SO YOU WANT A JOB?

Ms. Brenda Roberts*

An overview of the job search was offered with specific emphasis placed on:
(1) Job skills required
(2) questions that may be asked of the job candidate, and,
(3) questions that may be asked of the job interviewer.

Before the candidate initiates the job search an analysis of work skills possessed is recommended. The following are among the types of skills that are considered of value to employers:

1. Verbal ability
2. Writing ability
3. Math ability
4. Planning ability
5. Decision-making ability
6. Analytical ability
7. Efficiency
8. Organization
9. Follow through
10. Motivation
11. Dependability
12. Initiative
13. Assertiveness
14. Creativity
15. Conscientiousness
16. Loyalty
17. Attitude
18. Cooperation
19. Leadership
20. Enthusiasm

The candidate should be prepared to respond to questions posed by the interviewer. The following are questions that are often asked in job interviews:

1. What are your long range career objectives?
2. How do you plan to achieve your career goals?
3. Why did you choose the career for which you are preparing?
4. What do you consider to be your greatest strengths and weaknesses?
5. How would you describe yourself?
6. Why should I hire you?
7. In what type of position do you see yourself in five years?
8. In what ways do you think you can make a contribution to our company/university/agency?
9. What two or three accomplishments have given you the most satisfaction? Why?
10. How do you feel about working overtime?
11. Do you think that your grades are a good indication of your academic achievement?
12. What are the two or three most valuable lessons you have learned from your participation in organizations or extra curricular activities?

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13. What do you know about our company/university/agency?
14. Are you willing to travel?
15. What type of work do you prefer?
16. If you could write your ticket, what kind of job would you like to have?
17. How do you spend your spare time? What are your hobbies?

The candidate will have an opportunity to ask questions regarding the position. Among inquiries that should be considered are:

1. What is the growth potential of your organization/department?
2. What is the organizational pattern, and where do I fit into the organization/department?
3. What is the nature of the position? Is it a new position?
4. Is there a job description of the position?
5. What are the housing arrangements and conditions in the general area?
6. What will be my immediate responsibilities? Future responsibilities?
7. What are the requirements and timetable for promotion?

ACCOUNTABILITY: ACCI AT A CROSSROAD?

Ms. Mary Kay Ryan*

Several questions and challenges regarding the present and future role of consumer education and ACCI were highlighted. Specific emphasis was placed on the questions of research, public policy issues, and unique consumer topics. ACCI can play an important role in:

(1) identifying issues
(2) identifying research (past, present, and future) directions and
(3) initiating a clearinghouse service to encourage expanded research cooperation among ACCI members.

There has been a significant growth in public consumer programs at both the Federal and State level. All generating public information; and if they are fulfilling their leadership responsibilities, these agencies are also stimulating independent consumer information programs. Another by-product of this growth is what some call a proliferation of regulations--a proliferation that is generating increasing sentiment against any further regulatory intervention in the market. Emphasis continues on the need for consumer education at all levels, both inside and outside the established network of educational institutions.

Research projects traditionally attempt to answer that concern within the narrow context of specific research projects. All, however, are essentially attempting to identify what measurement criteria should be used to evaluate the work and the effectiveness of the consumer benefits to be derived from a wide range of consumer programs and activities. As a concomitant, researchers should engage in some armchair quarterbacking and identify what specific follow up measures need to be undertaken next. This data in and of itself will be of great value to the makeup of ACCI, but the greater value is to be found in the ripple effect of the research results--that is, the parallels and inferences that will be drawn and applied to analogous issues. Research on how information rationalizes markets that has significant public policy implications, as does information on consumer perceptions of advertising. The data discussed here should not be relegated to our libraries, but should be integrated into the programs for which we are responsible.

The "accountability" theme of the ACCI Conference also comes at the right moment when interest is high in "sunshine" and "sunset" laws, cost/benefit evaluations of government regulations, economic and environmental impact assessment of various governmental programs, zerobased budgeting, lack of coordination of related government programs, etc.

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These are all attempts to force an accounting by public agencies to the American taxpayer. They represent pressures for institutions to evaluate what good they are accomplishing and to identify what damage or counterproductive forces they are generating. Interest in these efforts to measure governmental performance stems from a growing skepticism among the body politic in the ability of government to govern and from a concern about the significant growth in Federal and State agencies in an apparent unplanned and uncoordinated fashion. "Accountability," therefore, is a most timely theme. There is no doubt in my mind that ACCI and its membership can make significant contributions to the nation's knowledge on how to go about the business of structuring and preserving a society in which a workable and productive balance is maintained among all special interests, of which the consumer is one.

The Questions for this Conference

Perhaps the most important questions we can pose to ourselves is: Are there signals in our society that point to new directions for ACCI in light of what ACCI is, what it has achieved and what it can achieve?

