the same carriers it was possible to statistically classify pilots by stress levels and carrier affiliation 90-93% of the time. *Again, high-stressed pilots were employed by the unstable carrier.*

*WHY WE SHOULD CARE ABOUT AIR LINE PILOT STRESS.* According to statistics released by both Boeing Co. and the Air Line Pilots Association, 60-70% of fatal commercial airline crashes are attributable to pilot error (Lautman & Gallimore, 1987; Thomas, 1987). According to the Federal Aviation Administration's Pat Beardsley (personal communication, May 26, 1988), there were 31 accidents in 1987 on U.S. airlines flying scheduled flights. This was the most in 13 years. Four of these accidents alone were responsible for 231 deaths. The Northwest/Republic crash in Detroit had the largest number (156) of fatalities. After the accident, and on a national newscast, a National Transportation Board executive compared the failure of the pilots to set the flaps to that of driving away in a car without shutting

the door. Such "accidents"—leaving a coffee cup on top of the car, locking the car with the keys inside—happen to all of us when distracted, preoccupied, and unable to concentrate on the routine tasks at hand. Republic and Northwest pilots were in the process of negotiation seniority positions within the acquiring airline, Northwest, and tension between pilot groups as well as between pilots and management was high.

In addition to other stressors, when a buy-out occurs, pilots must frequently learn to pilot totally unfamiliar aircraft. For example, when a commuter merges with fast-growing carrier such as what happened with Air Florida or Continental, the experience and training of the two pilot groups is not necessarily adequate to meet rapidly changing demands. The co-pilot at the controls of the Continental Airlines jet that crashed after takeoff at Denver Stapleton Airport on November 13, 1987 had most of his experience at a commuter airline which had gone bankrupt, and had only 36 hours of flying time on a DC-9, the type of aircraft involved in the crash.

#### CONCLUSIONS & IMPLICATIONS

You as a consumers need to do more than shop for the *lowest* fares. Check your airline. Is it financially stable? Has it recently undergone a tumultuous buy-out or merger? Are employee-management relations troubled? What is its safety record? Are there any reasons to believe that safety corners are being cut to reduce costs? Is there reason to believe that employees are over stressed?

Passengers contract with air carriers for transportation services. Airline pilots, machinists, and flight attendants contract to provide services to the carrier in exchange for compensation and tolerable working conditions. They are employees, but first of all they are human beings who respond to prolonged and intense stress in the work place. They become physically ill, depressed, lethargic, and develop relationship problems with family members. They also become preoccu-

pied with issues of job and financial security as they wonder about the next contract negotiations (Gaffney, Little, & Scheirer, 1987). It is well known that the effects of stress are cumulative. Research indicates that work stress is associated with decreases in employee productivity and commitment, increases in absenteeism, turnover, use of sick leave, burn-out, grievances, and accidents.

As observed by Robert Crandall, Chairman of American Airlines, "We must all admit that, in a price sense, deregulation has been pro-consumer. On the other hand, the *quality of service* has clearly suffered and deregulation has proved to be far more anti-labor—anti-people, to be more precise—than anyone had dreamed. Passengers won low fares, but a substantial part of their gain came at the expense of the people who provide airline services" (Reed, 1987).

Pilot and author John Nance summed up the essence of this article in his statement that the "...philosophy...that airlines can be flown at the cheapest possible rate, kind of like the K-Mart of the air, that you can do everything on the cheap, pay people a very small

amount of money compared to what they might have been used to in the industry, and that you're still going to get a very stable and extremely safe airline...just isn't the case" (Reynolds, 1987). Consumers, be *aware*. ACI

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GUEST OPINION

# TAKE THE BARGAIN AND FLY

Little and Gaffney offer a lucid and intelligent statement of a viewpoint with many adherents. I believe, however, that their argument rests on some premises that are no longer true and on others that probably never were.

The authors urge us to think twice before buying bargain-fare air tickets. Many bargain fares are gone now, and those that still exist probably serve less than to exert financial pressure on airlines than to provide them with clear profits.

Under the present fare structure, business travelers have few opportunities for deep discounts, while bargain fares are used by "yield-management" computer programs to get discretionary travelers to fill seats that would otherwise have gone empty. Under these circumstances, buying a low-fare ticket no more exploits the pilot than buying day-old bread at half price exploits the baker.

Little and Gaffney suggest that, when consumers benefit from low fares

at the expense of airline workers, deep stresses can develop among employees that could threaten air safety. Travelers are encouraged to view that price difference between a bargain-fare ticket and regular one as a de facto life-insurance premium that is sometimes a prudent investment. A few anecdotes notwithstanding, however, it is hard to find serious evidence that lower fares entail lesser safety.

