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INTRODUCTION

Since 1990, the marketplace has produced hundreds of products bearing a wide range of environmental claims. Consumers who want to purchase products less harmful to the environment must evaluate meaningful, exaggerated, irrelevant and specious labeling claims. Pennsylvania Resources Council and U.S. EPA Region III co-sponsored the second annual Environmental Shopping Conference on September 30, 1991 to provide information to consumers and others about the issues surrounding environmental claims. The Environmental Shopping Conference was immediately followed by the U.S. EPA Region III Conference on Environmental Labeling, October 1-2. Both conferences were held at the Hyatt Regency on the Inner Harbor in Baltimore, Maryland. For information on the Environmental Labeling Conference, please contact Pennsylvania Resources Council at (215) 565-9131 or write to P.O. Box 88, Media, PA 19063.

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The Future of Green Consumerism:

Applying Behavior Analysis to Extinguish A Throwaway Mentality

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THE FUTURE OF GREEN CONSUMERISM: APPLYING BEHAVIOR ANALYSIS TO EXTINGUISH A THROWAWAY MENTALITY

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> Most thoughtful people agree that the world is in serious trouble...fossil fuels will not last forever, and many other critical resources are nearing exhaustion; the earth grows steadily less habitable; and all this is exacerbated by a burgeoning population that resists control. The timetable may not be clear, but the threat is real. That many people have begun to find a recital of these dangers tiresome is perhaps an even greater threat (Skinner, 1987, p. 1).

This quote by the most eminent behavioral scientist of our time defines the crisis addressed at this conference, and sets the stage for finding solutions to critical environmental problems. Many people deny our environmental exigencies, including acid rain, damage to the earth's ozone layer, ocean pollution, the loss of tropical forests, and the worldwide misuse of land and water (Goleman, 1988); whereas others claim some environmental crises have reached dimensions beyond repair (e.g., Ehrlich, Erlich, & Holdern, 1977; Rifkin, 1980). Many people maintain a relentless optimism regarding planetary concerns, some

adopting a "business as usual" stance (as if environmental problems will correct themselves naturally) and others assuming that high technology engineering will find sufficient answers (Robertson, 1986).

While a number of technological advances have mitigated environmental problems and we can hope for more of these in the future, we cannot count on "quick-fix" engineering technology alone to solve the environmental crisis. In fact, human behavior contributes most significantly to the degradation of Planet Earth. In other words, as Pogo has said, "We have met the enemy and his is us." Thus, the role of the human element in contributing to environmental problems or in helping to alleviate the crisis through green consumerism is undeniable. Understanding and changing individuals' behaviors, attitudes and mentality in order to solve problems is a prime focus of psychology, and the subdiscipline of psychology which has the most potential to benefit green consumerism is applied behavior analysis.

Applied Behavior Analysis

Applied behavior analysis is founded on the approach to behavioral science developed by B. F. Skinner (1938). In his experimental analysis of behavior (or operant learning paradigm), Skinner rejected unobservable inferred constructs such as drives, needs, motives, cognitions, and so on; and he studied only overt behavior and its observable environmental, social, and physiological determinants. Therefore, behavior analysts usually identify overt behavior as their dependent variable (i.e., the

target to measure and change), and environmental stimuli or contingencies (i.e., relationships between designated target behaviors and their consequences) as independent variables (i.e., the aspects of the situation manipulated to change a target behavior). Thus, behavior analysts have addressed environmental problems by first defining the problem in terms of relevant overt behavior, and then designing and implementing intervention programs to decrease behaviors that cause the problem and/or increase behaviors (e.g., green consumerism) that can alleviate the problem.

Before discussing specific behavior change interventions to extinguish our throwaway mentality and increase green consumerism, it is instructive to consider a critical perspective of the behavior analysis approach which is contrary to numerous intervention strategies used currently to attempt an increase in environmental responsiveness among the public. A common notion among social scientists (including psychologists) is that individuals change their behaviors as a result of information or advice, and that attitude change (or a pro-environment mentality) is the necessary mediating variable (e.g., Dennis, Soderstrom, Koncinski, & Cavanaugh, 1990; Fishbein & Ajzen, 1975). In other words, information (e.g., about green consumerism) should focus on changing people's attitudes or mentality (e.g., about the environment), and then after appropriate attitude or cognitive change, individuals will change their behaviors (e.g., to be more protective of the environment). Behavior analysts do not deny that changes in attitudes and mentality can lead to behavior

change, but claim (on the basis of empirical evidence) it's usually more cost effective to target behaviors directly and then expect desirable changes in attitude and mentality to occur as a result of behavior change (cf. Geller, 1986, 1989).

B. F. Skinner (1987) maintained that human behavior is selected (or determined) by its consequences, and we should not expect many people to change their behavior as a result of information or advice alone, especially when the information is about a distant future, as is the case with most environmental problems. People may follow advice when the advice-giver's information has led to beneficial consequences in the past, but this situation requires people to experience the reinforcing consequences of prior compliance with similar advice-givers or similar rules. Such operant learning or response selection by reinforcing consequences is quite difficult (perhaps impossible in some cases) when the future reinforcing or punishing consequences are unclear, vague, or remote (and all three of these characteristics are relevant in the domain of green consumerism and environmental protection). Collecting recyclables, for example, has typically not become common practice until individuals have experienced the consequences of excessive solid waste (e.g., the problems of finding suitable landfill space or a port to dock a garbage barge); and petroleum or water conservation behaviors have not been practiced widely until the punishing consequences (e.g., inconveniences) of gas or water shortages were experienced.

Although individuals are more inclined to follow advice

(e.g., regarding green consumerism) after experiencing consequences related to such advice (e.g., the displeasures or inconveniences of environment degregration or resource shortages), there are often ongoing response-consequence contingencies supporting behaviors incompatible with the advice. For example, the excessive use of environmental resources and the pollution of air and water is maintained by varieties of reinforcing consequences, including convenience, comfort, money and everything money can buy. Thus, effective behavior change for environmental protection may require the modification or removal of contingencies currently supporting behaviors detrimental to the environment, as well as establishing new response-consequence contingencies to motivate the occurrence of behaviors beneficial to the environment. Most of the applied behavior analysis research for environmental protection has focused on the second challenge, and we turn now to an overview of that research.

Designing Intervention Programs to Protect the Environment

A simple Activator-Behavior-Consequence framework or ABC model defines the basic behavior analysis approach to intervention development. In other words, conditions or events preceding (i.e., activators) or following (i.e., consequences) designated target behaviors are arranged systematically to increase or decrease the target behavior's frequency of occurrence. Therefore, the first step in designing an intervention program is to define a target behavior to change. Behavior analysts attempt to define the target behavior so

precisely (i.e., operationally) that its frequency or rate of occurrence can be observed and tallied reliably. This enables the behavior analyst or intervention agent to obtain an objective record of the target behavior before and after the intervention program, thereby evaluating the behavior-change impact of the intervention. Ideally, some behavioral recordings are taken long after the intervention program has ended, in order to assess the long-term effects or durability of the behavior change procedures. This entire process can be readily remembered by the acronym "DO RITE" representing the sequence of: (1) **D**efine the target behavior to be changed; (2) **O**bserve the target behavior; (3) **R**ecord occurrences of the target behavior; (4) **I**ntervene with a program to change the target behavior; (5) **T**est the impact of the behavior-change intervention by comparing records of behavior <u>before</u> and <u>after</u> the intervention; and (6) **E**valuate whether the program was cost effective, whether a more potent intervention program is needed, whether the program should be implemented on a large scale, or whether it's advisable to start the DO RITE process all over again (Geller, Lehman, & Kalsher, 1989). It is not as straightforward as it seems to do this process right for optimal environmental protection, as is realized by considering only the first step of DO RITE--defining a target behavior to change.

Defining Target Behaviors for Environmental Protection

The variety of human behaviors related to environmental protection (or green consumerism) are numerous, occurring daily in almost every setting (e.g., at home, at work, at school, at

commercial locations, and in transition between settings). However, defining responses detrimental and beneficial to the planet and prioritizing recommendations regarding desirable change usually requires interdisciplinary input (Geller, Winett, & Everett, 1982). For example, engineering data are required to advise which appliance or vehicle is most energy efficient or environment polluting; architectural data are often helpful in defining optimal insulation techniques and landscape designs for conserving energy in heating and cooling residences; biological data are essential to prescribe optimal procedures for composting and for disposing of hazardous waste; and information from physics and human factors engineering is relevant for defining the most environment-preserving ways to use appliances, vehicles, industrial machinery, conservation devices, and systems for heating, cooling, recycling, or water treatment (Geller, 1986). "The Green Consumer" by Elkington, Hailes, and Makower (1990) is filled with behavioral advice to protect our environment.

To categorize the potential target behaviors of a comprehensive plan for environmental protection, Geller et al. (1982) proposed a 2 x 3 x 5 factorial array (or three-dimensional matrix), with the following variables: 1) two basic intervention <u>approaches</u> (physical vs. behavioral); 2) three community <u>sectors</u> requiring direct intervention (residential/consumer, governmental/institutional, and commercial/industrial); and 3) five <u>targets</u> or domains for intervention within each sector (i.e., heating/cooling, solid waste management, transportation, equipment efficiency, and water). It is noteworthy that these

five targets do not cover the entire environmental crisis. For instance, problems related to population explosion, air pollution, land misuse, hazardous waste, and mineral depletion were not addressed by Geller et al., and have not been researched by social scientists or behavior analysts. In addition, almost all of the behavior change research has targeted individual behaviors in the residential/consumer sector rather than the governmental/institutional or commercial/industrial sectors where the potential for large-scale change for environmental protection is greatest. However, the principles and intervention strategies derived from demonstration projects in the residential/consumer sector are relevant for developing behavior change programs and policy in the corporate and governmental sectors of society. The point is that behavior change researchers have clearly only cracked the surface with regard to making a significant contribution to the human element aspect of environmental problems.

<u>One-shot vs. repetitive behaviors</u>. Some strategies for green consumerism require only one occurrence of a particular target behavior or a one-time behavior change (e.g., installing a thermostat which automatically changes room temperature settings to preprogrammed levels; undergoing surgical sterilization for birth control; purchasing an energy-efficient vehicle with optimal emission controls; wrapping insulation around a water heater; inserting a shower-flow restrictor in a showerhead; installing a solar heating system; adding insulation to a building; purchasing longer-lasting equipment; applying

appropriate irrigation technology; and constructing a high technology waste separation system). On the other hand, other behavioral approaches to green consumerism require repetitive action in order to effect significant environmental protection (such as setting back room thermostats each night; using contraceptives consistently; following antipollution guidelines regularly; driving 55 mph or less; taking shorter and cooler showers; purchasing low-phosphate detergents, white toilet paper, and returnable bottles; using separate containers for recyclable paper, metal glass, and biodegradable trash; maintaining a compost pile for food and yard wastes; and wearing more clothes indoors in order to withstand lower room temperatures).

For "one-shot" behaviors, the user usually pays a one-time, relatively high cost in time and/or money for the subsequent convenience of not having to make continued response input. However, several strategies for environmental responsiveness involve both a one-shot investment and repeated actions. For example, a window fan can be purchased to substitute for an air conditioner, or a moped acquired to substitute for an automobile, but energy conservation does not occur unless the consumer makes repeated decisions to use the more energy-efficient equipment. Likewise, energy-saving or antipollution settings on new energy-efficient and environment-protective appliances are not worth much unless they are used regularly. Furthermore, innovative equipment for separating, transporting, and re-processing recyclable trash are not protecting the environment until they are used appropriately each day by numerous individuals (e.g.,

from residents who initiate the process by collecting recyclables to retailers who promote the purchase of recyclable and recycled commodities).

Peak shift behaviors. In the realm of energy conservation, there is an additional class of target behaviors for green consumerism. These are "peak shift behaviors", which refer to changing the time when residents (and corporations and governments) emit certain energy consumptive behaviors. Reducing peak demands for energy decreases the need for power companies to build or borrow supplementary generators or other energy sources (e.g., nuclear reactors). In fact, electricity suppliers have been willing to vary their rates according to peak demand (i.e., peak-load pricing), but residents have found it difficult to shift various energy-consuming tasks (Kohlenberg, Phillips, & Proctor, 1976). Moreover, this strategy has not been seriously considered by industries, institutions, or governments.

Peak shifting is usually associated with residential energy use (e.g., changing showering, cooking, laundering, and sleeping times), but this class of behaviors may be even more feasible as a large-scale conservation strategy for the corporate and municipal sectors of a community. Consider, for example, the peak-shift advantages of altering the scheduling and/or length of work shifts at industrial complexes and government agencies (e.g., through the adoption of flexible work schedules or a four-day work week). Large-scale changes in work schedules could result in peak shifts (and energy savings) at the work setting, at home, and during commuting. The major function of urban

transit systems, for example, is to serve individuals traveling to and from work; and since most of this commuting occurs during only two short rush periods per weekday, numerous bus drivers make nonproductive runs or actually sit idle much of the day (Zerega, 1981). Before instituting large-scale shifts in work schedules, however, it is necessary to conduct comprehensive, multifaceted pilot testing to define the most energy-efficient plan without disrupting family life, leisure activity, and other functions of a "healthy" community (Winett & Neale, 1981).

Activators for Environment Preservation

Activators (often referred to as stimulus control, prompting, response priming, or antecedent techniques) are environmental manipulations occurring before an opportunity for the target behavior, in an attempt to increase the frequency of desired target behaviors or decrease occurrences of undesired target responses. Activators can take the form of: 1) verbal or written messages, 2) awareness or education sessions, 3) modeling or demonstrations, 4) goal setting or commitment strategies, and 5) engineering or design procedures.

Verbal and written messages. Messages designed to promote green consumerism have been presented in television commercials, pamphlets, films, verbal instructions, and demonstrations(e.g., from peers, parents, teachers, or public officials) and on environmental displays (such as speed limit signs, feedback meters, beautified trash receptacles, and "energy saving" settings on appliance controls). Behavior change researchers have studied the impact of various antecedent messages on energy

conservation, litter control and resource recovery (see review by Geller et al., 1982) and have defined some basic characteristics of effective behavior change messages, including: 1) Messages should refer to specific behaviors (desirable or undesirable); 2) When the avoidance of undesirable behaviors is prompted (e.g., antilittering), an alternative desirable behavior should be specified that is relatively convenient; 3) Messages should be stated in polite language which does not threaten an individual's perceived freedom; 4) To be most effective, behavior change messages should occur in close proximity to opportunities to emit the desired or undesired target behavior; and 5) Messages announcing a certain consequence following the target behavior are more effective than those which do not specify a response consequence. The announcement of a pleasant consequence following the desired behavior (e.g., 10¢ per returnable bottle) is termed an <u>incentive</u>; whereas a <u>disincentive</u> is the announcement of a penalty if a certain undesirable behavior occurs (e.g., $100 fine for littering).

<u>Awareness and education</u>. Before attempting to change behavior, it is often important to offer potential participants a sound rationale for the behavior change program. A reasonable rationale can facilitate a participant's acceptance of attempts to motivate behavior change, and increase the probability that the person will develop a personal (or intrinsic) justification for the desired behavior and continue this behavior in the absence of extrinsic motivators (i.e., incentives or disincentives).