There are signals which we should try to assess at this conference in our formal sessions, at our luncheons and dinners and in ACCI's business meeting. Let us summarize what appears to be the signals and the implications of those signals for our organization. What has transpired since last we met in Denver? The tally sheet for consumer issues is not good. The few pluses are the FTC effort on advertising directed at children, HEW's Office of Education funding for some very significant consumer research projects, and the National Consumers League's successful performance as an Offeror for CPSC on a miniature Christmas tree light standard.

There is little other good news. The bill to establish a consumer advocacy agency was defeated. There is still no comprehensive legislation to finance representation of the public in regulatory proceedings although a few agencies are demonstrating some initiative. The CPSC is under serious attack for its unsatisfactory performance by congressional, business and consumer leaders. No comprehensive energy legislation satisfactory to the consumer has been passed and it is not clear that national energy policies are giving proper weight to consumer concerns. Recently, the candidate backed by consumer leaders for appointment to the FTC was passed over by the White House in favor of a candidate backed by the Business Roundtable. Finally, the National Science Foundation has phased out its consumer research program which had been supporting research on a whole range of consumer issues where there is a paucity of data. This decision should make NSF a prime candidate for Senator Proxmire's "Golden Fleece" award jointly with the Department of Commerce which had an opportunity to pick up the program but failed to do so.

How could all of this happen when every opinion poll shows that public supports consumer protection, is in tune with what the movement is trying to accomplish, and supports actively, the concept of consumer representation in government and in business? There seems little doubt that the consumer concerns are being part of the warp and woof of our society--yet this has been a year of zero progress as far as the consumer is concerned.

With this as background, it seems clear that we are at a crossroad--it is time to reassess our options for action, to conduct an accounting of our own organization.

ACCI is the professional base of the consumer movement. Its role is not political--rather its role is and should be primarily that of encouraging and giving recognition to good research on consumer issues. But perhaps there is something more it can do consistent with what ACCI is and what it set out to do when it was founded. Two questions should be posed: (1) Can and should organizations such as ACCI be held accountable for developing a sense of vision about the future of the consumer in our society? and (2) Can and should the responsibility for planning and anticipating the research needed to accomplish that vision be vested somewhere in the consumer movement? If so, is ACCI not the logical institution?

The research community has a major contribution to make to the evolution of our society far in excess of what it is achieving today. The largest deterrent to optimum contribution may be the reward system with academia that does not give sufficient weight to the relevance of research i.e., its market of "users"--those who have unsatisfied data needs.

This became very evident at a conference held last year at MIT where research and its relevance to public policy were examined. There was a marked tendency at that conference for the scientific community to discuss methodology and the purity of the research but disregard the relevancy of the research product or the implications of their data discoveries.

We have to ask ourselves whether there would have been as many consumer disappointments this past year if there had been better data to direct decisionmakers? Each consumer issue listed as a loss had and has a research need. There are more issues on the horizon.

The Arab World is investing millions of dollars in our country. They are financing businesses; they are buying banks; they are also buying significant blocks of property, including residential property. They have to invest the surplus funds produced by the prices we are paying for their oil. What does this mean for the future and structure of our economy, the price of homes, control of our financial institutions, and influence on governmental policies?

All economic forecasters are warning about a rekindling of inflation. Business and government spokesmen are talking as if the old time remedy is going to be used--control inflation by putting people out of work. Governmental policies to control demand are not the way to go. However, is there research to validate this position?

Governmental programs are the focus of most of the "accountability" debates. Until now programs survived by playing the numbers game. What criteria should be used to evaluate government programs. What can and should private citizens be doing? More importantly, how many consumers understand that in effect there is no oversight by the Congress of government programs designed to protect their interests? The art of citizenry is becoming increasingly significant in our society. But the field has been left to the political scientists. They get more rewards for evaluating "shuttle diplomacy" than for evaluating the skills of ordinary citizens in holding their government accountable and justifying the need for citizens to work approximately one day a week to support their government. The economic interest of the consumers of government services is really quite significant and perhaps the worst addressed by the consumer.

There is the issue of food and nutrition and the agricultural policy of the United States consumer leaders have and will be asked for position papers. Where will they get independent data that will direct their thrust?

Another issue of significant magnitude is TV programming. The concern is over the use of the airways under the guise of advertising to address subliminally public policy concerns.

Finally, an issue in which ACCI has historically demonstrated admirable concern is the problems of the elderly. What kind of planning should we be doing for a society that will become dominated by the elderly in the not too distant future? This issue goes beyond health care. It involves market structure, range and design of products, our education system, public services, food and nutrition, etc. How do we bring it all together?

Every one of these issues are on some bureaucrats' agenda somewhere within the Federal and State bureaucracies. The consumer has a significant amount at stake in each of them. Are consumers going to be able to play an effective role in policy and program development if there is no data and no research to which they can turn?

We, the research community of the consumer movement, have a user market. In the short run it is the Government bureaucrat; in the long run it is the consumer leader, legislators and yes, even the business community which must anticipate market demand and shifts in social and economic values.