In the 1980's—the period of interest for the present discussion—U.S. domestic jet travel was far safer than in any previous decade. The death-risk per domestic jet flight was roughly one in seven million; at that rate, a traveler who took one jet flight *every single day* could expect to go 20,000 years before succumbing to a fatal crash. The mortality risk level in the 1980's was a fac-

tor of three lower than that in the 1970's and a factor of six lower than that in the 1960's.

Moreover, the few domestic disasters that took place in recent years were not concentrated among financially-strapped airlines with frustrated and/or inexperienced workers. Perhaps the most conspicuous such carriers are those operated by the Texas Air Corporation. Yet, since its takeover by Texas Air, Eastern Airlines has completed nearly two million flights without a single fatality. Little and Gaffney mentioned a Continental Airlines crash in Denver; they did not mention that, as a Texas Air subsidiary, Continental has performed three million other flights in perfect safety. The Little-Gaffney hypothesis is not helped by the fact that passengers boarding Texas Air jets in the 1980's were only half as likely to be killed en route as those boarding jets of the other domestic airlines.

The evidence from the other end of the spectrum provides no clearer sup-

port for the Little-Gaffney position. In contrast to Texas Air, USAir is a stable and profitable company with strong labor-management relations. Yet it was a USAir employee who, in the only act of domestic air sabotage in the last decade, shot first his supervisor and then the pilot and copilot of a jetliner which thereupon crashed. No U.S. airline has been less identified than Delta with labor strife and financial volatility. But Delta's recent safety record has been relatively weak; it has had two fatal crashes in Dallas that have been attributed to pilot error and a series of egregious cockpit problems in 1987 that created an atmosphere of scandal.

To cite these examples is not to deny that great stresses have existed at certain airlines in recent years. Rather, it is to challenge the reflexive assertion that greater stress implies lesser safety. Stress could, after all, serve as an antidote to complacency, which some experts have identified as the largest threat to air safety. At a minimum, we

should pause before suggesting that greater hazard and lower airfares go hand in hand, or that travelers who come upon bargain fares today should feel guilty or fearful rather than lucky.

We might end by noting that Little and Gaffney posited that the choice for the passenger is between bargain fares and undiscounted ones. But for many less affluent travelers, the choice might be between bargain fares and no air travel at all. I imagine that, as real bargain fares have withered in the last few years, many poor people who discovered in the early 80's the splendor of plane travel are once again finding the skies unattainable. No experts have gone out to measure the frustration and disappointment that these people feel, but they deserve a place in any accounting of the victims of the curious trajectory of America's deregulated airlines. AG

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CONSUMER PROTECTION

# CONSUMERS AS TARGETS OF PERSONAL INFLUENCE TACTICS

**T**he scientific study of the personal influence process has been with us for almost 50 years, beginning with the government public information and persuasion programs of World War II. Since that time, numerous social scientists have investigated the ways in which one individual can influence another's attitudes, beliefs, perceptions, or behaviors. For the past 15 years, I have concentrated on identifying the major factors that bring about behavior change, specifically, the most powerful psychological pressures affecting compliance with requests. In so

doing, I have tried to ask a particular question: "What are the psychological principles that, when properly engaged, cause a person to be more likely to comply with a request?". Clearly, the answer to this question should be of considerable interest to consumers who daily face an array of compliance professionals seeking to use these principles to extract a "yes." My research produced one surprise in this regard: The most effective procedures for gaining compliance with a request frequently do not involve developing the request itself but, rather, the psycholog-

ical context in which the request is placed. In fact, the six basic principles of compliance described below work in precisely this way—by creating a psychological context in which people are inclined to say yes.

THE PRINCIPLES

**RECIPROCITY.** According to the sociologist Alvin Gouldner, who made an extensive review of the subject, every human society trains its members to live by the rule of reciprocity, which obligates people to give back the form

of behavior they have received. So, gifts are to be met with return gifts, favors with return favors, benefits with return benefits, etc. It is this sense of obligation to give back to those who have given first that forms a context for compliance. People tend to say yes when they feel obligated to a requester who has previously provided them with some service or resource. To do otherwise would be to risk being labeled a moocher, taker or ingrate—labels everyone wishes to avoid. Sometimes the effects of the rule of reciprocity are so great that we find people performing acts that under no other circumstances would have occurred, except for an existing obligation to repay. For instance, the Red Cross of Ethiopia—a country that can fairly lay claim to the greatest privation, suffering, and need in the world—donated \$5,000 to the victims of the 1985 earthquake in Mexico City. When stunned reporters asked why, the answer came back clearly, "Because in 1935, when Italy invaded Ethiopia, Mexico had sent aid." The rule for reciprocity is as forceful, elemental, and lasting as that.