Applied psychologists (e.g, Lewin, 1958) have shown that education directed toward behavior change is more effective in small (i.e., 10-15 participants) rather than large groups, and that the education should include interactive demonstrations, discussions, and perhaps consensus building, rather than lecturing or showing films to a passive audience. In this regard, a well-known but not frequently practiced educational principle is relevant: TELL THEM AND THEY'LL FORGET--DEMONSTRATE AND THEY'LL REMEMBER--INVOLVE THEM AND THEY'LL UNDERSTAND.

Modeling and demonstrations. Modeling refers to the demonstration of specific behaviors for a target audience, and sometimes includes the display of a response-consequence relationship (or contingency) by presenting a pleasant or unpleasant consequence following a model's desirable or undesirable behavior (Bandura, 1977). Modeling can occur via live demonstrations or through television, video tape, or film. As an activator, modeling involves presenting a specific behavioral message, sometimes with the announcement of a reinforcement contingency (i.e., the model receives a reward following a specific desirable response) or a punishment contingency (i.e., the model receives a penalty after displaying undesirable behavior). Environmental protection programs have essentially ignored modeling strategies, yet modeling (through television or video tape) has the potential of reaching and influencing millions of residents. Richard Winett and his students(e.g., Winett et al., 1985) showed prominent increases in the conservation of electricity for home heating and cooling

after residents viewed video tape or T.V. presentations specifying the monetary benefits resulting from simple conservation behaviors by persons in situations similar to those of the viewers.

Commitment and goal setting. Commitment and goal-setting techniques request a verbal or written statement from individuals or groups, stipulating that they will emit a particular behavior (e.g., pick up litter or collect recyclables), stop emitting a certain behavior (e.g., littering), or reach a designated outcome as a result of one or more behaviors (e.g., use 35% less water, gas, or electricity). For example, "promise cards" could be available in a variety of settings which obligate the signers to engage in particular behaviors for a given period of time (cf. Geller & Lehman, 1991). Signed promise cards can become raffle tickets in a lottery, thus combining commitment and incentive approaches. Likewise, individuals or groups can set a particular environmental protection goal (e.g., in terms of a desired level of program participation, or savings from conservation efforts) and rewards can be offered for achieving the designated goals.

Some field researchers (e.g., Burn & Oskamp, 1986; Pardini & Katzev, 1984) found markedly increased participation in neighborhood recycling programs after residents signed cards pledging their participation; and the author and his students demonstrated substantial increases in vehicle safety belt use after "make it click" promise cards were distributed and signed at industrial sites, a community hospital, and throughout a university campus (see review by Geller et al., 1990).

Engineering and design procedures. Engineering and design activators for green consumerism involve the design or re-design of equipment, tools, or entire environmental settings to provide opportunities for environmental protective behaviors, or to facilitate (or encourage) the occurrence of such behaviors. For example, simple modifications in the design of an environmental setting or litter collection device can increase the convenience of litter control or resource recovery (e.g., by increasing the availability or size of trash cans or by providing large, obtrusive, partitioned receptacles for depositing different types of recyclables); or design/engineering interventions can help to motivate trash-can disposals or litter pick-up (e.g., by beautifying trash receptacles or environmental settings).

Some behavior analysts have shown remarkable litter control effects of simple modifications in the appearance, positioning, and availability of trash receptacles, and others showed household recycling advantages of a "recycle-it" trash receptacle with separate compartments for paper, glass, and cans (see reviews by Geller, 1986 and Geller et al., 1982). Also, Cope and Geller (1984) demonstrated litter-control benefits with a large "put-and -take litter bag dispenser that held 25,000 plastic litter bags. These investigators, however, found optimal benefits with their special trash receptacle when they combined this activator strategy with a consequence technique (i.e., soft drinks were given to fast food customers who used the litter bags dispensed by the special trash can).

Consequences for Environment Preservation

Behavior change interventions to promote green consumerism have been more effective when rewards or penalties were consequences for the occurrence of a target behavior or for a particular outcome resulting from the occurrence of one or more target behaviors. Consequences have been distinct stimuli (e.g., a monetary rebate, a self-photograph, a speeding ticket, a verbal commendation or condemnation), or opportunities to engage in certain behaviors (e.g., the privilege to add one's name to an "energy efficient" honor roll, use a preferred parking space, or attend a special litter control workshop).

Federal, state, and local governments have traditionally used disincentives and penalties to protect the environment. These behavior modification attempts usually take the form of laws or ordinances (e.g., fines for littering, illegal dumping, excessive water use, or for polluting water, land, or air), and to be effective, these techniques usually require extensive enforcement and legal personnel. Applied behavior analysts have de-emphasized the use of these approaches for large-scale behavior change, not only because enforcement is cumbersome and behavior change depends upon continual promotion of a disincentive (cf. Ross, 1982), but also because negative attitudes and a noncooperative mentality often accompany attempts to mandate behavior change through disincentive/penalty tactics.

Although behavior analysts consider it is most cost effective to attack behaviors directly (rather than focusing on attitude or mentality) when addressing environmental problems, they are concerned with the mentality and attitude formation or

change following behavior modification. A positive mentality associated with one's change in behavior maximizes the possibility for the desired behavior to become a norm--the socially accepted rule of action. A positive mentality is apt to follow incentive/reward strategies, since a positive reinforcement approach is generally perceived as "voluntary," and does not elicit perceived threats to individual freedom which can result from disincentive/penalty procedures (cf. Skinner, 1971). A perception of threat to one's freedom can actually lead to overt noncompliance with a mandate, resulting in pleasant feelings of re-gained personal freedom or control (Brehm, 1972). This phenomenon has been labeled "psychological reactance," and is illustrated in the scenario of the vehicle passenger throwing litter at the road sign which announces a $100 fine (i.e., a disincentive) for littering. Of course, drivers will only do this when it is unlikely the litter control ordinance can be enforced--that is, when a police officer is unavailable (which is necessarily most of the time).

Response-Contingent vs. Outcome-Contingent Consequences. The positive reinforcement consequences applied toward green consumerism have varied widely. Some rewards have been given following the performance of a particular desired behavior, whereas other reward contingencies did not specify a desired behavior but were contingent upon a given outcome (e.g., based on obtaining a certain level of energy conservation, water savings, or environmental cleanliness). As reviewed by Geller (1986, 1989) and Geller et al. (1982), the following *response*-contingent

consequences increased significantly the frequency of the environment-protective behavior targeted: 1) raffle tickets per specified amounts of paper delivered to a recycling center; 2) $5 if a resident's room thermostat was set at 74°F or higher in the summer and all doors and windows were closed when the air conditioner was on; 3) a coupon redeemable for a soft drink following litter deposits in a particular trash receptacle; 4) a merchandise token (exchangeable for goods and services at local businesses) for riding a particular bus; 5) a posted self-photograph and $1 for collecting a specially-marked item of litter; and 6) points redeemable for family outings and special favors following reduced use of home appliances.

Outcome-contingent consequences effective at increasing the frequency of behaviors beneficial to the environment have included: 1) a tour of a mental health facility for reducing vehicular miles of travel 20% or more; 2) 10¢ for cleaning a littered yard to a specified criterion; 3) $5 for averaging a 10% reduction in miles of travel over 28 days, and $2.50 for each additional 10% reduction up to 30%; 4) $2 per week for a 5% to 10% reduction in home-heating energy, $3 for an 11% to 20% reduction, and $5 per week for reductions greater than 20%; and 5) a cash return to apartment residents of 75% of energy savings from expected heating costs for a master-metered apartment complex (see reviews by Geller, 1986, 1989; Geller et al., 1982).

Feedback Interventions. A variety of energy conservation studies demonstrated beneficial effects of giving residents specific and regular feedback regarding their energy consumption

(e.g., see reviews by Geller, 1986, 1989; Geller et al., 1982). As an outcome consequence, feedback indicated amount of energy consumption in terms of kilowatt hours, cubic feet of gas, and/or monetary cost; and the clear display of energy use was rewarding (when the feedback reflected a savings in energy costs) or punishing (when the feedback implied an increase in consumption and costs).

Most of the feedback research by behavioral environmental psychologists targeted residential energy consumption, and for a majority of these field studies the feedback was given individually to particular residences. As reviewed by Geller (1986, 1989) and Geller et al. (1982), successful ways of delivering energy consumption feedback have included: 1) a special feedback card delivered to the home daily, weekly, or monthly; 2) a mechanical apparatus illiminating a light whenever electricity use exceeded 90% of the household's peak level; 3) an electronic feedback meter with a digital display of electricity cost per hour; 4) the use of a hygrothermograph to give readings of room temperature and humidity; and 5) self-contained training programs for teaching and motivating residents to read their own electric meters regularly and graph their energy consumption.

Some feedback research studies addressed the conservation of transportation energy. One field study showed vehicular miles of travel (vmt) to decrease as a function of public display of vmt per individual; and other studies found vehicular miles per gallon (mpg) to increase with a fuel flow meter indicating continuous mpg or gallons-per-hour consumption or with a public

display of mpg for short-run and long-haul truck drivers (see reviews by Geller, 1986 and Geller et al., 1982). One feedback intervention targeted litter control, and showed a 35% average reduction in ground litter following daily displays of litter counts on the front page of a community newspaper (Schnelle, Gendrich, Beegle, Thomas, & McNees, 1980).

Increasing the Impact of Intervention Programs

The author and his students have recently been researching a system for evaluating the impact of behavior change techniques to increase green consumerism (Geller, Needleman, & Randall, 1990) or improve driving behavior (Geller et al., 1990). This has been a formidable task, especially considering the variety of environmental and individual factors that can moderate intervention effectiveness. Frankly, we have only cracked the surface at developing a practical intervention impact model to evaluate the cost-effectiveness of large-scale intervention programs and guide the development of more effective procedures to change behaviors for environmental protection. This process, including a comprehensive literature review, has led to the identification of five factors which determine the behavior-change impact of an intervention program. Specifically, we propose that the *immediate* impact of an intervention program is a direct function of: 1) the transmission of specific *response information* (i.e., direction to emit a particular target behavior); 2) the amount of participant *involvement* promoted by the intervention, 3) the degree of *extrinsic control* defined by behavior modification procedures or response-consequence

contingencies (i.e., incentive/reward or disincentive/penalty strategies); 4) the degree of participant *social support* encouraged by the intervention procedures; and 5) each individual participant's perception of *self efficacy* (Bandura, 1989), *intrinsic control* (Deci, 1975), or *empowerment* (Byham & Cox, 1988), which we presume to be essentially the same inferred construct and reflect the degree to which an intervention program allows the participants to feel a sense of personal freedom or autonomy.

To derive impact or effectiveness scores for various behavior change interventions, Geller et al. (1990) defined each behavior change technique of an intervention program (a given program can apply several different behavior change techniques, as illustrated above), and then judged whether the procedures of each technique had the potential to include aspects of the five evaluation factors listed above, which are presumed to influence intervention impact. To do this, the following questions and issues per factor were addressed:

1. Response Information - Does the behavior change procedure have the *potential* to offer new and specific information relevant to the target behavior(s)? Whereas all techniques have the potential of providing new response information, the response information of an intervention program depends upon the particular message used for the behavior change technique and each program recipient's prior knowledge of the taget behavior. For example, written activators (e.g., signs or memos specifying desired behaviors) are often informative upon

initial exposure to viewers: however, after individuals become aware of the appropriate behavior, the same activator essentially becomes a *reminder* (with less response information upon repeated presentations). Consequently, determining an information score for a particular behavior change technique in an intervention program requires an estimate of the participants' prior knowledge of the target behavior(s) and a consideration of all techniques used in a program.

2. Involvement - Does the behavior change technique promote overt participant action relevant to the target behavior? This factor can be measured through direct observation of the amount of behavioral activity resulting from the intervention program, which is generally a direct function of the ratio between intervention agent and program participants (i.e., more intervention agents per participants usually promote greater program involvement).

3. Extrinsic Control - Does the behavior change procedure manipulate a response consequence (i.e., a reward or penalty) in order to influence a target behavior? While disincentive/penalty contingencies are perceived as exerting more extrinsic control than incentive/reward programs (Skinner, 1971), the amount of perceived enforcement of a disincentive/penalty program is also a powerful determinant of intervention impact (Ross, 1982).

4. Intrinsic Control - Does the technique offer an opportunity for personal choice or control? This factor is particularly important for estimating the long-term effects of an intervention program. That is, powerful extrinsic contingencies

(e.g., large penalties and consistent enforcement) may motivate extensive behavior change while the program is in effect; but if the intervention program is withdrawn, the undesirable behaviors are likely to return, unless the participants gain an internal justification for performing the target behaviors. However, the degree of internal justification for a target behavior has been found to vary inversely with the amount of extrinsic control exerted in an intervention program (e.g., Lepper, Green, & Nisbett, 1973).

5. Social Support - Does the behavior change procedure include opportunities for continual program-relevant support from program participants or other individuals or groups (e.g., family, friends, or work groups)? For example, interventions which promote group or team interaction (e.g., consensus-building exercises or group goal setting) or promote group/team performance (e.g., group competition feedback or rewards) can influence social or peer support (or peer pressure) among the participants, thereby increasing individual motivation to emit the target behavior(s). Also, if the consequences of meeting the criteria of a reward contingency include prizes valued by several family members, it is likely that social or family support will be activated and add to the impact of the intervention program.

This has been only an introduction to the challenge of developing a reliable and valid system to guide the development of behavior change intervention programs for green consumerism. Although this research is still preliminary, the mission of this venture is actually critical for solving the human behavior

aspects of environmental protection. The enormity and urgency of changing human behavior to improve (or perhaps only to maintain) quality of life on Planet Earth requires increasing resources and efforts to develop, evaluate, and implement intervention programs to change and maintain public behavior in desired directions. Thus, a reliable and valid taxonomy of behavior change techniques from which to choose particular intervention programs is urgently needed.

Concluding Commentary

Behavior change theory was first applied to environmental problems in the early 1970's, following the first Earth Day. During this period, numerous behavior change studies focused on the development and evaluation of interventions to reduce such environment-destructive behaviors as littering, lawn trampling, vehicle miles of travel, and the purchase of beverages in throwaway containers. Other behavioral studies showed how to increase such environment-preserving behaviors as picking up litter, collecting and delivering recyclables, composting, car pooling, and practicing a number of low-cost conservation techniques (e.g., installing insulation and shower-flow limiters, adjusting thermostat settings and wearing appropriate clothing, reducing the use of air conditioners, adjusting for peak-load demands, and increasing the use of mass transit). Several innovative behavior change techniques emerged from this research, many proving to be cost-effective for communitywide application. Although the results from this domain of behavior change research were encouraging, large-scale applications of the practical

intervention programs were not to be. The textbooks (Cone & Hayes, 1980; Geller et al., 1982) that reviewed this work were read by very few individuals besides students at the relatively few colleges or universities offering courses in environmental psychology. The failure to apply this knowledge is unfortunate, especially in light of the profound intensification of environmental destruction occurring since the first Earth Day.