If ACCI is indeed at a crossroad now--along with the rest of the consumer movement--should we not consider undertaking the following:

1. Identify five to ten major issues that are on the horizon where research needs to be conducted from a consumer standpoint. Develop a plan for acting as a catalyst to insure that research is begun in the priority areas.

2. Canvas government and private programs to identify users of consumer research; compile a list of their research and data needs; make this available to our membership.

3. Expand our clearinghouse service to include a tracking system for logging research starts. This service should encourage cross-checking and expanded research cooperation among our members.

We have a very large market and that market could significantly expand its role if ways can be found to do a market survey of unmet research needs.

There is a much larger role for ACCI to play--one that is consistent with our professional goals. ACCI should hold itself accountable for assessing the opportunities it can create for itself in the interest of the consumer.

PUBLIC AND PRIVATE SOURCES OF INFORMATION: SOME CANADIAN RESULTS

Dr. R. R. Kerton*

Appraisal is made of the "search" for information by evaluating:
(1) privately financed reports by the chief consumer testing agency in Canada, and
(2) publicly financed reports from one drug evaluation program in Canada.
The Canadian results from privately financed reports are disconcerting, but they are remarkably similar to those from three earlier studies based on U.S. data. This suggests that the forces at work are general, rather than specific to either country. Both public and private sources provide information of demonstrable value to those who choose to use the reports. Unexpectedly, though, the new quality and price information does not seem to inject more price competition into the specific markets concerned, according to the evidence reviewed.

Consumer testing agencies such as Consumers' Union are private collective efforts to reduce search costs, while government testing agencies are public collective efforts. This study has two research components: (1) an appraisal of the impact of product rating data as presented in consumer testing magazines and (2) an evaluation of a public information program on drug quality.

The two components together attempt to answer three questions:

1. Are the public and private information activities effective?
2. Are the results specific to one jurisdiction or do conclusions follow which are consistent with other international experiences?
3. Are resources being wasted with current programs?

Product Rating and Price

The conventional economic model of the market assumes a close association between quality and price. Specifically, the consumer is presumed to shift his purchases towards the product or service which provides the quality sought at the lowest possible price. Moreover, those who see the world as being highly competitive must believe that this economizing behaviour occurs fairly quickly, while others in the consumer research field feel that this shift occurs slowly if at all.

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It was to a conference of the Council of the Consumer Information in St. Louis in 1966 that Friedman reported some statistical results which addressed the issue. The research method used consumer product testing information given in Consumer Reports to get rank correlation coefficients to see if quality (as appraised by experts) was closely related to price. Friedman's research furthered some early work pioneered by Oxenfeldt from 1950;[1] and was followed in turn by some results presented by Morris and Bronson presented in 1969.[2] About 1973 the Canadian Consumer, the official magazine of the volunteer Consumers' Association of Canada, began to publish results of laboratory tests thereby making Canadian data available for the first time. This section follows Friedman's approach and presents Canadian results for the same types of tests which he conducted. It also gives an economic interpretation of the results obtained for the U.S. and for Canada.

In the pioneering work on the topic, Oxenfeldt did not insure that the sample size was large enough to guarantee statistical reliability for his results, nor did he insure that the price range over which a consumer could select was large enough to be statistically meaningful. Yet it is one of the interesting findings of later U.S. research that these expected defects did not significantly affect his conclusions.

The following table presents the assumptions made in this study, and in the earlier ones.

Table I

Assumptions Made In Four Studies

	Oxenfeldt	Friedman	Morris-Bronson	Kerton
1. The product (a) is commonly sold in the market place and (b) is widely used.	yes	yes	yes	yes
2. The number of different models of the product examined by the testing organization required for inclusion in study.	3	8	6	6
3. The price range is at least 50% (the highest price model costs at least 50% more per unit than the lowest price model tested).	No?	yes	?	yes
4. The models were differentiated into at least three grades of quality.	?	yes	yes?	yes
5. The models are comparable and do not differ with regard to the extras they offer.	yes	yes	yes	yes

It was presumed that the types of product which would be tested by Consumers' Union or by the Consumers' Association of Canada would be selected on the basis on the suitability of the information to a wide group of the appropriate population. The Canadian study excludes products where fewer than six models (or brands) were reported upon, as did the Morris-Bronson work. As with the U.S. work, we insisted as well that we include only products where the price of the highest price model is at least 1.5 times the price of the cheapest model. These assumptions (or assumptions 2,3 and 4) are an attempt to ensure that there is enough statistical variability in the sample to perform the

tests. Friedman's results are for 29 products which have at least eight brands of each one. If we standardize the Canadian study to the eight product criterion, we reduce the number of products tested from 43 to 35 without significantly changing the conclusion.

Table II

Array of Rank Correlation Coefficients for Quality and Unit Price for 43 Canadian Consumer Products 1973-1977.