A number of sales and fund-raising tactics use this factor to advantage. The compliance professional initially gives something to the target person, thereby causing the target to be more likely to give something in return. Often, this "something in return" is the target person's compliance. The unsolicited gift, accompanied by a request for a donation, is a commonly used technique that employs the rule of reciprocity. One example experienced by many people is the Hare Krishna solicitor who gives the unwary passerby a book or a flower and then asks for a donation. Other organizations send free gifts through the mail; legitimate and less-than-legitimate missionary and disabled veterans organizations often employ this highly effective device. These organizations count on the fact that most people will not go to the trouble of returning the gift and will feel uncomfortable about keeping it without reciprocating in some way. The organizations also count on the willingness of people to send a contribution that is

larger than the cost of the gift they received.

Retail stores and services also make use of the powerful social pressure for reciprocation in their sales techniques. It is not uncommon to find exterminating companies that offer free home inspections. These companies bargain on the fact that, once confronted with the knowledge that a home is infested with termites, the customer who feels indebted to a particular company will buy its services to repay the favor of a free examination. Certain companies, knowing that the customer is unlikely to comparison shop, have been known to raise the quoted price of extermination above normal for those who have requested a "free" inspection.

*AUTHORITY.* Legitimate authorities are highly influential persons in our society. From childhood, these individuals (parents, teachers) knew more than we did, and we found that taking their directions proved beneficial—because they had more information and more power than us. As adults, the authority figures have changed somewhat, but the advantages associated with following their advice have not. For most people, then, conforming to the recommendations of properly constituted authorities produces genuine practical advantages. Consequently, people are frequently willing to comply with a request that is placed in the context of an authority's suggestion. This becomes worrisome when consumers are so ready to comply with authority directives that they do not distinguish between genuine and counterfeit authorities. Take as evidence the very favorable consumer response to a series of commercials for Sanka Brand coffee that featured the actor Robert Young expounding on the health benefits of decaffeinated coffee. There is no good reason why this series of commercials was so much more successful than other Sanka Brand commercials, except that the spokesman had a strong aura of authority in the minds of his audience: He used to play Marcus Welby, MD, on television.

*COMMITMENT.* After committing themselves to a position or a stand on an issue, people try to act in ways that are congruent with what they have done or said. This is so because of a strong desire to be and look consistent. As a consequence of this desire for consistency, most people will be more likely to say yes to a request if it is consistent with some earlier commitment they have made.

Sometimes these earlier commitments can be quite small. Consider what happened in Toronto when certain homeowners there agreed to accept lapel pins advocating support for the local heart association. The act of accepting a pin to wear on their lapels was so trivial that virtually all of those contacted at their doors agreed. Yet, weeks later when the heart association ran its annual fund raising drive, those individuals who had committed themselves to the charity in this small way were nearly twice as likely to give a donation as those who had not received a pin to wear.

Other more unsavory techniques induce a commitment to an item and then remove the inducements that generated the commitment. Remarkably, the commitment frequently remains. For example, the bait and switch procedure is used by some retailers who may advertise certain merchandise (e.g., a room of furniture) at a special low price. When the customer arrives to take advantage of the special, he or she finds the merchandise to be of low quality or sold out. However, because customers have by now made an active commitment to getting new furniture at that particular store, they are more willing to agree to examine and, consequently, to buy higher-priced merchandise there. A similar strategy employed by car dealers is the low-ball technique, which proceeds by obtaining a commitment to an action and then increasing the costs of performing the action. The automobile salesperson who "throws the low ball" induces the customer to decide to buy a particular model car by offering a low price on the car or an inflated one on the customer's trade-in. After the decision has been

made (and, at times, after the commitment is enhanced by allowing the customer to arrange financing or take the car home overnight), something happens to remove the reason the customer had decided to buy. Perhaps a price calculation error is found, or the used-car assessor disallows the inflated trade-in figure. By that time, however, many customers have experienced an internal commitment to that specific automobile and proceed with the purchase.

**CONSENSUS.** People often use the beliefs, attitudes, and actions of those around them to determine the correctness of their own beliefs, attitudes, and actions. Social science research has found that this is especially true when people are unsure of themselves and when those around them are similar to them. Thus, it is common for individuals who are uncertain of how to respond to seek out information about how similar persons have behaved or are behaving. The implications of this principle for compliance are that, particularly in novel circumstances, people will be more willing to comply with a request to the degree that others like themselves are or have been performing it.