There are many possible reasons for the lack of governmental, corporate, and societal interest in the behavioral environmental research of the 1970's, including ineffective dissemination of the practical research findings to agencies and audiences who were more intrigued with high technology and quick-fix approaches to solving environmental problems. Indeed, the theme of this behavior-change research -- conservation through low technology community-based intervention -- has been typically viewed as incompatible with big business and consumer convenience. This viewpoint was summarized succinctly by Clive Seligman, one of the behavior change researchers of the 70's:

> Unless business can make money from environmental products or politicians can get elected on environmental issues, or individuals can get personal satisfaction from experiencing environmental concern, then individuals and organizations will simply do what ever competes with environmentalism if they see the payoff as greater (C. Seligman, personal communication, March 8, 1990, cited in Geller, 1990).

National, state, and local governments have seemed content

to pass environmental control legislation and then penalize individual, group, or corporate infractions of such policy. This is partly because laws, policies, and ordinances are relatively quick and easy to implement and monitor; they represent the traditional governmental approach to behavior control, and the monetary fines from infractions provide funds for the mandating government, organization, or community (R. Foxx, personal communication, March 22, 1990, cited in Geller, 1990).

This paper has summarized a number of behavior change approaches to environmental protection that did not incorporate mandates, disincentives, or penalties--the techniques which should actually be used only as a last resort if public acceptance and a positive mentality are desired. Although this applied research focused on individuals in the residential/consumer sector, many of the lessons learned can be applied to the governmental/institutional and commercial/industrial sectors. Hopefully, Earth Day 1990 has begun an era of corporate and government concern and community empowerment for addressing environmental issues in sharp contrast to the corporate and individual greed of the 1980's, which occurred at the expense of community and environmental enhancement.

Unlike 20 years ago, it is now fashionable and profitable for companies to promote their products as being environmentally protective. Behavioral and social scientists can play an important role in increasing corporations' environmentally protective behavior by helping them develop more effective

environmental programs with the low-technology behavior change interventions reviewed in this conference paper. Along these same lines, the government should provide incentives and rewards (e.g., tax breaks) for companies demonstrating environment preserving practices, and should establish funding for researchers interested in studying the human element of environmental issues (i.e., green consumerism). Such research support was essentially nonexistent for the behavioral environmental psychologists of the 1970's, and thus most of these researchers and teachers abandoned the field in the early 1980's (Geller, 1990). There is cause for optimism, however, given the increased amount of media attention to environmental issues and the overwhelming expression of environmental concern by the public. This National Environmental Shopping Conference is just one of many examples of increased public support for green consumerism. These are promising signs that the culture is beginning to change toward a concern for environmental protection. Clearly, the Zeitgeist is ripe for governments, scientists, corporations, environmental groups, and citizens to work together to preserve the quality of environment we now enjoy. Green consumerism means emitting behaviors to protect our environment; and through such behaviors the public throwaway mentality will be replaced with a "green" mentality.

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You know, I'm not sure that green marketing deserves all the attention that its getting.

In the first place, to make a big fuss over some misleading green advertisements strikes me as a little oversensitive. Misleading advertising is a time-honored way of selling anything whose intrinsic merit is dubious. I don't know why we should expect advertising wizards to become saints just because their new target is the environment. Consumers will always have to parry with misleading advertising, just as we have survived run-ins with the pedlars of oat bran, psyllium, and innumerable cures for cancer and baldness.

In the second place, green marketing is really just a method of putting at ease those consumers who don't want to change their lives very much. As long as the rules of fair advertising are applied, green marketing can help people sort out the lesser of two, three, a dozen evils — it can help them find the brand of cereal whose box contains the most recycled paper. It can lead them to a garbage bag that uses some recycled plastic. It can inform them that some paper towels are made with recycled paper, while others are not. But it doesn't alert people to real and meaningful alternatives.

STARTING POINT

But hey — not to be a curmudgeon about it, I'll admit that green marketing is a starting place. At the very least, it lets people know there is an issue around cereal boxes, and garbage bags, and paper towels. It opens the floor for discussion of not only the merits of recycled or biodegradable this and that, but of the intrinsic value of the item itself. If green claims — justified or not — can pique the interest of shoppers, then they're doing a useful job.

Given the rather lawless and vague state of green marketing today, shoppers need to respond to every green claim with skepticism and questions. Before we heap the green-wrapped drink cups and diapers and dog food into our shopping carts, we need to pose questions like:

How *much* recycled content?

Is it post-consumer waste, or industrial scraps that have always been reused?

What good is degradable anything, if it's going to be mummified in a landfill?

Recyclable *where*? Can I recycle it without driving 30 miles and blowing clouds of exhaust into the air?

ROAD BLOCKS

It's a starting point, but it can't take us very far down that road. Just for fun, say green marketing has got people asking questions — educating themselves. Where does it lead these newly curious shoppers? Well, they realize that disposable diapers are a big garbage problem — one pound out of 50 is diapers. But as they look deeper into the question, they discover that washing cotton diapers has some environmental drawbacks, too. Writhing on the horns of a dilemma, this newly-aware consumer is a prime target for the new weapon in the advertising armory: Lifecycle analysis.

LCA purports to study the environmental impacts of producing, using and disposing of a given product, like a diaper or a coffee cup. Trouble is, no one can agree as to which points in the lifecycle should be included, what pollutants and energy sources should be counted, and how they should be compared. So it's a free-for-all at the moment. Procter & Gamble commissions a study that picks and chooses its variables and — Surprise! — announces that disposable diapers are the environmental good guys. The diaper services commission a study in response, which concludes that cotton diapers are going to save the world. The consumer scratches his head and thinks wistfully of the days when Dixie cups were considered a brilliant idea. The stakes have gone up (a LCA can cost $100,000), but it's the same old game.

Another road block to enlightenment is that green marketing only serves up part of the picture — the part that's favorable to the product. We've got to remember that in our economic system the Procter and Gambles and the McDonald's and the Dart cup companies are not in business to save the Earth, despite what their marketing campaigns may imply. Business is in business to sell things. If it doesn't sell things, it dies.

Now this is a funny position for a magazine editor to take, because if business doesn't sell things, then it doesn't buy advertisements and I don't get paid. But it's a funny time in a funny world. Because everything — no matter if it's a diaper, a water-saving showerhead, or a roll of recycled paper towels — because everything takes an environmental toll, the fact is, consumerism and environmentalism are on a collision course.

The perfect example: Consumers left and right have been chucking the plastic bottles of task-specific oven cleaner, drain unclogger, and air freshener, and they're reaching instead for humble old Arm & Hammer baking soda to do their cleaning. Consumers, on their own, took that step toward source-reduction: Fewer bottles and cans, and less toxic material in their homes, and down their drains. Arm & Hammer saw sales leap after Earth Day '90, thanks in great part to authors and journalists who were spreading the word on low-toxicity cleaning. How to harness that great, free momentum? Well, you capitalize on the market force, and sell people MORE STUFF. Arm & Hammer has test-marketed a plastic shaker of baking soda, to make cleaning more convenient.

See, if Arm & Hammer's first priority was the environment, followed by consumer convenience, then money, they wouldn't be marketing a plastic shaker can. They would have found room on a panel of the baking soda box to print a little diagram showing consumers how to punch holes in the lid of a peanut-butter jar. Now, that would be some green marketing! Selling the environment, not selling MORE STUFF.

But let's face it: Gillette is never going to run an ad saying "Hey, Colegate's little shaving bar uses 98% less packaging per shave, plus there are no hydrocarbon propellants in it — go buy some."

P&G isn't going to run a TV commercial that says "Gee, we thought about it and fabric softener is a pretty superfluous item that you can probably live without, so don't buy any more of our source-reduced Downy Refills.

So from an environmental standpoint, the fact that most green marketing only reveals a little bit of the picture means that we shouldn't expect to see a great big change in the status quo.

ANTIDOTES

But as I said before, green marketing, with all its smoke and mirrors, hardly qualifies as the downfall of civilization. Consumers are going to learn the rules of the game and the federal government is going to crack down on environmental language just as it has on nutrition language.

In the mean time, should consumers become so depressed by the situation that they're ready to hang themselves with biodegradable twine, there are two antidotes.

One is context: Yeah, a few billion diapers a year are worth debating. If we could all agree on which is the good guy and which is the bad guy, we could probably make some small dent in our resource use and in the waste stream.

But we're still driving cars, for gods sake. A survey of diaper studies shows a rough average of 3400 Btu of energy used over the lifecycle of each disposable diaper. Driving your Volvo burns that in half a mile. You could fling two diapers a minute out the window and just about keep up with the energy consumption of your car. Your half-hour commute gobbles up 60 diapers in a day. In terms of energy use alone, your annual 12,000 miles add up to 24,000 diapers — about 10 times what the baby uses.

Then there's pollution. Just driving your car — don't mention manufacturing it — you're blowing out five grams of air pollutants *per mile* — that's about a diaper's worth. And that's *not* counting CO2, which a car produces at a rate to rival its own weight each year, amounting to 13 percent of all CO2 emissions worldwide.

As long as we count the automobile, the king-sized refrigerator, and the daily hot shower among the sacred cows, using a couple disposable diapers probably shouldn't be construed as the eighth deadly sin.

The second antidote has to do with the term "consumer." What an odd designation. "I consume. I am a consumer." The concept is due for an overhaul — maybe something like "green conserver?" Sounds a little dorky, but you get the point.

And the mantra for these green conservers is simple — it's a four-word question to be repeated every time your arm reaches out to consume something, be it a fast-food burger, a can of shaving cream, or a trip to the movies:

DO I NEED THIS?

And everything — everything is fair game: Do I need disposable cups, even if they're recyclable polystyrene? Do I need aseptic juice boxes when I've got a Thermos? Do I need to drive to the store for a quart of milk, or can I walk? Do I need cereal that comes in a bag *and* a box? Do I need a new, improved shaker of baking soda? Do I need garbage bags? Do I need a shower today? Do I need another pair of shoes? Do I need to wash my clothes so often? Do I need a car? Do I need this? Do I really need this?

[TALK COPY]

HOUSEHOLD PRODUCTS AND ENVIRONMENTAL CONSUMERISM: MYTHS AND MISCONCEPTIONS

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[Slide 1]

[Good morning.] [Good afternoon.]

I really am quite pleased to be speaking to you today on the topic of environmental consumerism. It is a topic of intense personal as well as professional interest to me. I've been working on environmental health and safety issues for the household chemical products industry for more than 12 years, but I've also been an environmentalist for more than 20 years.

I have therefore viewed the recent environmental consumerism trend with positive anticipation. It is important that each of us knows that every decision we make has an effect on our environment, and seek to better understand what those effects are and what alternatives exist. Educating ourselves, and taking responsibility for our own actions, is an essential first step toward becoming a true environmentalist.

Unfortunately, my enthusiasm has been attenuated while reading hundreds of articles in magazines and newspapers on environmental consumerism. Virtually all have been based on misconceptions, misinformation, and an inadequate understanding of science. Those seeking to be good environmental consumers

based on these articles would be wrong half of the time, and confused all of the time.

It is my goal today to provide to you advice that is both practical and accurate on how to be an environmentally responsible consumer, especially as it relates to purchasing and using household chemical specialties products.

[Slide 2]

I believe that it is useful to think of environmental problems as falling into three major categories: pollution; resource depletion; and, public health.

The term pollution refers to any situation where something is present in an environmental media in higher concentrations than is desirable. Many billions of dollars have been spent controlling pollution, and our efforts have been remarkably successful.

Resource depletion refers to using up the Earth's most valuable assets, especially those that are "non-renewable". We will never use up all of our energy, but we are rapidly depleting the easiest-to-use energy resources. Our mineral resources, including the coal and petroleum that provide our basic chemical feedstocks, are also being rapidly depleted. The destruction of land resources is a major ecological problem in much of the world, as is the unnecessary loss of biological species. In addressing resource depletion, we have been far less successful, and this area will be our greatest long-term challenge.

Public health is a final aspect of our environment that is often forgotten when talking about environmental issues. But having a disease-free environment, maintaining an adequate food supply, and other such factors affecting the quality of life, are essential components of our goals of protecting the public health and the environment.

Scientists have begun work in just the past few years to develop techniques to assess all of the environmental effects of a given product or activity, from cradle to grave. This technique is now being called "life-cycle assessment." It promises, like carcinogen risk assessment, to be an extremely valuable technique for environmental scientists and other experts to make policy decisions. But it also is likely to be misused in conveying simplistic and misleading information to consumers. The results of a life-cycle assessment are meaningful only if one understands the dozens or even hundreds of "policy" assumptions that must be made with little or no scientific basis.

I would now like to describe for you some of the current myths and misperceptions of environmental consumerism.

[Slide 3]

The first myth is that natural chemicals are good for the environment, and synthetic, unnatural chemicals are bad for the environment. There is in actuality no correlation between naturalness and toxicity or environmental compatibility. Most toxic substances are found in nature, and many of the most toxic substances are natural. There is also absolutely no chemical or

toxicological difference in whether a given chemical compound is derived from natural sources or created synthetically. The fragrances used in air fresheners are the same compounds that are given off by flowers. There also appears to be no logical consistency in the use of the term "natural". Petroleum and coal occur quite naturally in the earth's crust; soap, on the other hand, is a compound synthesized by reacting a fatty acid with sodium hydroxide.

[Slide 4]

The second myth is that biodegradability is always an important positive environmental characteristic. If the compound is a very toxic one, and its degradation products are always less toxic, fast biodegradation can be an important characteristic. Household pesticides are generally designed to be as biodegradable as possible. All organic substances are biodegradable to varying degrees in various environmental media. Biodegradability is only occasionally an important issue, and there are virtually no problems regarding the biodegradability of today's household products. All household cleaners today, for instance, are readily biodegradable.

[Slide 5]

The third myth is the mistaken concept that some chemicals are toxic, and some are non-toxic, and we therefore could solve all of our environmental problems by just using the non-toxic ones. In reality, all chemicals are toxic at high enough doses. That the dose makes the poison is the most fundamental principle of toxicology. Strictly speaking, there is no such thing as non-toxic. In general, "non-toxic" is a meaningless and misleading term, and it becomes even more so when it is used to imply environmental compatibility. DDT, for instance, is of relatively low toxicity to mammals. Sodium hydroxide, on the other hand, is very toxic when in concentrated form, but is readily neutralized in the environment.

[Slide 6]

A fourth myth is that there are good chemicals and bad chemicals, and that pollution occurs when the bad chemicals are put in with the good chemicals that make up nature. Subscribers to this way of thinking have often expressed confused surprise that ozone could be a good thing in the stratosphere and a bad thing at ground level. Virtually every chemical known to man exists everywhere on Earth at *some* concentration, although often at a concentration too low to measure. In every eco-system, there are optimal levels for thousands of chemicals, above or below which is damaging to the system. Chemicals that are essential nutrients at low concentrations are deadly toxins at higher concentrations. There are no good or bad chemicals, only chemicals at the wrong concentration in the wrong place at the wrong time.

A primary manifestation of this myth is the concept that a

consumer needs to learn the names of all the "bad" chemicals, and read labels to make sure none of them are there. This reminds me of the belief in medieval times that the world was controlled by supernatural presences whom you could command if you could only learn their names. The dioxin-in-bleached-paper scare has now put chlorine bleach in the "bad chemical" list despite the fact that it's chemically impossible to form dioxin while washing clothes.