Date of Canadian Consumer Report	Product	No. of Models Tested	r_s
Apr. 75	Standard Bicycles	6	.886*
Dec. 74	Thread-Mercerized Cotton	6	.729
Aug. 73	Toilet Tissues - 2 Ply	8	.726*
Dec. 74	Thread-Polyester	6	.657
Aug. 75	Jeans-100% Cotton (Boys & Girls)	8	.655*
Apr. 74	Meat Pies - Turkey	10	.606*
Apr. 75	Thermometers - Oven	6	.600
June 73	Vacuums - Canister and Tanks	11	.564*
Apr. 75	Bicycles - Highrise	13	.558*
June 74	Pantyhose - One Size	16	.543*
Feb. 73	Windshield Washer Antifreeze Concentrate	6	.543
Feb. 73	Beef Stew	12	.542*
Apr. 74	Batteries - 'AA' Dry Cell	9	.508
Feb. 73	Windshield Washer Antifreeze	22	.503*
Oct. 73	Jeans - Boys	8	.500
Feb. 74	Hockey Helmets	10	.500
Apr. 74	Batteries - 9-Volt Dry Cell	8	.476
Dec. 75	Hair Stylers	11	.461
June 74	Teakettle - Electric	17	.458*
Apr. 74	Meat Pies - Chicken	10	.433
Dec. 76	Pantyhose - Medium	23	.432*
Apr. 77	Vacuum Cleaner - Uprights	9	.417
Dec. 76	Pantyhose - Small	25	.393*
Aug. 73	Paper Towels - 2 Ply	9	.392
Apr. 74	Batteries - 'C' Dry Cell	9	.325
Apr. 74	Meat Pies - Beef	10	.288
June 76	Light Bulbs	12	.252
Feb. 75	Windshield Washer Antifreeze	38	.195
Oct. 74	Laundry Detergent	24	.184
Dec. 76	Pantyhose - Large	12	.164
June 76	Lip Gloss	21	.157
June 75	Window Cleaners - Non Aerosols	8	.125
Apr. 77	Vacuum Cleaner - Combination	8	.053
June 76	Lipstick	39	.041
Feb. 74	Windshield Washer Antifreeze	19	-.035
June 77	Bath Soaps	24	-.136
Apr. 74	Batteries 'D' Cell	12	-.138
June 73	Vacuums - Upright	8	-.214
Oct. 76	Pressure Cookers	6	-.371
Aug. 73	Facial Tissues - 2 Ply	15	-.431
Dec. 73	Dishwashers - Convertible	9	-.450
Apr. 75	Thermometers - Meat - Alcohol	6	-.543
Apr. 77	Vacuum Cleaners - Canister	6	-.643

Median: .417
Mean: .277
*Statistical significance at the .05 level

What do the Canadian results by themselves show? Was there a significant association between the quality of an item and its price? The answer is no. The correlation coefficient ranges from a high of +0.89 to a low of -0.64. In nine of the forty-three cases the association between price and quality is negative, indicating that the more the buyer pays, the less likely he or she is to purchase the product of superior quality. On the whole the distribution is nearly rectangular, with the full range of coefficients represented, and very little concentration around any number. For that reason the average correlation coefficient may not have a great deal of meaning, but for the record, it is +0.28--not at all a high enough number to be reassuring.

How do these results for Canada compare with the results of earlier research for the United States? The following table gives the mean of the rank correlation coefficients for each of the four studies being compared as well as the median.

Table III

Comparison of Results from Four Price-Quality Studies for the United States or Canada and Covering Sub-periods between 1940 and 1977

Author	Data Source	Minimum Number of Brands Required	Sample Size (No. of Products)	Number of Negative Coefficients	Mean of Rank Correlation Coefficients	Median Rank Correlation Coefficients
Oxenfeldt	Consumer Reports 1940-49	3	35	9	0.26	0.35
Friedman	Consumer Reports 1961-65	8	29	9	0.15	0.20
Morris and Bronson	Consumer Reports 1958-67	6	48	10	0.29	0.36
Kerton	Canadian Consumer 1973-77	6	47	9	0.28	0.39

The similarity of the results is arresting. The inescapable conclusion is that over the different mixes of products covered, over time, and over the two countries, there is very little difference in the strength of the relationship between price and quality, and that relationship is extremely weak.

Interpretation of the Low Correlation of Rating and Price

First, there is a point which researchers in this field should concede, and this has to do with the kinds of products which consumer testing organizations select to test. The economic incentive structure facing these organizations is one in which they give the most service (and gain the most sales) from presenting results on the particular kinds of products about which confusion abounds. The consumer testing organizations therefore should choose items which will be most helpful to their readers and a casual review of the products covered in WHICH, QUE CHOISIR, Stiftung Warentest, Canadian Consumer, and Consumer Reports gives no reason to doubt the proposition. A quantitative test would still be superior.