Charitable and other nonprofit organizations frequently make use of consensus information to encourage people to donate. The master of ceremonies at a telethon typically reads incessantly from a handful of pledge cards. The cards are chosen to represent a cross section of the viewing public so that all may have evidence of the similarity of contributors to themselves. The message communicated to the holdouts is clear, "Look at all the people like you who have decided to give; it must be the correct thing to do." Church collection plates (as well as bartender's tip jars) are often "salted" beforehand with folding money to provide social validation for the donation of sizeable amounts. Evangelical preachers are known to seed their audiences with "ringers," who are rehearsed to come forward at a specified time to give witness and offerings. Research has demonstrated that individuals shown lists of prior contributors are more like-

ly to donate to charity; further, the longer the lists of prior contributors are more likely to donate to charity; further, the longer the list the greater the effect.

**SCARCITY.** As something becomes more scarce, it is perceived as more valuable. This is so to a large extent because normally what is less available is more valuable. The fundamental (inverse) relationship between supply and assigned worth appears so commonly that an item's accessibility is often taken as an indication of its quality. For instance, psychologists at the University of North Carolina gave college students chocolate chip cookies to taste and rate. For half of the students, the cookie they tasted was one of ten in a container. For the other half of the students, their cookie was one of only two in the container. In keeping with the principle of scarcity, the students rated the less abundant cookies as more costly, desirable, and attractive to consumers, even though (unknown to the students) all the cookies had come out of the same Nabisco box a few minutes earlier.

With the scarcity principle operating powerfully on the worth assigned to things, it should not be surprising that compliance professionals have a variety of techniques designed to use this principle to enhance compliance. Probably the most frequently used such technique is the limited-number (or standing room only) tactic in which the customer is informed that membership opportunities, products, or services exist in a limited supply and for a limited period. In some instances, the limited-number information is true; in others it is not. In each case, however, the intent is to convince prospects of an item's scarcity and thereby increase its immediate perception of worth.

Related to the limited-number tactic is the "deadline" technique in which an official time limit is placed on the customer's opportunity to get what is being offered. Newspaper ads abound with admonitions regarding the folly of delay: "last three days," "limited time offer," "one week only sale," etc. This

tactic is used in numerous compliance settings. A large child photography company urges parents to buy as many poses and copies as they can afford because "stocking limitations force us to burn the unsold pictures of your children within twenty-four hours." A prospective health club member or automobile buyer might learn that the deal offered by the salesperson is good for that one time only; should the customer leave the premises without buying, the deal is off. Real estate agents are taught to convey a similar idea to hesitant customers. A realtor trying to sell a house to a fence-sitting prospect sometimes calls the prospect to say that another potential buyer (real or fabricated) has seen the house, likes it, and is scheduled to return the following day to talk about terms. The tactic, called in some circles "goosing them off the fence," works by turning a hesitant prospect into a competitor for a scarce resource.

**FRIENDSHIP/LIKING.** It is hardly surprising that people prefer to comply with the requests of those they know and like. Should any evidence on this count be required, we need only look to the phenomenal success of the "home party" concept pioneered by such organizations as the Tupperware Corporation, where we find individuals brought into a buying setting and purchasing products there only because a friend requested it.

But what do compliance professionals do when there is no friendship to exploit? Here the professionals' strategy is quite direct: they induce their customers to like *them*. Tactics designed to generate liking occur in a variety of forms that cluster around certain factors that research has shown to increase liking; *similarity* (compliance professionals often point to—or manufacture—similarities between themselves and target persons before making a request), *praise* (insurance salespeople are frequently taught to compliment a prospect's home, children, or taste in furniture before launching into the sale), and *cooperation*. With regard to the latter, research has shown that

those who cooperate in the achievement of a common goal are more favorable and helpful to each other as a consequence. That is why compliance professionals often strive to be perceived as cooperating partners. Automobile sales managers frequently cast themselves as "villains" so that the salesperson can "do battle" in the customer's behalf. The cooperative, pulling-together kind of relationship that is consequently produced between the salesperson and the customer naturally leads to a form of liking that promotes sales.

**CONCLUSION**

Principles of influence like those described are of increasing interest to con-

sumer affairs professionals because, I believe, they will be used increasingly by future consumers. That is so because these principles normally counsel consumers very well relative to when to comply with a request. Usually, it makes sense to say yes to a person we like or owe or recognize as an authority, or to a person who is offering something rare or popular or to which we have already made a commitment. As such, these principles are often employed by consumers as shortcuts in their decision processes. If one or more of the principles is apparently in a situation, the consumer may stop processing other relevant information and simply comply. I am concerned that the ever-accelerating pace and the information-over-

loaded character of modern life are causing people to rely on decision-making shortcuts to a greater and greater extent. It is for this reason that it seems so important to make consumers aware of their vulnerability to such principles as well as to the crucial distinction between the honest and the deceptive use of compliance principles. ACI

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