[Slide 7]

The next category of misconceptions also deals with the ingredients in the products. I see over and over again lists of the toxic substances that are supposedly in various products, and the accuracy rate is quite low. I've seen products with toxicities less then table salt listed as toxic substances. I've seen chlorobenzene cited as being in household cleaners, formaldehyde in air fresheners and disinfectants, phenol in wood polishes and laundry starch, "poisonous ammonia" in glass cleaners, para-dichlorobenzene in household toilet bowl cleaners, naphthalene and chlorinated solvents in carpet cleaners, and nitrobenzene in furniture polish. I've even seen impossible, nonexistent chemicals, like "diethylene or methylene glycol."

[Slide 8]

Next is the "old is better" myth. There are no products out there from days of old that are safer, more effective or better for the environment than today's products. Many millions of dollars have been spent to improve on the safety and environmental compatibility of the products our grandmothers and great grandmothers used.

[Slide 9]

Some of the more perplexing myths have been those involving homemade products. There has been a proliferation of material in recent years urging consumers to formulate their own products. Seldom if ever are these formulations better for the environment, and usually they don't work very well either. One of the more ludicrous examples is the use of baking soda, which is sodium bicarbonate, with vinegar, which is dilute acetic acid, as a drain cleaner. When baking soda and vinegar are mixed, they neutralize each other, forming sodium acetate, water, and carbon dioxide. The mixture foams and bubbles, giving the *appearance* of doing something, but actually doing nothing.

As alternative product misinformation has proliferated, our industry has become concerned that consumers might be led to such unsafe practices as mixing chlorine bleach with ammonia or acids -- I've actually seen recommended formulations containing both chlorine bleach and vinegar -- or creating health hazards by using things like mayonnaise or milk and encouraging bacterial growth, or using ineffective products for disinfection or killing disease-carrying pests. Consumers are being encouraged to mix up products of unknown toxicity and stability, and put them in

containers that are without adequate labeling, and without child-resistant closures.

[Slide 10]

Literally dozens of small companies in recent years have jumped on the environmental bandwagon by marketing "green" products, including chemical specialties products that they claim to be better for the environment. The claims run the gamut from "non-toxic" to "biodegradable" to "all natural" to "contains no chemical X." I have yet to find a "green" chemical product that is demonstrably better for the environment than other more readily available commercial products.

[Slide 11]

There's a whole slew of misinformation out there about aerosol products. Possibly the most common is that aerosols contain CFCs, which may deplete stratospheric ozone. In actuality, U.S. aerosols have not contained any CFCs since 1978, except for a few essential-use exemptions such as asthma inhalers. Manufacturers had to bring back their "No CFCs" label claims to try to stem the tide of misinformation. Another common aerosol myth is that they are not recyclable. In reality, both steel and aluminum aerosol cans can be recycled readily with other steel and aluminum containers. Another is that pump sprays are environmentally superior to aerosols, since the propellant is just wastefully sprayed into the environment. In fact, aerosols are the most effective, efficient, and environmentally compatible form for many types of products.

[Slide 12]

There is another category of myths that concern product labeling. One is that companies don't have to label for all of the hazards of a product, especially not the chronic hazards. In reality, all chemical consumer products are covered by federal regulations under the jurisdiction of the EPA, FDA, or CPSC that require warnings regarding all of the hazards of the product, both acute and chronic. Another myth is that companies hide behind trade secret claims to avoid listing all of their ingredients on the labels in order to foil good-chemical-bad-chemical comparisons. Then there's the myth that the "inert ingredients" on pesticide labels are actually insidious toxicants. But perhaps my favorite is the complaint that companies that *do* provide ingredients on their label try to hide their toxic ingredients by giving them new names.

[Slide 13]

The final category of myths I'd like to mention involve product testing. The two major myths in the category are that: 1) that consumer products are not tested for safety and sent out into society and the environment without adequate testing; and, 2) that consumer products companies conduct excessive animal

testing that causes unnecessary animal suffering. It should be obvious to everyone that at least one of these claims is in error. In reality, they both are. Products are fully evaluated, but using the minimum of animals, under conditions as humane as possible. The companies that claim "cruelty free" on their labels are simply relying on the work by other companies to know their products are safe. Federal laws and regulations do not allow untested products to be marketed, nor do current product liability laws.

[Slide 14]

Before I get to my practical advise on being a good environmental consumer, I'd like to point out some of the environmental benefits that can be gained from the use of household chemical specialties.

First, there's extending the life of durable goods. Each and every durable item you own was manufactured at an environmental cost in terms on pollution, resource depletion, and the public health. Products that maintain what you own, and extend its effective life, can accrue significant environmental benefits.

Second, many products play critical roles in providing a sanitary environment and protecting the public health. Cleaners, sanitizers and disinfectants fall into this category.

The third benefit involves controlling disease vectors, such as various insects and rodents, a principal benefit of household pesticides.

Fourth is the actual treatment of diseases, the primary role of drugs and pharmaceutical products.

Fifth, products that help you to maintain your automobile, such as carburetor cleaners, fuel injector cleaners, brake cleaners, and crankcase additives, can have a very important effect in lowering automobile emissions, as well as in improving automotive safety.

Two other areas of environmental benefits are increasing the food supply and the preservation of natural vegetation, a role played by the proper use of various pesticides and fertilizers. And finally, there are the undeniable but difficult to quantify benefits that are best described as quality of life.

[Slide 15]

Now, the practical advice. There are no simple easy answers, but these are eight things that I believe may be the most important actions that you can take in regards to your purchase and use of household chemical products in order to be a good environmental consumer.

First, buy effective, efficient products, products that work. Products that fail to provide the environmental benefits that I just mentioned, or work inefficiently so that you have to use more, waste the energy and resources expended to produce them. Don't mix up your own products. Effective, efficient products are environmentally friendly.

Second, buy the right amount. It does no good to buy a

larger amount than you need, and end up storing the rest until it is no longer usable. Buying products in containers too small means buying excess packaging. The right amount is the best amount.

Third, read the label carefully, and use the product according to the label instructions. This will result in the most efficient use of the product, and minimize waste.

Fourth, recycle everything you can, and encourage expansion of your local facilities. Recycle plastic containers as well as metal containers (and don't forget your empty aerosols). Also remember to recycle automotive batteries, motor oil, antifreeze and other used automotive fluids.

Fifth, dispose of unused products properly. Give away usable products you don't need, and recycle anything you can, but if you must dispose, do it right. Many products can be diluted and poured down the drain. Others can be wrapped in newspaper and thrown in the trash. If you have really hazardous materials, find out if there are local programs to collect residential hazardous waste.

Sixth, maintain your car. Whether you do it yourself or have a professional do it, there is no more important step you can take. I think Joel Makower, publisher of the *Green Newsletter* summed it up well when he said, "For all the debates over plastic versus paper, juice boxes, aerosols, those differences pale when compared to the energy used and pollution generated by getting into your poorly tuned car with the underinflated tires, and driving to and from the supermarket."

Seventh, take care of your durables. Don't clutter up our landfills for want of proper care and maintenance of your appliances, clothes, and household furnishings.

And finally, if you own land, or have land in your care, be a good steward. There is no more valuable resource than the land we live on, the little bit of nature with which we are personally entrusted. Every cubic foot of soil, every plant and animal, is part of the valuable legacy we leave to our children, and to our children's children.

Thank you very much.

* * *

HOUSEHOLD PRODUCTS

AND ENVIRONMENTAL CONSUMERISM:

MYTHS AND MISCONCEPTIONS

D. Douglas Fratz

Director of Scientific Affairs

Chemical Specialties Manufacturers Association

Washington, D.C.

Second National Environmental Shopping Conference

Baltimore, Maryland

September 30, 1991

CLASSIFYING ENVIRONMENTAL PROBLEMS

Pollution

Land
Air
Water

Resource Depletion

Energy
Minerals
Land
Species

Public Health

Disease Control
Food Supply
Quality of Life

ENVIRONMENTAL CONSUMERISM MYTHS AND MISPERCEPTIONS

Natural vs. Synthetic

ENVIRONMENTAL CONSUMERISM MYTHS AND MISPERCEPTIONS

Natural vs. Synthetic

Biodegradable vs. Nonbiodegradable

ENVIRONMENTAL CONSUMERISM MYTHS AND MISPERCEPTIONS

Natural vs. Synthetic

Biodegradable vs. Nonbiodegradable

Toxic vs. Nontoxic

ENVIRONMENTAL CONSUMERISM MYTHS AND MISPERCEPTIONS

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Biodegradable vs. Nonbiodegradable

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Good Chemicals vs. Bad Chemicals

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Good Chemicals vs. Bad Chemicals

Mythical Ingredients

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Old is Better

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Homemade Products Myths

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Green Products Myths

Aerosol Products Myths

Product Labeling Myths

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Green Products Myths

Aerosol Products Myths

Product Labeling Myths

Product Testing Myths

ENVIRONMENTAL BENEFITS

OF HOUSEHOLD CHEMICAL PRODUCTS

Extending the Life of Durable Goods

Sanitation and Public Health

Controlling Disease Vectors

Treatment of Diseases

Lowering Automotive Emissions

Increasing Food Supply

Nature Preservation

Quality of Life

STEPS TOWARD BEING A

GOOD ENVIRONMENTAL CONSUMER

Buy Effective Products

Buy the Right Amount

Use According to the Label

Recycle

Dispose Properly

Maintain Your Car

Take Care of Your Durable Goods

Take Care of Your Land

POTENTIAL HAZARDS OF HOUSEHOLD PRODUCTS

TRACY BONE
U.S. EPA, OFFICE OF SOLID WASTE

There are several ways that household products can, potentially, threaten human health or the environment. Household products can adversely impact our lives through contamination of: our homes, water systems, air, and the municipal solid wastestream. How do you decide what to buy and what not to buy? Unfortunately there is not a simple list of good and bad products because there is no simple answer. The way you intend to use, storage and disposal can be as important to predict the impact of a product as is evaluating the chemical constituents in the product.

What are some of the potential problems?

In a home, household products have been the cause of accidental poisonings, fires, and poor air quality. A study done by EPA's Indoor Air Division showed higher concentrations of VOC's and pesticides within most of the homes than outside the home. These concentrations were not necessarily high enough to pose a significant risk to the occupants.

Household products can contaminate water systems through various routes. Run-off from our neighborhoods, streets, and lawns may then pass through storm drains into rivers, creeks, bays and oceans. Run-off may contain automotive products, pesticides, detergents, and paint products. Impact from contaminates may cause an effect ranging from unpleasant odors, damage to property, even fish kills.

Groundwater can be contaminated through releases from septic systems, sewage plant overflows or leachate from landfills. In a report dating 1984, EPA estimated that only 40% of septic systems function properly. Septic tanks are the most commonly cited source of contamination.

Municipal solid waste landfills and combusters can release contamination from household hazardous waste disposed within them. Landfills can contribute to poor air quality if they emit VOC's. 20% of the sites on the National Priorities List are municipal solid waste landfills, though some of them contain hazardous waste from sources other than households as well as municipal waste. Contact with household hazardous waste has caused injury to sanitation workers and damage to their equipment. Combusters release some toxins from HHW to the environment during combustion or from the ash after the ash is landfilled.

Are Household products toxic or not?

Many people are looking at the toxicity of household products and trying to find ways to reduce toxicity. The EPA Office of Toxic Substances has a program which is working to improve indoor air. They are prioritizing chemicals to be studied for their impact and alternatives to be used in their place. The EPA Office of Solid Waste is prioritizing chemicals that pose a risk through

disposal in the municipal solid waste stream.

Some manufacturers have taken strides to reduce the toxicity of their products. For example, Everready has reduced the mercury content of their batteries to less than 0.025%, by weight.

How do you decide what to buy?

This is a very difficult process and may lead to different answers for each person. must make their own decisions. The EPA has a few research programs underway looking at the toxicity questions. Nonetheless, you should always look at how you intend to use, store and dispose of the product at the time of purchase.

Many products contain hazardous constituents that are not a problem when used properly, but can cause a problem when disposed. The method of disposal may be the deciding factor in its environmental impact. For example, antifreeze is highly poisonous to animals, so if it is left outside or poured on the ground or otherwise is available to wildlife, it could do great harm. Antifreeze flushed into a septic system could do harm to the septic system. However, some sewage treatment plants can handle antifreeze easily. Since most of us do not know about the tertiary treatment capabilities our local treatment plant, I am not suggesting you flush antifreeze down the toilet. If available, antifreeze should be given to a recycling program. The point is, depending on the mode of disposal, antifreeze can have very a different impact on the environment.

The same can be said for storage and use. For example, you might find a great deal on paint and stock up to take care of all your paint needs for the next few years. If you store it in the garage where it freezes several times the paint becomes useless and you have household hazardous waste to get rid of.

How do I find out about these products?

There are several places to go for information. The closest source is the label on the product. EPA requires all pesticide labels to have information on the use, storage and disposal of the product. The label must also provide limited ingredient information as well as a toxicity warning statement. The Consumer product Safety Commission regulates other, nonpesticidal product labeling.

The EPA has a few hotlines that can provide some information on products and regulations:

Pesticide Hotline 1-(800)858-7378
RCRA Hotline 1-(800)424-9346
Safe Drinking Water 1-(800)426-4691

There are various government offices that can provide you with information: State and local solid waste agencies, health departments, regional EPA offices. They can tell you about household hazardous waste collection programs, and disposal alternatives.

There are a plethora of publications available. The EPA has publications on oil recycling, household hazardous waste, as well as a soon to be published manual for doing a household collection program. These publications are free and you can get them by calling the RCRA Hotline, listed above. Various other groups have publications including: Women's League of Voters, State Agencies, various nonprofit groups and the Waste Watch Center. Call any of the people listed above and they will be glad to give you information to help you make your decision.

LAURA ROWELL

Environmental Costs of Convenience: Beyond the Price Tag

Pennsylvania Resources Council, Inc
September 30, 1991

GOOD MORNING! MY NAME IS LAURA ROWELL, AND I SERVE AS GOVERNMENT RELATIONS MANAGER FOR SWEETHEART CUP COMPANY--THE NATION'S LARGEST MANUFACTURER OF PAPER AND PLASTIC FOODSERVICE DISPOSABLES. MY SHORT TITLE IS "MYTH BUSTER." THAT'S BECAUSE I AM RESPONSIBLE FOR WORKING WITH STATE AND LOCAL GOVERNMENTS AROUND THE COUNTRY TO DEVELOP REASONABLE, RESPONSIBLE LEGISLATION BASED ON FACT NOT FICTION.

IF YOU TOOK A CASUAL POLL OF PEOPLE ON THE STREET, MOST WILL TELL YOU THAT OUR SOLID WASTE PROBLEMS HAVE BEEN CAUSED BY THE FAST FOOD INDUSTRY. THAT CONVENIENT FOODSERVICE PACKAGING IS KILLING THIS PLANET. THAT IT IS THE SOLE REASON WE'RE DEPLETING OUR RAIN FORESTS, WHY WE HAVE A HOLE IN OUR OZONE LAYER, AND WHY WE ARE RUNNING OUT OF LANDFILL SPACE.