Second, there is no reason to modify the original 1950 conclusion of Oxenfeldt that "...while more expensive products are higher in quality than cheaper brands for most of the products studied, the reverse was frequently true." Collectively, the four studies show a huge range of products over which the consumer has considerable need of accurate information.

Third, how quickly does the consumer learn? If the learning occurs fairly quickly, then consumers will shift towards the effective low cost brands with a consequent improvement in well-being as well as resource saving. The consumer testing organizations are clearly agents which accelerate the learning process. The important work on this point has been done by Morris

and Bronson[3] who examined products which were re-tested in subsequent Consumer Reports. They drew the disturbing conclusion that at least 31% of the 188 changes studied were "disorderly" (such as a subsequent decrease in quality along with an increase in price).

It seems that it would be a serious mistake to ignore the fact that some sellers stand to lose considerably from any improvement in the operation of the market. It is important to see the economic situation of some sellers. The brand loyality, or confusion, or ignorance, revealed in the above statistics, is of great importance to some vendors, and it would be foolish to ignore the fact that the economic incentive structure requires them to devote resources to ensuring that the situation continues. Given the opposing economic forces, the outcome is indeterminant.

Fourth, can any general information on market circumstances be identified which will allow us to predict just when price and quality will be very poorly correlated? What is the characteristic of the markets for children's jeans or meat pies (significant at +0.66 and +0.61) in contrast to a characteristic of the markets for 'D' cell batteries or facial tissues (-0.14 and -0.43)? The identification of the critical characteristics would be extremely helpful.

Finally, are the problems peculiar to particular buyers and sellers? Or are they generic to the market system? The research results for Canada, as presented above are remarkably close to those for the United States. This leads one to presume that the forces at work are general. Still, it is true that the two economies are very similar, with a common set of multi-nationals, and with several brands which exist in both countries. So it cannot be claimed that the hypothesis has been fully tested.

Public Information on Drug Quality

There are two special features of the market for prescription drugs which make quality-price considerations significantly different from those of other consumer products. First, there is usually some urgency connected with illness so that if there is a shortage of accurate information, the decision will often be made to opt for expected therapeutic effectiveness rather than lower price. Second, the price is usually paid by the person taking the drug (or an insurance plan) and not by the individual (the doctor) making the selection. The two forces together lower the price elasticity of demand. The ground is, therefore, particularly fertile for branding efforts directed at emphasizing real or imagined product differences.

One remedy which has been proposed for this unhealthy situation requires that a public testing agency be set up to evaluate the effectiveness of the different brands of the same drug. It is the objective of this investigation to report upon the results obtained for an evaluation of the price impact of PARCOST (Prescriptions Available At Reasonable Cost) the drug appraisal

system employed in the Province of Ontario. The work was completed by Tapan K. Chowdhury, a graduate student at the University of Waterloo. The PARCOST program has been in effect since October of 1970 providing information on the quality and price of selected drugs sold in Ontario.

The specific hypothesis being tested is in two parts: a) that the new information on equivalent products will cause the average price of substitute drugs to decline through induced price competition, and b) that the additional information will reduce the variance of the prices of equivalent drugs. The second part hypothesizes that the provision of accurate information will reduce product differentiation and will reduce the ability of high priced sellers to maintain that price differential once accurate quality information is made available.

In addition, this section investigates the effect of a law prohibiting the pharmacist from making substitutions for certain drugs. This is expected to be of some significance because of the importance of the economic principle of substitution.

The data were taken from twelve reports published by the Ministry of Health between October of 1970 and January of 1977.[4] Forty-one common drugs were examined. Of these, 36 drugs were interchangable, indicating that pharmacists can legally substitute one brand for another.

In order to see if publicity concerning price and quality can induce a measure of price competition to the prescription drug market, statistics on prices charged by the seller over the period from 1971-1977 were regressed on time for each brand and for each of the 41 different drugs. The sign, magnitude, and significance of the regression coefficient is expected to show the trend of prices. Negative coefficients, in the face of generally rising drug prices, would indicate that the new information may be responsible for price decreases.

For part (b) of the hypothesis, the procedure involves regressing the coefficient of variation on time and examining the sign to see if the coefficient diminished throughout the period when price information was made available. A second test employs both time and the mean price simultaneously against the coefficient of variation.

Results of the Drug Study

We hypothesized that price-quality information will induce price competition and lower the mean prices of the equivalent drugs. We, therefore, expect that a negative sign in Table IV is consistent with the hypothesis. As Table IV shows, 26 of the 36 coefficients have negative signs and this is taken to be reasonably strong support for the hypothesis that in general, prices

will fall. Moreover, of the 26 results, 23 are statistically significant. It is also true that most of the positive (or contrary) coefficients are in fact zero if one works to one decimal place of accuracy (they are as small as .02, .03, or .006). The results are given in Table IV.