YET NOTHING COULD BE FURTHER FROM THE TRUTH. ACCORDING TO FRANKLIN ASSOCIATES, THE CONSULTANT TO THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, THE VOLUME OF PAPER AND PLASTIC CUPS, PLATES AND OTHER FOODSERVICE PRODUCTS DISCARDED INTO OUR WASTE STREAM IS ACTUALLY LESS THAN 2 PERCENT OF THE ENTIRE WASTE STREAM; COMPARE THIS TO FOOD AND YARD WASTES AT 13.5 PERCENT, CLOTHING AND FOOTWARE AT 4.5

PERCENT, AND NEWSPAPERS AT 5.5 PERCENT.(1) YOU COULD COMPLETELY ABANDON THE USE OF FAST FOOD PACKAGING TOMORROW AND NOT MAKE A DENT IN YOUR SOLID WASTE STREAM.

SEVERAL YEARS AGO, WHEN MANUFACTURERS OF FOAM FOOD-SERVICE PRODUCTS--UNAWARE OF THE POTENTIAL FOR ENVIRONMENTAL IMPACT--USED FULLY-HALOGENATED CFC'S, THEIR TOTAL CONTRIBUTION WAS ONLY 2 PERCENT OF THE CFC'S USED DOMESTICALLY. THEN AS NOW, THE MAJORITY OF CFC'S IMPACTING OUR OZONE LAYER CAME FROM AUTOMOBILE AND HOME AIR CONDITIONERS AND REFRIGERATORS. BUT EVEN THOUGH WE WEREN'T THE PROBLEM, WE WERE STILL PART OF THE PROBLEM. AS A RESULT, THE FOODSERVICE INDUSTRY WAS THE FIRST INDUSTRY IN THE NATION TO RESPOND TO THIS ENVIRONMENTAL THREAT BY PHASING OUT OF THE USE OF HARMFUL CFC'S IN 1988. IN FACT, OUR INDUSTRY WAS THE RECIPIENT OF THE USEPA'S STRATOSPHERIC OZONE PROTECTION AWARD FOR LEADERSHIP IN PHASING OUT OZONE DEPLETING SUBSTANCES.

SO WHAT IS THE PROBLEM! WELL, FIRST OF ALL, WE, AS AN INDUSTRY, HAVE DONE A VERY POOR JOB OF TELLING OUR STORY. WE HAVE LET OTHERS TELL OUR STORIES FOR US--WITH DISASTROUS RESULTS! SECONDLY, WE HAVE ALLOWED THE PUBLIC TO BE CONVINCED THAT INDUSTRY, ALONE, IS RESPONSIBLE FOR THE WASTE CRISIS AND THAT ONLY INDUSTRY CAN SOLVE THIS PROBLEM. THIS IS EVIDENCED IN A ROPER POLL WHICH INDICATED THAT 6 IN 10 PEOPLE BLAMED BUSINESS FOR NOT DEVELOPING ENVIRONMENTALLY

SOUND CONSUMER PRODUCTS; YET, ALMOST THE SAME PERCENTAGE SAID THAT AMERICAN CONSUMERS WERE NOT WILLING TO BEAR THE ADDITIONAL COST FOR THOSE PRODUCTS.(2)

THE RISE OF CONVENIENCE IN THE FORM OF FAST FOOD RESTAURANTS, TAKE OUT CAFETERIAS, INSTANT MICROWAVABLE TV DINNERS IS SIMPLY A BY-PRODUCT OF A CHANGING, PROGRESSIVE SOCIETY. TWO FAMILY INCOMES, A FASTER-PACED LIFESTYLE, THESE DRIVE THE NEED FOR CONVENIENCE--NOT THE OTHER WAY AROUND.

A RECENT WALL STREET JOURNAL POLL REVEALED THAT MANY SELF-STYLED ENVIRONMENTALISTS DRAW THE LINE AT CONVENIENCE. ONE FAMILY THEY INTERVIEWED DROVE 20 MILES TO RECYCLE THEIR TRASH, BUT CONTINUED TO USE DISPOSABLE DIAPERS.(3)

AND, IN THE ROPER POLL MENTIONED EARLIER, 70 PERCENT OF THOSE POLLED RESPONDING FELT THAT CONSUMERS ARE MORE INTERESTED IN CONVENIENCE THAN ON ENVIRONMENTAL PROBLEMS.(2) THESE REPORTS ARE SIMILAR TO A GALLOP POLL WHICH INDICATED THAT, ALTHOUGH MOST AMERICANS CONSIDER THEMSELVES ENVIRONMENTALISTS, 66 PERCENT CANNOT NAME A SINGLE COMPANY THEY THINK HAS ENVIRONMENTALLY RESPONSIBLE PACKAGING OR PRODUCTS.(4)

TO QUOTE FROM THE WALL STREET JOURNAL ARTICLE, "WHAT EMERGES FROM THE POLL AND FROM INTERVIEWS WITH INDIVIDUAL CONSUMERS ACROSS THE COUNTY IS THE FACT THAT ENVIRONMENTAL CONCERNS HAVE BECOME A SIGNIFICANT FACTOR IN BUYING

DECISIONS--BUT ONE FACTOR OUT OF SEVERAL MORE TRADITIONAL CONCERNS, SUCH AS PRICE AND CONVENIENCE, THAT STILL WEIGH HEAVILY WITH CONSUMERS."

SO, WHAT ARE THE ENVIRONMENTAL COSTS OF CONVENIENCE. THE POLL RESULTS TELL US THAT MOST CONSUMERS, ALTHOUGH CONSIDERING THEMSELVES TO BE ENVIRONMENTALISTS, ARE PUTTING CONVENIENCE BEFORE ENVIRONMENTAL CONCERNS. MAYBE, INSTEAD, WE SHOULD BE ASKING WHY THESE PRODUCTS WERE DEVELOPED IN THE FIRST PLACE, AND WHAT IS THE ENVIRONMENTAL COST OF--FOR LACK OF A BETTER WORD--INCONVENIENCE.

ASK A HEALTH PROFESSIONAL, AND THEY WILL TELL YOU THAT THE MOST IMPORTANT REASON FOR THE EXISTENCE OF DISPOSABLE FOODSERVICE PRODUCTS IS FOR HEALTH REASONS--NOT CONVENIENCE. IN NUMEROUS STUDIES, DISPOSABLES HAVE BEEN PROVEN TO BE MORE SANITARY AND CARRY FAR FEWER BACTERIA THAN REUSABLE DISHWARE.(5) A RESOLUTION PASSED BY THE INTERNATIONAL ASSOCIATION OF MILK, FOOD AND ENVIRONMENTAL SANITARIANS STATES THAT "THE STRATEGY OF MINIMIZING THE USE OF SINGLE SERVICE IN ORDER TO ALLEVIATE THE SOLID WASTE AND LITTER PROBLEMS IS A REGRESSIVE STEP IN FOOD PROTECTION AND CONTRARY TO THE INTERESTS OF PUBLIC HEALTH."(6) THE NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION ECHOED THIS CONCERN IN THEIR OWN RESOLUTION, STATING THAT: "RESTRICTING THE USE OF PAPER AND PLASTIC CUPS, PLATES AND CONTAINERS WILL HAVE A MINIMAL

EFFECT UPON THE MUNICIPAL SOLID WASTE PROBLEM, BUT A POTENTIALLY ADVERSE IMPACT UPON THE EXTRA MEASURE OF DISEASE PREVENTION THAT DISPOSABLES BRING TO CERTAIN FOODSERVICE SYSTEMS."(7) IN FACT, THE INVENTION OF THE PAPER CUP WAS CAUSED BY A DOCTOR WHO, WHILE TRAVELING BY TRAIN, NOTICED THAT PASSENGERS--INCLUDING CHILDREN--WERE DRINKING OUT OF THE SAME, COMMUNITY CUP AS OTHER TRAVELERS WITH OBVIOUS COMMUNICABLE DISEASES.

ANOTHER, COST OF "INCONVENIENCE" IS THE ENERGY AND WATER REQUIREMENTS NEEDED FOR REUSABLES. ACCORDING TO THE FOODSERVICE AND PACKAGING INSTITUTE, A CAFETERIA USING DISPOSABLES WILL SAVE 71 GALLONS OF WATER FOR EVERY 100 CUSTOMERS SERVED.(8) AND THE NATIONAL RESTAURANT ASSOCIATION REPORTS THAT 13 PERCENT OF A RESTAURANT'S ENERGY CONSUMPTION CAN BE ATTRIBUTED TO DISHWASHER OPERATIONS.(9) WATER AND ENERGY SAVINGS ASIDE, THE IMPACT OF THE DETERGENTS ALONE--WHICH UTILIZE VARIED CHEMICAL COMPOUNDS--IS SUBSTANTIAL.

ALSO, LET'S NOT FORGET THAT APPROXIMATELY 60 PERCENT OF A FAST FOOD RESTAURANT'S BUSINESS LEAVES THE RESTAURANT IN THE FORM OF CARRY-OUT.

ALTHOUGH "CONVENIENT", CARRYOUT, FAST-FOOD, AND TV DINNERS CAN ACTUALLY REDUCE THE AMOUNT OF WASTE GENERATED BY A FAMILY. A REPORT ON A PACKAGING STUDY PERFORMED BY BILL RATHJE--THE ARIZONA GARBOLOGIST AND HARVARD-TRAINED

ARCHAEOLOGIST RECENTLY FEATURED IN NATIONAL GEOGRAPHIC--STATED THAT THE AVERAGE HOUSEHOLD IN MEXICO CITY DISCARDED 40 PERCENT MORE REFUSE EACH DAY THAN THE AVERAGE U. S. HOUSEHOLD. THE AVERAGE AMOUNT OF FOOD WASTE FOUND IN OUR GARBAGE IS ABOUT HALF THAT FOUND IN MEXICO CITY.(10)

WHY WOULD THIS BE? WELL, FRESH FOOD COMES WITH ITS OWN WASTE PRODUCTS ATTACHED--BANANA, APPLE AND ORANGE PEELS; PEA PODS; MEAT FAT AND BONES. WITH PREPACKAGED OR CARRY-OUT FOOD, YOU HAVE ONLY THE PACKAGING. A STUDY ENTITLED "PACKAGING IN AMERICA IN THE 1990'S", SPONSORED BY THE INSTITUTE OF PACKAGING PROFESSIONALS, NOTED THAT IN PREPARED OR PREPACKAGED FOODS, THE WASTE PRODUCTS ARE GENERALLY CONVERTED INTO BY-PRODUCTS, SUCH AS ANIMAL FEED, AND NOT WASTED. THE REPORT STATED THAT "IN NEW YORK CITY ALONE, THE USE OF PACKAGING FOR JUST THE NINE VEGETABLES [LISTED] ANNUALLY ELIMINATES THE NEED TO DISPOSE OF OVER 100,000 TONS OF MUNICIPAL SOLID WASTE."(10)

SO WHAT IS THE ANSWER? WELL, THAT IS THE MESSAGE I WANT TO BRING TO YOU TODAY. WHILE ITEMS USED FOR FOODSERVICE ARE A MINOR CONTRIBUTOR TO THE WASTE STREAM, THEIR MANUFACTURERS INTEND TO BE A MAJOR PLAYER.

ALTHOUGH EVERYTHING WE DO IMPACTS THE ENVIRONMENT . . . OUR GOAL IS TO MINIMIZE THAT IMPACT . . . AND ONE ANSWER IS RECYCLING. POLYSTYRENE FOAM AND OTHER PLASTIC DISPOSABLES

ARE COMPLETELY RECYCLABLE. THE NATIONAL POLYSTYRENE RECYCLING COMPANY (NPRC) HAS PROVEN THIS FACT WITH THEIR PLANT IN MASSACHUSETTS, PLASTICS AGAIN, WHICH WAS SO SUCCESSFUL THAT IT HAD TO RELOCATE THEIR OPERATION TO LARGER QUARTERS IN BRIDGEPORT, NEW JERSEY. THE NEW PLANT WILL RECYCLE OVER THIRTEEN MILLION POUNDS OF POLYSTYRENE FROM THE NORTHEAST'S SCHOOLS, RESTAURANTS, BUSINESS CAFETERIAS, AND PRISONS. THE NPRC IS EXPANDING UPON THIS SUCCESS WITH MORE FACILITIES LOCATED IN BROOKLYN, NEW YORK; SAN FRANCISCO AND LOS ANGELES, CALIFORNIA; AND CHICAGO, ILLINOIS.

COMPOSTING, AN AGE-OLD OPTION THAT IS GAINING A NEW-FOUND POPULARITY IS A RECYCLING OPTION FOR SOILED PAPER PACKAGING. MIXED WITH OTHER ORGANIC WASTE, SUCH AS YARD WASTE, SEWAGE SLUDGE, AND SAWDUST, IT FORMS A RICH COMPOST THAT CAN BE DISTRIBUTED TO AREA FARMS, NURSERIES, AND LOCAL BEAUTIFICATION PROJECTS. COMPOSTING PAPER FOODSERVICE PRODUCTS IS IN ITS INFANCY; BUT I PREDICT THAT IT WILL GROW INTO AN EXTREMELY VIABLE WASTE DISPOSAL OPTION DURING THE 1990'S. COMPOSTING WAS EVEN FEATURED AS SUCH THIS MORNING ON "GOOD MORNING AMERICA." WHAT BETTER ENDORSEMENT COULD YOU WANT?

ONE OPTION THAT IS NOT AN ANSWER IS DEGRADABILITY. BILL RATHJE, THE ARIZONA GARBOLOGIST MENTIONED EARLIER, SAYS THAT THERE ARE TWO MYTHS AMERICANS WONT LET GO OF--ONE IS SANTA

CLAUS, THE OTHER IS DEGRADABILITY. RATHJE'S EXCAVATIONS HAVE FOUND NEWSPAPERS THAT WERE STILL READABLE AFTER 30 YEARS IN A LANDFILL, CARROTS THAT WERE STILL ORANGE AND GRASS CLIPPINGS THAT WERE STILL GREEN AFTER FIVE YEARS. ONE OF HIS MOST INTERESTING FINDS WAS A HOT DOG, BURIED FOR 15 YEARS, THAT WAS STILL BIOLOGICALLY EDIBLE.

REQUIRING THAT PLASTIC PRODUCTS DEGRADE WILL NOT HELP OUR LANDFILLS, IN FACT IT WILL HURT PLASTIC RECYCLING PROGRAMS. TO ENSURE DEGRADABILITY, MANUFACTURERS HAVE TO INTRODUCE ADDITIVES TO THE PLASTIC WHICH WILL CAUSE IT TO BREAK DOWN WHEN EXPOSED TO AIR, MOISTURE, OR LIGHT. ACCORDING TO THE ENVIRONMENTAL DEFENSE FUND AND OTHER ENVIRONMENTAL GROUPS, THESE ADDITIVES COMPLICATE THE RECYCLING PROCESS AND COULD HARM THE QUALITY OF PRODUCTS MADE WITH RECYCLED PLASTIC. IN ADDITION, THE FOOD AND DRUG ADMINISTRATION HAS NOT LICENSED ADDITIVES FOR USE IN FOOD CONTACT PRODUCTS--NOR ARE THEY EXPECTED TO IN THE IMMEDIATE FUTURE.

IN ADDITION TO THE DISPOSAL ASPECTS OF FOODSERVICE PRODUCTS, THERE IS ALSO A LOT OF CONCERN WITH THE MAKEUP OF <u>ALL</u> PRODUCTS AND PACKAGING. THE COUNCIL OF NORTHEAST GOVERNORS (ALSO KNOWN AS CONEG) DRAFTED MODEL LEGISLATION WHICH BANS CERTAIN HEAVY METALS FROM PACKAGING. THE CONEG MODEL CALLS FOR A REDUCTION IN LEAD, MERCURY, CADMIUM, AND

HEXAVALENT CHROMIUM FROM 400 PARTS PER MILLION WITHIN TWO YEARS OF PASSAGE TO 100 PPM WITHIN FOUR YEARS. SEVERAL STATES HAVE ADOPTED THE CONEG MODEL.

SWEETHEART CUP, AND OTHER MANUFACTURERS, HAVE VIRTUALLY ELIMINATED THE USE OF SOLVENT-BASED INKS, WHICH CAN CONTAIN THESE HEAVY METALS, IN OUR PRODUCTS. THIS MOVE ALLOWS FOODSERVICE MANUFACTURERS TO MEET CONEG'S 100 PPM LIMITATION NOW--NOT WAIT FOUR YEARS.

SO, WHAT ARE THE ENVIRONMENTAL COSTS OF CONVENIENCE?

WHEN WE LOOK AT FOODSERVICE DISPOSABLES, WE FIND THAT THE ENVIRONMENTAL IMPACT ISN'T AS REAL AS THE PUBLIC THINKS. AND WE FIND THAT ELIMINATING OR REDUCING THE AMOUNT OF DISPOSABLES COULD PRODUCE NEGATIVE RESULTS IN THE AREAS OF SANITATION, WATER AND ENERGY USE, AND ACTUALLY INCREASE THE AMOUNT OF WASTE WE GENERATE.

SHOULD THAT LET DISPOSABLES "OFF-THE-HOOK" IN RELATION TO THE ROLE THEY PLAY IN WASTE MANAGEMENT. ABSOLUTELY NOT! AS WITH ANY CONTRIBUTOR TO THE WASTE STREAM, WE HAVE A RESPONSIBILITY TO REDUCE THE AMOUNT OF WASTE WE GENERATE. AND WE ARE DOING THAT THROUGH INCREASED RECYCLING OPPORTUNITIES, DEVELOPMENT OF COMPOSTING OPTIONS, AND THOROUGH EVALUATION AND REDESIGN--WHEN NECESSARY--OF THE PRODUCTS WE PRODUCE TO MAKE THEM MORE ENVIRONMENTALLY BENIGN.

SWEETHEART CUP IS TOTALLY COMMITTED TO WORKING WITH OUR

CUSTOMERS AND THE ENVIRONMENTAL COMMUNITY TO CONTINUE TO FIND AND DEVELOP MEANINGFUL SOLUTIONS TO LEGITIMATE WASTE MANAGEMENT CONCERNS. THANK YOU FOR GIVING ME THIS OPPORTUNITY TO SPEAK WITH YOU AND I LOOK FORWARD TO YOUR QUESTIONS.

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CAN A BUSINESS BE GREEN?

PRACTICAL & ETHICAL CONSIDERATIONS

DR. J.B. PRATT, PRESIDENT, PRATT FOODS

INTRODUCTION

I'm J.B. Pratt, a retail supermarket owner with eight stores in the Oklahoma City area. We serve over 700,000 people in this market place.

1st Slide:

Our customers are from diverse backgrounds. Most of them are involved in blue-collar work and spend time to save money at the store. The Oklahoma economy has made nearly all customers very price conscious.

2nd Slide:

Our stores range in size from 12,000 to 53,000 square feet. We offer full service and are involved in many community activities, especially support of primary and secondary education.

3rd Slide:

The title of this part of the program is "Can Business Be Green?" I hope to answer that question in the next few minutes, but I must hasten to add that there is one area in Oklahoma that can never be green.

I don't know if I'm a retail maverick but I do like to raise hell in the business whenever I can and the environmental awareness movement has been great fun for me in this regard.

Now let's talk about the Enviromarket concept we developed.

4th Slide:

Established in February 1990, Enviromarket as an in-store program that shows consumers environmentally-sound products and practices that they can use everyday.

Our primary audience is Pratt Food customers and their children. A secondary audience is the members of the community that aren't Pratt customers, but participate in the Enviromarket related programs, such as the Earth Bus or

"Waste: A Hidden Resource" school program. Community population served by Pratt Foods is approximately 757,000. Children served through school or museum programs equal 140,000.

We've made a special appeal to children because we believe they are not so set in their ways that recycling, etc. will seem difficult or unreasonable, as it does to many adults. Plus, in stimulating childrens' interests, they may create interest from their parents.

Pratt Foods provides support projects to Enviromarket that involve and educate the public, such as selling live Christmas trees and collecting old phone books for recycling.

Most distinctive about Enviromarket is that we promote conservation, recycling and the use of safer products in spite of the possibility of decreased sales. Offering customers a "home remedy" for a toxic substance does not aid short-term profits. But we choose to concentrate on the long term effects. of our program - which will, we hope, be a cleaner and safer environment for us all. What's the point of great sales if we don't have clean drinking water?

The way we measure the results of Enviromarket is through the: 1) increase in organic produce sales, 2) greater demand for environmentally-safer products and recycled products, 3) growth in the amount of recyclables brought to Pratt Food store locations and 4) increase of participation in the Enviromarket-sponsored programs.

The Enviromarket program contributes to environmental awareness and ethics in several ways. Repeated advertisements in newspaper, television and inside the store expose the community to ideas for conservation and environmental safety. Regular messages on grocery bags and monetary incentive to reuse each one (5¢ credit per bag) educates customers. Tags throughout the store identify products that are "friendly" to our earth. Signs posted alongside certain types of products describe safer methods to get the same results.

Enviromarket can easily be adapted to other retail businesses and budgets. Most stores have bags on which they can print messages. In-store displays of ecologically-sound products or procedures are inexpensive and effective. Incorporate promotions into regular advertising campaigns. Sponsoring environmental events in the parking lot or store isn't costly and gives an incentive to would-be customers to visit. Activities in this program can be enhanced or excluded in

correlation to budget. We hope retailers see how simply Enviromarket can be implemented to their operations. It's not limited to just grocery stores. Garden centers could post natural methods for pest control and fertilization alongside regular retail products. Sales could possibly increase by giving information about how indoor plants clean household air. Clothing retailers could provide stain removal ideas on bags or on the backs of their tags or receipt tape.

Retailers are not limited to providing information relating directly to their products. Any ecological information can be presented in flyers, displays, signs or ads. What's most important is giving consumers repeated and varied exposure to "green" ideas to stimulate action within the community.

Now back to the question "Can Business Be Green?" My preliminary answer is "yes" if business people are first "green" in their personal lives. I say this because it's apparent to all of us that this is a lifestyle, not just a marketing effort. Business owners and operators should be the first to do this if they wish to successfully show customers the way.

Here are a few examples of what we do at my house to be a "green" family.

Slides:

It's taken over a year for us to develop these new habits, so I know many of my customers are just beginning to realize there are alternatives to a disposable life style.

Let's take a look at some of the areas we are addressing in the Enviromarket a little more closely.

ENVIROMARKET - A place where you can help the environment and save money, too.

Slides:

I have enjoyed presenting this to you. I have presented a similar slide presentation to church groups, peace awareness groups, school children, civic clubs, in a convent, and many other places in the Oklahoma City area.

Sometimes doing what is popular or even most profitable isn't doing what really is the right thing. That's where some of us upstarts in business come in, I guess. It really is a lot of fun.

Thank you.

COMMITTEE FOR
ENVIRONMENTALLY EFFECTIVE PACKAGING

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Hardee s Food Systems, Inc
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National Association of Convenience Stores
National Automatic Merchandising Association
National Council of Chain Restaurants
National Restaurant Assn
Nebraska Consumer Packaging Council
Ohio Council of Retail Merchants
Randolph-Sheppard Vendors of America (blind vendors)
Wendy s International, Inc
Wisconsin Consumer Packaging Council
James C. Benfield
Executive Director

THE GOVERNMENT SHOULDN'T DESIGN PACKAGES

Summary of remarks by Jim Benfield
Monday, September 30, 1991

Can a business be "green?" Yes. However, making a judgment on the greenness of a business can be tricky. For example, many people judge foodservice businesses by the consumer packaging they use. Yet, a study (reported in the McDonald's Corporation/Environmental Defense Fund Final Report of April, 1991) found that of the on-premise waste generated, 21% was over-the-counter; 79% was behind the counter.

That is why some of the greatest progress made in the foodservice industry is not readily seen. Some of the steps that McDonald's* has taken or has targeted for 1991 implementation are:

1) Substitute mechanical-pulped paper for chemically-pulped paper, thus reducing the use of chemicals and using more of the tree.
2) Direct pumping of Coke syrup into restaurant tanks, eliminating "bag in the box" containers.
3) Carry-out bags with 50% post-consumer waste and 50% post-industrial waste including 20% recycled newsprint.
4) Eliminate pre-wrapped cutlery by orienting all handles in the same direction.
5) Convert to unbleached carry-out bag and oxygen-bleached coffee filters; utilize benign bleaching processes, or unbleached paper whenever possible.

Polystyrene (PS) used in the foodservice industry uses no CFCs. It is now moving from HCFC (95% less damaging to ozone layer) to pentane and butane. Manufacturers will start to use CO_2 as a blowing agent. The fact that PS is not biodegradable is a non-issue; virtually nothing degrades in a landfill. PS can be recycled and is being recycled. Virtually 100% of the PS used in the 165 Montgomery County (Maryland) schools is recycled; PS saves public schools money in labor, dishes, dish washers, hot water.

Grocery store owner J.B. Pratt, another panelist, said he changed back to PS from paperboard meat trays because shelf life is longer with PS and customers find freezing meats is easier with PS.

McDonald's move from PS to a paper/polyethylene wrap was environmentally correct, because the wrap is 1/10th the volume of the PS clamshell and uses less material in the manufacturing process. About 50% of all orders leave the restaurant, making the collection of post-consumer PS for recycling difficult.

Businesses must create markets for recycled materials. Clorox will manufacture gallon bleach bottles using 20% post-consumer resin (PCR); bottles will be available in 10% of the country by this fall. Virgin material must be used on the interior of the bottle, because impurities in the PCR could react with the bleach, reducing its effectiveness.

The actions taken by McDonald's and Clorox were done without governmental regulation. Regulation could stifle innovation in package design and use. The government would need to write regulations for each package and use, and then continually update the regulations. Pressure from consumers and environmental groups for environmentally superior products and packaging will produce the results that we are witnessing today.

* I was asked to substitute at the last minute for Mike Donahue, Director of State Governmental Relations for McDonald's Corporation. Thus, I feel it appropriate to use many McDonald's examples in my presentation.

SECOND ANNUAL ENVIRONMENTAL SHOPPING CONFERENCE

Baltimore, Maryland - 9/30/91

Panel discussion on: "Can a Business be 'Green'?: Practical and Ethical Considerations"

(Text of talk presented by Jay Conrad Letto, independent environmental consultant and enviroment and public policy writer.)

Ethically speaking, can a business be "Green"? To me, this is the same as asking: Can a business be ethical?

The answer is, of course, totally relative -- it depends on who's answering. There are some who would say that the very nature of businesses in the U.S. (bottom-line concerns, profit-making motives, desire for continued growth, etc.) renders them unethical with regards to society. And, indeed, if it were not for such things as government regulations, environmentalists' investigations and accusations, media attention, and, of course, most importantly, a justice system that tries civil law suits -- if it were not for these things -- industry would not only treat our society unethically, but would arguably (through environmentally unsound practices) destroy life as we know it.

So, can a business be Green? Well, of course, it can be Green, but what incentives are there for it to be so?

Certainly there are regulations, for instance: Industry can only put so much pollution in the water and air; lead can no longer be added to gasoline; toxic emissions have to be documented and made public; new cars built have to get so many miles per gallon, and so on. If industry meets these regulations are they then to be considered "Green"?

For example, if General Motors spends millions and millions of dollars fighting against clean air legislation, particularly auto emissions standards and fuel economy, but then meets these regulations after they are passed, can it be considered a "Green" business? Millions of dollars worth of GM ads says so. But, perhaps it should take more than that.

Obviously our society must have business and industry. We may be able to survive without MacDonalds, for example, but our society certainly cannot survive without food or a multitude of other products and services.

But who is "Green"? Where do you draw the line that says on one side are companies that are Green and on the other side are companies that are not? And who's qualified to do this? I know I'm not. I don't think we'd want McDonalds deciding this. And as sincere as it may be, I don't think we'd want Pratt Foods giving the end-all answers. How can anyone with a vested interest in selling products be unbiased in their decision-making about these products? There are private groups with good intentions setting up various green labeling schemes -- Wal-Mart, Green Seal, and others -- but it seems to me that it will take much more than this to adequately monitor "Green" claims in advertising and on labels on a national level. It may take nothing less than an independent government agency equipped with the resources necessary to monitor these claims. Perhaps it could be set up such that before a company would be allowed to put "environmentally friendly" or "recyclable" on their labels or call themselves "Green" or "environmentally concerned" in their ads that they would have to first apply to and then get approval from this agency.

And, is there a need for such an agency? According to a Roper poll of 2,000 adults nationwide, 65% said they had seen environmental claims on labels or ads, over half of them said they felt the claims were not accurate, and then 54% of all those polled said the government does not do enough monitoring of these claims. So, it seems the public perceives a need.

And advertising critics - people who monitor advertising for a living - also point out arguments for such an agency. Frederick Elkind, senior v.p. and director of Trendsights at Ogilvy & Mather, says that all the overstatements in green advertising are making it "difficult for the consumer to separate the real from the questionable." Bob Garfield, ad critic for Advertising Age says that if companies don't abandon misleading environmental advertising, it could create a "boy-who-cried-wolf" scenario, whereby consumers are not only "turned off to exploitative, overstated, dishonest green marketing, but also to the legitimate green marketing that truly has environmental benefits." And why else would business back off without the incentive of regulations making them do so?

It seems that this agency would ultimately have to draw the line between companies that <u>are</u> ethically and practically "Green" -- and would thus be allowed to say so in their advertising -- and those that aren't. It may be better to have it set up like this rather than have the government first try to actually monitor all the claims in ads and labels that are out there, and then try to check them all out. It would probably be much easier (not to mention cost efficient) for the government to put the responsibility for

approval on industry's shoulders rather than the government being responsible for finding bogus claims.

So, obviously, a business can be "Green" if we chose to draw a line as such, but the question remains: Where do you draw this line?

As we must have products and services and thus businesses, it seems to me that it comes down to a matter of degree, that is, we should call "Green" those products and services and businesses which do the least amount of harm to the environment. And, likewise, the products and services and businesses that do the most to promote a cleaner, safer environment. But, another question comes to mind then: Should this agency compare only like products and services, that is, compare automobiles only to other automobiles? Or would it be better to compare within a grouping of products or services, such as "transportation," where bicycles and most mass transit are clearly more environmentally sound than autos?