Table IV

Summary Results for the Change in Mean Prices Over Time

	Thirty-six Interchangeable Drugs		Five Non-interchangeable Drugs	
Negative Coefficients	Significant	23	Significant	0
	Insignificant	3	Insignificant	0
		26		0
Positive Coefficients	Significant	6	Significant	5
	Insignificant	4	Insignificant	0
		10		5

The Table also indicates that the existence of the law against interchangeability is sufficient to negate completely the impact of the Parcost information program. None of the five drugs which were deemed by law to be non-interchangeable had a negative coefficient and in fact all five were positive and statistically significant.

For the second part of the hypothesis, we expected that as the ignorance component of product differentiation disappears through the publication of Comparative Drug Index, the variance in the prices charged for each drug would decrease over time.

Accurate information on the comparability on the different drugs was expected to be a force which would lead to convergence towards a competitive price. As indicated in the general introduction, it is this rate of convergence which is critical to whether or not we can realistically expect to end up with the market structure known as perfect competition. We, therefore, hypothesize that we will see negative coefficients in Table V. (Refer to Table V)

In the first version, the results indicate that for 36 interchangeable drugs, 31 had positive coefficients--drug prices were diverging. In the equation which we think is best, we find 17 negative coefficients and 19 positive coefficients for the 36 interchangeable drugs. It is very difficult to conclude anything from these results.

It was noted earlier that the Government of Canada also introduced a drug information scheme about the same time that Parcost was introduced. It is, therefore, necessary to try to isolate the impacts of the two programs. If the Ontario program is independently effective, then we can hypothesize that the market share of the low price brand of each drug would increase more in Ontario than in the rest of Canada. This test seems like a good idea, but since the Federal program does not provide prices, it is possible only to run a weaker test which assumes that the rank order of prices in Ontario is also the rank order of prices

in the rest of Canada. The information on market shares comes from a different source and was available for only twelve drugs. If prescriptions consumed respond in a competitive way to the price-quality information provided in Ontario, we should see (in Table VI), a closer correlation between the change in market share from 1972-1976 and price in Ontario than we see elsewhere.*

Table V

SUMMARY RESULTS ON BEHAVIOUR OF VARIANCES

CO-EFFICIENTS OF T FOR EQN. 2: $\frac{o}{\bar{p}} = f(T)$

36 DRUGS INTERCHANGEABLE		FIVE NON-INTERCHANGEABLE	
- ve Coefficients:		- ve Coefficients:	
Significant	2	Significant	0
Insignificant	3	Insignificant	0
+ ve Coefficients:		+ ve Coefficients:	
Significant	23	Significant	3
Insignificant	8	Insignificant	2
- ve 5 ;	+ ve 31	- ve 0 ;	+ ve 5

CO-EFFICIENTS OF T FOR EQN. 3: o = f (T)

36 DRUGS INTERCHANGEABLE		FIVE NON-INTERCHANGEABLE	
- ve Coefficients:		- ve Coefficients:	
Significant	6	Significant	0
Insignificant	4	Insignificant	2
+ ve Coefficients:		+ ve Coefficients:	
Significant	15	Significant	3
Insignificant	11	Insignificant	0
- ve 10 ;	+ ve 26	- ve 2 ;	+ ve 3
- ve Coefficients:		- ve Coefficients:	
Significant	3	Significant	1
Insignificant	14	Insignificant	0
+ ve Coefficients:		+ ve Coefficients:	
Significant	9	Significant	2
Insignificant	10	Insignificant	2
- ve 17 ;	+ ve 19	- ve 1 ;	+ ve 4

Table VI

Relationship Between Prices and Change in Market Share

Product	Rank Correlation Between 1976 Prices in Ontario and the Change in Market Share 1972 to 1976 for Rest of Canada/Ontario		Does Difference Support Expectation?
Tetracycline	-0.52	-0.85	No
Phenylbutazone	-1.70	0.10	Yes
Meprobamate	-0.50	0.50	Yes
Prednisone	0.49	0.54	Yes
Chlordiazepoxide	0.90	1.00	Yes
Erythromycin	-0.40	-0.40	-
Penicillin G. Pot	-0.70	-0.70	-
Ampicillin	-0.13	0.41	Yes
Hydrochlorothiazide	0.40	-0.40	No
Phenobarbital	-0.50	0.50	Yes
Tolbutamide	0.88	0.88	Yes
Chlorpromazine	-0.80	0.80	Yes

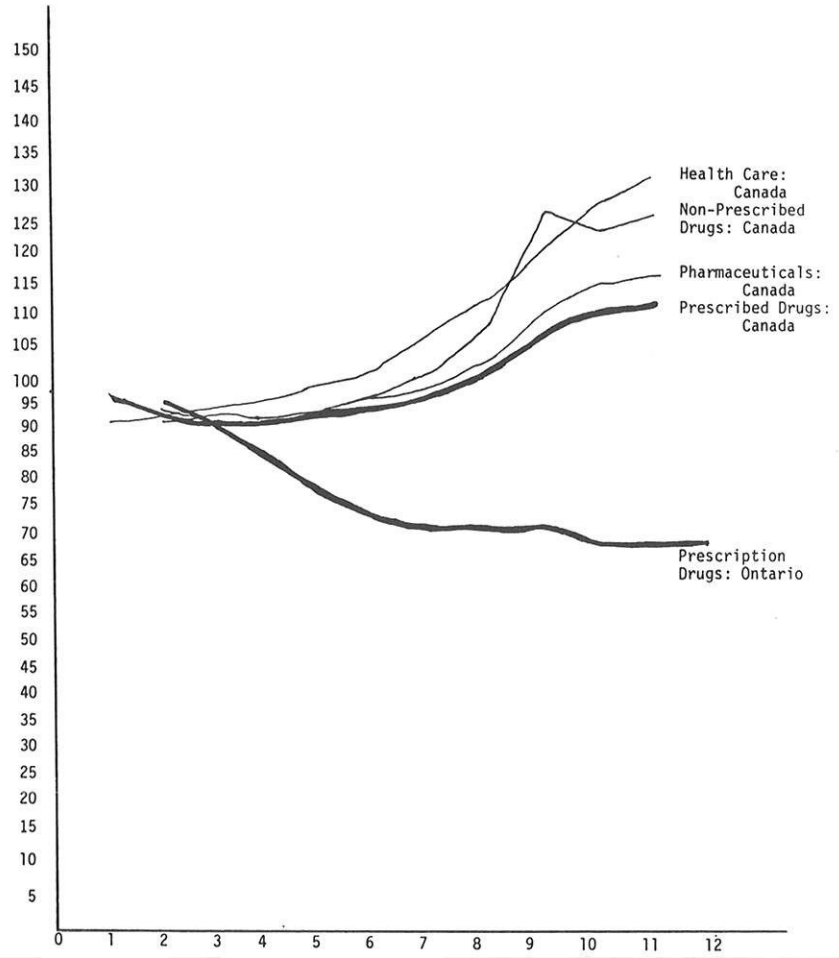
Two of the twelve products show identical correlations, and the remaining ten, eight support the price expectation that we had in mind.

*There are additional statistical reasons why this is a weak test. The Ontario price is precisely the right price for the market share versus price relationship in Ontario, but not exactly the right price for the market share in the rest of Canada versus the price in the rest of Canada.

In other words, whether it is through change in prescribing habits or whatever, we do find the market shares making the expected competitive response to the provision of accurate information. Parenthetically, the results also suggest that if the Federal program provided accurate price information as well as quality information, consumers in the rest of Canada could make considerable savings.

The final comparison has to do with the changes in relative prices of a number of health products, we used the information collected from issues of the Ontario Consumer Drug Index to construct a price index for prescription drugs in Ontario to compare that index with official statistics for other health prices. This information is presented in the following graph.

FIG. 1 PRICE INDEX (1971=100)



The visual summary indicates a significant measure of success for the drug information program underway in Ontario.

In this section three questions were being investigated. On the basis of the results presented, the following conclusions are advanced:

1. In general the evidence supports the hypothesis that the public information program helped produce a decrease in average drug prices.

2. The evidence does not support the hypothesis that induced price awareness would reduce product differentiation causing prices of equivalent drugs to converge.

3. Those drugs covered by the law forbidding pharmacists from making substitutions show no effects of induced price competition.

Conclusion

1. Are public and private sources of information effective?

(a) From the individual's point of view the "private" information from testing laboratories can be extremely effective. For products covered in Part B above, it was sometimes the case that brands of equal quality had prices which differed by as much as 100%.

(b) From the point of view of improving the way that the market functions, much less success can be claimed for private testing activities. It seems reasonable to expect that the information presented might diffuse through the market quickly enough to induce closer price-quality relationships. Yet the astonishing persistence of the very low correlations over all four of the Oxenfeldt, Morris-Bronson, Friedman, and Kerton studies does not permit the claim that the testing information is highly effective in inducing market competition. It is easy to imagine that in the absence of this information, things would be worse--even fewer consumers would be shifting toward the superior buys.

(c) From the individual's point of view, a "public" information program can reduce the average price of drugs by decreasing, to a degree, the cost from artificial product differentiation. The word "cost" refers to the consumer's cost of receiving the appropriate medication.

(d) From the point of view of improving the way that the market functions, the public search effort earns a medium grade at best. Some doctors have clearly responded to the price-quality information while others maintain alternative prescribing patterns. Our test of induced price competition was based on the hypothesis that the new information would cause prices to converge toward a more competitive price. The evidence does not support that hypothesis. We are therefore obliged to conclude that so long as significant numbers of the

"selectors" continue to perceive product differences (even where experts in testing labs do not) then it is worthwhile for the seller to maintain the price premium rather than to adopt a more competitive pricing strategy.