A lot of questions remain, but it seems that something has to be done to put a stop to all the misinformation that is overrunning the media.

In interviewing several industry spokespersons for a piece I did for the current issue of Buzzworm magazine, I noted that all of them agreed that green-washing is prevalent, but, of course, they all said that it was the other guys. Clearly without regulations of some kind, industry is blind to their own misinformation. They cannot be trusted to regulate themselves.

BASF, for example, the big multinational chemical company, has gained attention in environmental circles for its notorious lack of concern about environmental issues and continual mishandling of its own wastes. According to Jonathon Schorsh, director of the Council on Economic Priorities' Corporate Environmental Data Clearinghouse -- someone who monitors corporate behavior with regards to the environment -- BASF has one of the worst environmental records worldwide. A quote from him: "BASF has a host of environmental problems that range from duplicity to spills and accidents and cover-ups, and I don't believe they've made much effort to change their attitude."

Compare that to a recent BASF ad which reads: "At BASF, we never forget the effect we have on the world we live in. Our employees have a strong sense of enviromental responsibility. From research and development to the final product application, we take special care to help ensure that our production and disposal methods are safe and environmentally sound. After all, we all share the same planet."

According to BASF marketing services director Terry O'Connor, the company will no longer run that ad or any other environmental ads (though not because of any backlash, he added). But, instead are contributing to a $50 million ad campaign by the Chemical Manufacturers Association (the chemical industry trade group) to try to clear up what they consider to be the public's misconceptions about toxic waste.

The danger of such an ad campaign is obvious to me. These companies have a vested interest in convincing the public that scientists no longer consider toxic chemicals as dangerous as they once did. CMA wants to stop lawsuits, it wants to stop bad p.r., etc. Well, the science community is in the midst of a huge controversy over the true risks of toxics such as dioxins and PCBs. Though I've not yet seen any of the $50 million worth of ads, I'm guessing that they will not reflect both sides of this controversy, and that, to me, is not serving the public interest. At the same time, clearly, there are little if any resources for the other side to voice its opinion. This is one example of what I'd call opportunists with regards to the new "Green" movement. (In general, I'd say that, in addition to the chemical industry, the auto industry, the timber industry, and the nuclear industry also fit this bill. By and large these companies are buying their "Green" credibility in the media rather than earning it.)

And the crazy thing to me is that it isn't that difficult or expensive to earn "Green" credibility. It may even be cheaper than trying to buy it (though it won't necessarily help profits TODAY). For example, I think that CMA's underwriters should spend their $50 million on new waste reduction programs and really clean up their acts, rather than on propaganda to try to convince people that toxic chemicals are harmless. 3-M in Minnesota built what is considered the pre-eminent waste reduction program in the country back in the 70's and they now claim that it has saved them $500 million!

I didn't mean to pick on BASF so much there, I'm just using it as an example of how industry can be unethical with regards to "Green" marketing. I could have used any of a number of other companies. Let me just throw out a few more examples of what I consider unethical "Green" marketing:

* GM for its three-page ad in major magazines under a headline promoting wetlands conservation, which later in the same ad actually said: "Chevy S-10 Blazer 4-Door. It takes to wetlands like a duck to water";

* A Ford Motors ad with a picture of a beautiful roadless desert landscape on the top and a four-wheel drive Ford

Explorer on the bottom with the caption "Your Explorer is ready.";

* A Toyota TV ad in which an environmentally-conscious young woman lauds recycling and Tercels in the same breath;

* WD-40 pledging $50,000 to the National Park Service if you buy their petroleum-based lubricant, and other such cause-marketing methods;

* U.S. Council for Energy Awareness's ads featuring picket-sign-carrying cartoon forest animals, called "Citizens for Nuclear Energy," that proclaim "Nuclear Energy is one of the cleanest, most abundunt sources of electricity in America. And that makes nuclear energy popular among citizens from all walks of life."

* TetraPak and Combibloc, the makers of the drink box, for their full-page ad in the New York Times claiming that "drink boxes are as easy to recycle as this page."

But there are some good guys -- businesses that actually may be considered environmentally sound -- at least relative to their competitors:

* I already mentioned 3-M and its waste reduction program. This company doesn't even do ads about this. They don't need to, environmentalists give them such good publicity;

* Amoco has saturated popular magazines with two-page ads proclaiming: "We'd like to recyle the thinking that plastics can't be recycled." Page one is "Before," with drawings of various plastic containers and page two is "After," with drawings of products made from recycled plastic. Amoco may be stretching it in a couple of places (such as "plastics are among the easiest materials to recycle" and "recycling is transforming used plastics into a 'natural resource'"). But the company does back its words by sponsoring recycling programs. In addition, again according to Jonathan Schorsh at the Council on Economic Priorities, "Amoco is in many ways the most environmentally responsible of the big oil companies" and he cites its commitment to natural gas, its restrictions on exploration and its extensive program for energy conservation at its Chicago headquarters.

* Arm & Hammer baking soda for its use as a substitute for several less environmentally friendly products in the home.

* And, I don't want to forget to give a plug for Stephen Garey & Associates, a Santa Monica, Calif.-based ad agency that only takes clients who are committed to products and methods of manufacture that bring no harm to the environment. They have four clients so far and about 700 turndowns. Their clients include: Evergreen Oil, which

refines and recycles used motor oil; The Environmental Literacy Group, which designs environmental education curricula; the Trust for Public Land in San Francisco, a not-for-profit environmental group; and Rastra of North America, the US licensee of an energy-efficient and environmentally-sound building material made of concrete and recycled styrofoam. (Stephen Garey & Associates, 2436 Third Street, Santa Monica, Calif., 90405, 213-396-8675.)

Let me finish by saying that all this attention to the environment in advertising is not necessarily a bad thing. Even though much of it is misinformation and some downright lies, the jury is certainly still out on whether or not all this attention will actually help or hinder efforts to PROTECT our environment.

According to Lew Crampton, head of communications and public affairs at the USEPA, regardless of the 'positive or negative nature" of the ads, people are going to learn from them. And he added that when "debates work their way into the media, regardless of how they started, we all benefit from the increased public dialogue on the issues."

Jule Lambeck -- Director DMR, Division of JSC/CCA*

Why is it Packaged like THAT?

Abstract of Mr. Lambeck's Presentation

At the turn of the century, a packaged product was packaged for product protection. The average corner store only had a few hundred products at most and shopping was a leisurely, pleasant event.

Today, its an entirely different situation. There are new environments in marketing and retailing today: Packaging must silently and individually communicate and sell in a competitive and distracting environment.

Instead of the 200 products, we now have an average of 15,000 or 16,000 different products in the average supermarket.

So, in 15 minutes, you are "previewing" about 15,000 separate items, placing a tremendous pressure on the package to capture attention, to communicate and outsell its competitors.

Further, packaging has many impacts, including those on the environment, production and distribution efficiencies, selling/positioning factors and end user attitudes.

DMR -- Design and Market Research Laboratory -- a division of JSC/CCA -- is ideally suited to help clients in these impact areas of packaging and has been doing so for 45 years through the use of Graphic/Product Design and Market Research disciplines.

Research checks the attitudes and recognition levels of the designs - (two areas involved in the communication and positioning of products at the point of purchase) in addition to identifying environmental opportunities/and solutions.

Design cases will show materials as well as process reductions because now more and more of our clients are asking proactive and reactive environmental issue questions.

Surveys have recently been focussing on environmental issues. One Poll -- a Wall Street Journal/NBC News Poll was reported recently in the Journal: 66% feel the environment has gotten worse. Many say that the environmental reputation of a product or manufacturer is important to them. However only 46% have actually purchased these "good environmentally friendly products" in the last six months versus 45% who did not. Obviously consumers are balancing other needs when making their purchasing decisions.

JSC/CCA is in a particularly strong position to address this problem since they are the nation's number one recycler and a major world player in paperboard packaging. We are working with many Fortune 500 companies in addressing packaging problems and opportunities.

Keep in mind that designers are human beings and members of society, personally involved in the process of sorting and recycling. They are trained to develop aesthetic and functional solutions which do more with less. DMR designers work with market research defined design platforms which include environmental issues prominently. The move to computer graphics and CAD programs and systems, quality appearance, up-graded competitive graphics, "Holistic" and "Green" approaches will be discussed. We will review several cases which explain what DMR accomplished for clients such as Rediform, a Division of Moore Business and JCPenney, - each involving environment issues and benefits.

The presentation is concluded with an explanation of "Holistic" packaging which focuses on the inter-dependent aspects of packaging, all concerns and issues related to Manufacturing, Distribution and Materials Handling, and Marketing. Because packaging must take a "Holistic" approach to identifying and solving environmental issues relating to packaging.

*Jefferson Smurfit Corporation/Container Corporation of America

WHY IS IT PACKAGED LIKE THAT?
How Decisions Are Made

Environmental Shopping Conference
Liz Barrett, Mary Kay Cosmetics, Inc.
Sept. 30, 1991

Packaging represents one of today's biggest environmental challenges - especially in the skin care and cosmetics industry. As consumers start looking for more "environmentally friendly" products packaged in a responsible manner, manufacturers are scrambling to reduce packaging, make packaging recyclable or from recycled materials. From a manufacturer's standpoint, we wish the process could be quicker, but it takes time to research, design, test and implement packaging changes.

At Mary Kay, efforts to introduce new recycled packaging began nearly three years ago. We're still fine-tuning our primary bottles and jars and secondary cartons.

Before introducing our current packaging, Mary Kay products were packaged in:
* Glossy coated virgin paperboard cartons with glitzy metallic hot-stamped graphic elements. The carton contained no recycled material and was not recyclable by any stretch of the imagination.
* Plastic bottles and jars with the same glitzy hot-stamped graphic elements, making them non-recyclable. And they did not have SPI recycling codes on them.

Timeline:

In **January 1989**, Mary Kay launched plastic hair care bottles with the Society of Plastics Industry code - identifying the plastics by resin (1= PET; 2=HDPE, etc.).

In **March 1989**, Mary Kay's in-house recycling program was kicked off. Today, close to six million pounds of aluminum, paper, glass and plastic have been collected by employees for recycling, and our waste hauling fees have decreased by $30,000 annually.

In **June 1989**, the SPI code was introduced on all skin care packaging and the gold graphic element was removed from bottles and jars as well.

In **June 1990**, recycled paperboard cartons for skin care products debuted (representing 45 percent of the Mary Kay product line).

By **February 1991**, 90 percent of all products featured recycled cartons and the SPI code - technically required on only 8-ounce or larger containers - is on all skin care, hair care, sun care and body care bottles and jars.

And in **August 1991**, Mary Kay won the Region VI EPA's Environmental Excellence Award for its recycling and waste management programs.

How These Actions Came About:

Mary Kay is fortunate to have a president and chief operating officer who is an avid environmentalist and conservationist. At his direction, the Marketing and Purchasing Departments worked together to implement the packaging changes.

From a **budgetary standpoint**, the switch to recycled board required an initial investment to research options in board quality, printing, carton production, etc. However, by now, the cost of using recycled board is about the same as using virgin stock.

From an **image standpoint**, all prospective changes were tested amongst our sales force and consumers for acceptance levels. The reception from our sales force was overwhelmingly positive. They were (and are) very proud that their company was making environmental advances in packaging and other areas. Since we're in a very image-conscious industry - cosmetics and skin care - this was a *very important* point.

Regarding the **sacrifice in aesthetics:** Typically the cosmetics industry relies on aesthetics almost as much as product effectiveness and quality for sales. Women (and men) have always been attracted to pretty packages - with lots of tissue paper, bows, bags and boxes. The glossier and glitzier the packaging, the better the product must be, right? Not necessarily. Just the more expensive and wasteful, really. Even a certain company that launched an environmental skin care line last year with all-natural claims and recycled packaging still wraps everything in tissue paper and other unnecessary wrappings.

The cosmetics industry has come under fire for this issue recently amongst packaging critics, environmental groups and consumers. Critics need to look closer at companies like Mary Kay and others that are taking steps to treat the environment with a little more respect where packaging is concerned.

On Eliminating the Carton:

Just because Mary Kay has recycled paperboard cartons and all plastic jars and bottles are coded for recyclers doesn't mean our packaging review is complete. Alternate packaging methods and technology are constantly under scrutiny. Our number one environmental question from our sales force and consumers these days is, "Why can't we just skip the carton?"

The answer to that is a bit complicated. We are not in a position yet to eliminate the carton, but we are working on it. The following points factor into the answer:

Shipping: Cartons protect our products during shipping in one primary way. Due to the way we sell, beauty consultants often order items in small and/or odd quantities; not case lots. If case lots were being ordered, we could probably use a reshipper carton with individual corrugated slots or other protective shipping inserts. But our salespeople run businesses of greatly varying sizes. Some order by the case; others order singles or triples of one item, a dozen of another and so forth. In ship tests, individual products were knocked around, damaging the product and/or labelling to an unacceptable degree.

Labelling: Although no federal requirements exist regarding carton labelling, we currently do not have room to list ingredients, product directions and promotional copy

all on the primary container. This is a point that can be overcome by sacrificing promotional copy.

Aesthetics: Again, consumer perception is a factor. Although seemingly multitudinous surveys show that consumers are willing to pay more for so called "environmentally friendly" products, there is still a perception out there that fancy cartons represent more upscale, higher-quality products. Granted, to remain profitable, a company must consider the image of the product. However, at Mary Kay, we have already sacrificed packaging aesthetics (to a degree) to be more environmentally responsible.

In the end, Mary Kay plans to try eliminating product cartons on those products best suited as soon as practicable and feasible.

Practicality: Mary Kay beauty consultants must not only stock their own inventory, but frequently they carry product with them to skin care classes, open houses, on reorder trips, etc. Products risk damage without cartons (labelling gets scarred, caps and lids are not sealed, etc.) and they are not easily stackable for inventory-storage and transport purposes.

Possible Future Options: Our purchasing experts and packaging engineers are currently evaluating a number of innovative alternatives to cardboard folding cartons. Options include shrinking product in corrugated liners for shipping or putting a protective - and recyclable - glaze coating on containers to protect them during shipping.

There are some products that will probably always require cartons - lipsticks, eyeshadows and other small items, for example. However, the amount of waste created from these items is really negligible.

On Refillable Products:

From a retail standpoint, cosmetics refilling is at best a risky business due to hygienic responsibilities. Sanitizing empty containers, bringing them back to the point of purchase for refill, and refilling them in a safe and hygienic way are some of the challenges. So far, retailers offering this option are not seeing much success. With direct selling, the idea becomes even more interesting because ordering and inventory methods vary so greatly among each individual Mary Kay beauty consultant.

Despite the many difficult and interesting challenges presented by refillable products, Mary Kay is currently evaluating several potentially viable refillable packaging methods. It's not the same as, for example, designing and formulating concentrated laundry detergent refills. Skin care and cosmetics formulations are generally not adaptable to concentrated formulas.

Closing:

Mary Kay remains committed to monitoring packaging developments to ensure optimum achievements in source reduction, recyclability and recycled content. Our first priority: maintenance of our fragile environment. (It's also nice if customers like it.) Basically, at Mary Kay we believe that mankind has taken planet Earth for granted, and for too long and now it's time to pay up. Air and water and land aren't free anymore. Reducing and recycling our packaging is just one way to start paying our dues.