2. Are the results "general" or are they specific to one jurisdiction?

   The very low correlation between price and quality is common to all four of the studies reported in Part B. These results are common to the large array of products covered, and they hold for both the U.S. and the Canadian markets. A good deal more work is necessary but these results suggest that general or market characteristics are more important than politico-cultural ones.

3. Are resources being wasted?

   The answer seems to be yes. Under the "search cost" approach, the (private) consumer testing agencies and government agencies testing products are both methods of seeking reliable product information. The information is a benefit which has a value; and both search methods are achieved at some cost. The information gained, however has the characteristic of a "public good." In a global context, a strong case therefore exists for sharing the information somewhat more widely than we now do. This may mean a far more active role for agencies such as the World Health Organization and certainly for the International Organization of Consumers' Unions. Otherwise, we will have a situation where citizens in one jurisdiction pay to search for information which has already been financed and found in another jurisdiction. This duplication is wasteful. More tragic yet, the poorer countries cannot afford to search for information which, has the characteristic of a public good and which is known somewhere else.

FOOTNOTES

1. Alfred Oxenfeldt, "Consumer Knowledge, Its Measurement and Extent," Review of Economics and Statistics, XXXII, (1950) 300-314.

2. Ruby Morris and Claire Bronson, "The Chaos of Competition indicated by Consumer Reports," Journal of Marketing, XXXIII,(1969) 26-34.

3. Ibid.

4. Ontario Ministry of Health, Comparative Drug Index, various issues.

TYPES, AMOUNTS AND SEQUENCES OF INFORMATION USED BY EFFICIENT CONSUMERS

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The specific types of informational contents, amounts of information, and sequences of informational selection used by efficient consumer decision-makers were analyzed in an exploratory laboratory experiment. Perfectly efficient consumers appeared to use a larger number of informational contents than other consumers. Their information-seeking sequences predominantly followed a processing by characteristics strategy of information seeking. Complete data on a wide range of specific information on product characteristics and purchasing criteria selected by efficient decision-makers were also presented. Implications for consumer educators, policy makers and marketers were discussed.

In a recent article we introduced a new methodology for measuring the efficiency of consumer decision-making under differing informational constraints.[1] That article presented an analysis of data from an exploratory laboratory study which demonstrated that the efficiency of consumer decision-making is likely to increase as the amount of information relevant to the consumer's choice is increased.

The present article extends the methodology and findings of that initial exploratory study. One objective of the present study is to describe in some detail an "information processing" methodology which is useful for analyzing the actual information-seeking and decision-making process through which consumers proceed as they arrive at a choice. The second and perhaps more important objective is to present detailed findings of the particular information seeking behaviors used by efficient consumers. We are focusing on efficient consumers because their particular behaviors may be significant models for development of consumer informational and educational programs. Furthermore, the specific informational strategies which these highly successful consumers use may offer important baseline data for policy planners both in the public and private sectors.

We will present illustrative data on the following specific issues:

(1) How much does the level of consumer efficiency increase as increasing levels of information are made available?

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(2) How many bits of information do consumers operating at differing levels of efficiency use?

(3) What specific informational contents are efficient consumers most likely to choose during their decision-making process? and

(4) In what sequences do efficient consumers choose bits of information in arriving at their final decisions?

The Concept of Consumer Efficiency

In general the concept of consumer efficiency refers to the consumer's relative success in obtaining maximum consumption from a fixed level of resources. This general and broad conception of efficiency is well-known in the discipline of economics and is used in a wide range of analytical contexts. In the particular context of the present study consumer efficiency refers to the consumer's success in analyzing alternative choices of products (i.e. brands within a product category) based on the amount of information available on each alternative.

Using this theoretical foundation, a perfectly efficient consumer would be one who could determine the levels of quality, satisfaction, or fulfillment of needs obtainable from each of the alternative choices. In a similar manner, consumers might be categorized as operating at other levels of efficiency (i.e. moderate efficiency, low efficiency) when their performance deviates to varied degrees from perfect efficiency. Theoretically the consumer would choose the alternative which was highest in the judgment process, assuming absence of any intervening constraint.

This general conception of consumer efficiency is used in the present research. Specifically, we have developed an operational measure of consumer efficiency based on the consumer's ratings of product quality, based on information available, as compared to objectively established quality ratings. This simple measure of efficiency will be described in greater detail in the following discussion of research methodology.

An Overview of the Research Methodology

The investigation involved an experimental laboratory design. Subjects were 142 undergraduate women in the School of Consumer and Family Sciences, Purdue University. Subjects were randomly divided into three groups. Each group participated in a consumer information-seeking and decision-making experiment which involved rating the quality and individual purchase preferences for four competing brands of two products, blankets and slow cookers. These products had previously been rated in Consumer Reports.