MARY KAY

Mary Kay Cosmetics, Inc., 8787 Stemmons Freeway, Dallas, Texas 75247-3794 214-630-8787

ENVIRONMENTAL FACT SHEET

September/October 1991

Besides meeting the beauty needs of women around the world, Mary Kay Cosmetics has taken a leadership position in helping preserve the natural beauty of the world itself.

Mary Kay's three-tiered recycling program began in March 1989 and involves:

1) corporate recycling of office paper and other material;
2) employees bringing recyclables from home;
3) recyclable and recycled product packaging.

Since the program began, over five-and-a-half million pounds of glass, aluminum, paper and plastic have been collected from office areas and outdoor bins in which employees deposit items brought from home. More than $18,000 in proceeds from Mary Kay's employee recycling program has been donated to the Texas Nature Conservancy and the Dallas Parks Foundation.

1) The kick-off of Mary Kay's recycling campaign included the collection of all office white paper, computer paper, and junk mail, as well as newspaper, magazines and soda cans. As of Aug. 1, 1991, all polystyrene food service items are also being collected for recycling.

2) Employees are encouraged to bring newspapers, glass, plastics and aluminum from home for deposit in outdoor bins.

3) In January 1989, Mary Kay Cosmetics began including the SPI (Society of Plastics Industry) recycling code on hair care bottles. In May 1989, Mary Kay launched new skin care packaging also featuring the SPI code. This makes for more efficient recycling by helping consumers and recyclers identify resins in plastic packages. The code is now featured on as many Mary Kay containers as is possible.

Mary Kay's corporate letterhead, business cards, order forms, package inserts, publications and some brochures are now being printed on recycled paper and recycled cotton fiber. Of all paper purchased by Mary Kay for office use and printed pieces, 90 percent is recycled stock.

In mid-1990, the company also began using non-toxic soy-based inks for all in-house printing, and has found that it performs even better than petroleum-based inks formerly used.

Mary Kay also introduced recycled paperboard packaging in June 1990. To date, the company's orders of 3,050 tons of recycled paperboard have saved more than 51,000 trees, over 21 million gallons of water, more than 12 million kilowatt hours of electricity and 9,150 cubic yards of landfill space.

-more-

In September 1990, recycled paperboard cartons for all skin care products debuted. This represents 45 percent of our product line (in terms of sales). The "recycled" symbol is on the inner flap of each carton. Additionally, a gold hot-stamped graphic element was removed from all skin care packaging, creating a more recyclable package.

In early 1991, Mary Kay introduced a promotional product brochure printed on a revolutionary new recycled paper stock designed for top quality four-color printing. Mary Kay was the first major user of this paper, purchasing 225 tons to print 6.5 million brochures.

To our knowledge, Mary Kay Cosmetics was the first major cosmetics company to introduce recycled packaging for such an extensive product line. Currently, 90 percent of our regular line products (totaling up to 250) feature cartons made of recycled paperboard. In addition, Mary Kay products are packed for shipping at warehouses with CFC-free polystyrene peanuts made of recycled resins in recycled (and recyclable) corrugated cartons.

Mary Kay's latest environmental advance is a Dart polystyrene densifier. All polystyrene cups and plates used in coffee bars and company cafeterias are collected for on-site densification and then made available for remanufacture into food trays, toys, office supplies and other useful plastic items.

In May 1990, Mary Kay Cosmetics received the Environmental Excellence Award from Clean Dallas, Inc. (a subsidiary of Keep America Beautiful, Inc.). In August 1991, the EPA Region VI presented Mary Kay with its Environmental Excellence award. Both honored Mary Kay's successful employee recycling program, recycled packaging advances, waste reduction measures and other environmentally responsible achievements.

In addition, company President Richard Bartlett serves as vice chairman of the Texas Nature Conservancy, and vice president of the Corporate Recycling Alliance of Texas. Mary Kay Cosmetics is also a co-founder of the Corporate Recycling Council of Dallas. The council, spearheaded by Texas Land Commissioner Garry Mauro and Mary Kay Cosmetics, promotes recycling in the business community. It has served as a model for establishing CRCs in Houston, San Antonio, Plano, Longview, Fort Worth and Austin.

Furthermore, the Mary Kay Foundation sponsored the first annual Texas Earth Friendly Awards in April 1990. Coordinated by the Corporate Recycling Council of Dallas, the award went to 46 environmentally conscientious Dallas companies (including Mary Kay Cosmetics, Inc.) who recycle.

For more information about environmental efforts at Mary Kay Cosmetics, please call or write:

Mary Kay Cosmetics
Corporate Public Relations Department
8787 Stemmons Frwy.
Dallas, Texas 75247
(214) 630-8787

Printed on recycled paper

WHY IS IT PACKAGED LIKE THAT?
How decisions are made

Environmental Shopping Conference
September 30, 1991

David Labovitz, ASHDUN Industries, Inc.

The role of packaging has changed steadily over the years as more and more demands have been placed upon it. What was once very utilitarian has evolved into something of considerable complexity, designed to serve a number of constituencies. This is no more than a reflection of our society itself.

Environmental impact, both of product and package, have come to the fore with a rush. Terms like "lifecycle analysis" and "cradle-to-grave" have forced us to think in a new context, the depletion of natural resources and the fouling of the place where we live.

Packaging like product does have a lifecycle. From conception to disposal. Like the baby we bring home from the hospital we have hopes and aspirations for each package. We hope that others will find it appealing. During its life we hope that it will meet its obligations and make us proud. And when it goes we hope it will be without difficulty and in harmony with nature.

What sort of issues must be addressed in the design of a package? What is the atmoshere into which a package is born today?

Before the 1930's packaging was simple and mainly functional. But as simpler times gave way to the ever more hurried pace of today, so did our expectations of packaging. And so did our choices.

First let us consider some of the functional requirements. Some basics have not changed. Size, shape, count or weight, form (is it liquid or solid) and the like must still be considered. A few examples of the influence of physical properties might be : a) when a liquid, because of foaming during the filling process might require some head room in the container beyond the actual volume of the fill, b) when we wish to minimize or avoid interaction between product and package like chemical interchange or c) when a barrier against heat or light is desireable such as is the case with the opacity of the average milk container in terms of UV light.

We now enjoy all manner of products from faraway places, not to mention out of season items like orange juice or kiwi fruit. Were it not in large measure for the role of packaging this would not be possible. Not long ago I heard an interview with Margaret Thatcher on the radio. When asked why she had been the first Western leader to do business with Mikhail Gorbachev, Mrs. Thatcher told a story about his honesty that impressed her and is pertinent in our context as well. Instead of rattling off the obligatory production numbers gilded with the glories of communism, Gorbachev told Mrs. Thatcher that the food problem the Soviet Union faced was not production, but distribution. "We grow enough to feed our people," he told her, "but 40% of it rots in the fields." Product preservation is in large part a benefit of good packaging, and something we often overlook. Other countries can only envy the bounty we enjoy.

In addition, durability and dependability on the shelf are a must. This is true despite the current efforts placed on improved product velocity in the distribution system. One estimate has placed the avoided cost of goods damaged in transit through good packaging at $25 billion.

Packaging must also be able to meet new technologies or developments. The TV dinner and its aluminum tray were the forerunner of the microwaveable. Predictions have it that the day is not far away when hotel rooms will have microwaves and the glove compartment of a car will be replaced by one for our busy on the go lifestyle. I have even read, in this day of minaturization, that one day in the not too distant future we will have microwave packages with the ability to interact with the microwave itself. The package will tell the microwave how to cook it and monitor the progress.

Freeze drying led directly to the pouching of foods and beverages. Just witness the now infamous Army MRE's (Meals Ready to Eat). And if the reports from Taiwan are to be believed, we may shortly see the time when the package becomes part of or the actual meal! Supposedly they have developed edible bowls made from oatmeal.

Secondly, packaging faces certain distribution requirements. Inventory control and space management have become critical factors in successful distribution. Retailing has become more and more like the real estate market. The walls of a store are not getting any wider and the roof is not getting any higher. What is the return, in dollars and cents, per square foot of selling and warehousing space? This question has been accentuated with the new pervasiveness of computers. Scanners have made the accumulation of enormous bodies of data possible, including product movement. Slotting fees, a kind of rent for shelf space, are not uncommon.

In such an environment the package design may actually become a part of the financial performance of the product. Under one of the hottest cost accounting methodologies of the last number of years, Direct Product Profitability or DPP, package efficiency, in terms of space requirements throughout the distribution system -from shipping to warehousing to the retail shelf- can make or break a product. In baseball, batting .667 or two out of three, would be remarkable. The aseptic "brick pack", best known as the juice box, is a good example of a package that scores well on two issues and lousy on another. From a shipping and distribution point of view it is extremely efficient. And the methodology was definitely a breakthrough in product preservation. Yet because of its being a multilayer laminate, such boxes are banned in the state of Maine because they have not proven susceptible to recycling.

Moving more product more economically is a goal of all manufacturers and distributors. How a product is loaded on a truck or rail car (is it palletized or floor loaded?) puts certain demands on to the packaging as well. Some products are by nature heavy and will reach a legal weight limit for the conveyance before ever fully occupying the space. Others are much lighter, for instance paper goods or snack foods, and will "cube" or fill the space before ever reaching the weight limit. In the latter instance any improvement in the packaging which allows for shipping more has direct financial implications.

Pilferage also plays its part too, unfortunately, to the tune of several billion dollars a year. Packaging is asked to also work to minimize that problem in the distribution system as well. The stretch wrap around pallets or cases creates a nice, tight brick that fares better against damage but also discourages "sticky fingers" as well.

How will it be sold, as well as how many times will it travel and how far, also plays a part in the packaging of a product. A convenience store does not have the inventory space of a grocery or a department store. They can stock more items <u>if</u> they can take them in smaller packs. Thus "break packs", inner units of smaller multiples were born. But this requires some additional packaging for sorting and picking.

Next we come to the influence of legal requirements on packaging and its design. Here again, certain basic items must be incorporated into the design and copy, such as weight, count and the name and address of the manufacturer or distributor. And there are often very specific rules governing the relative size of the type and where information may appear on the package. Health and nutritional information requirements must be taken into account along with the proper verbiage, as witnessed by the stepped up enforcement policies of the FDA meant to ensure accuracy and utility.

There are also safety requirements. They may take the form of a printed warning regarding such issues as pregnancy, poison, flammability or be manifested in some physical characteristic directed perhaps to the tampering question. New and sophisticated techniques and materials are even now being directed toward this last problem .

Other legal questions must also enter into package design such as trademark or patent concerns. A good illustration might be what happens in the design of a typical retail store brand. Usually they do not come into existence until a national brand leader has demonstrated that a market exists. Therefore, for ease of customer identification and comparison,the store is often imitative in one or more ways of the national brand. It may be in the size or shape of the package or the general color scheme. But since this frequently skirts on "trade dress" infringement some element of care is also required to protect both the retailer and his supplier.

Of course a package and what it says must also avoid what might be considered deceptive or misleading under the basic consumer protection laws already on the books.

Although they are important, none of the afore mentioned subjects exhibit the sense of urgency as the demands now placed upon the design of packaging by competitive market and environmental issues. Let us first set the competitive background a bit, in order to understand the pressure placed on a package to perform certain functions. The retail business is <u>not</u> the same as it used to be. In fact there have been more profound changes in the last ten, certainly 15-20 years, than the fifty before them.

The "go-go" 80's saw LBO's, mergers and bankruptcies all around. The financial pressure on retailing became intense and there was a dramatic consolidation of distribution. New store formats, such as combos (grocery <u>and</u> drug under one roof) and superstores, changed the landscape. New store designs were tried and put into general use. And most significantly, stores began crossing over traditional distribution boundaries into each others' territory. Grocerystores now sell almost the same amount of health and beauty aids as the drug store, which for years was the primary source for such items. Mass merchandisers like K-Mart now sell spaghetti sauce along with their soft goods lines.

The competition is brutal. In 1974 there were 198,130 grocery stores; today they are 140,000 - nearly 60,000 less. But they are bigger today, with the average 1991 new store at 38,000 square feet compared to 26,035 square feet in 1974. But here is the key figure: in 1974 the average grocery store stocked 8,948 items; today it is approximately 30,000 items, a 235% increase. Nor is there any respite in the introduction of new items, even though 3/4's of them will fail. Everyone wants on to those shelves. And a package better be prepared to "pull its own weight" in terms of facilitating sales off the shelf.

Today, from a marketing perspective, our society has become increasingly segmented. Network television advertising no longer has the effect it may once have because our choices, thanks to cable, are broader. Lifestyles as we knew them in years gone by are different. We have a proliferation of single parent households, singles living

lone and kids with more spending power than ever before. Life expectancy is not only longer, so are our conceptions of what being 60, 70 or 80 means. The demand for ethnic products has sharply increased. One figure I recently saw mentioned that 70% of the women in this country who want to do work outside the home. We are busy! Is it any wonder that convenience has become so important to us?

All of these developments are reflected in packaging. Single portion servings are but one example; there are simply more one person households than there used to be.

Last year, advertising expenditures in this country were $120 billion. John Carroll, writing in the BOSTON GLOBE mentions that "estimates of our daily intake of marketing messages now range from 1700 to 3,000". But despite all that money, traditional advertising, not only of the TV but the print and other varieties as well, does not seem to working any longer. So a package becomes critical in the delivery of a company or product message.

Purchase decisions are generally made in about three seconds in front of a shelf. Impulse is a central part of the shopping experience. For while 70% of shoppers make a list, 88% admit at least occasionally deviating from it and 41% frequently or almost always make an unplanned purchase. That is why a package must be attractive, clear in its basic message and recognizable. Brands today are worth so much because of the accumulated equity in the look of the package. Take the Nabisco mark for instance. Or consider how a strong looking brand can be transformed into other products. Dove ice cream bars are now also a candy bar.

A package is a small billboard for the marketer. Which is why the turf wars for shelf space have always been tough. The number of "facings" on the shelf is often the measure of success. But now consider a new question. If less is better in terms of packaging, what happens to the standout look that marketers have worked so hard for so long to obtain? The "new" detergent concentrates are a good example. In fact, it is already possible to concentrate even to half the size again of the products only now finding their way, with much heraldry, on to grocery store shelves. But how does the marketer explain why a box ¾ the size of the familiar old standby costs four times as much in the three seconds available at the shelf? Never mind that it both does more laundry and is significantly better in reducing packaging waste. That scenario scares the daylights out of the average major consumer products marketing company. Like it or not, for better or worse, sometimes perceptual problems enter into the design of a package. The physical characteristics of a package can and do effect the price/value relationship perception.

Often aesthetics <u>are</u> the product. This is especially true in some categories such as the personal care area. Even such a simple thing as the ability to see the product itself, perhaps via a window in the box or bag, becomes central to the acceptance.

Packaging does not exist in a vacuum. It may be tied into other advertising or promotional materials. It may be a part of some affinity or cross marketing scheme involving an event or other products. It may have an educational burden to bear as well, in terms of usage or applications. This is heightened by the lack of informed sales clerks on the average retail selling floor these days.

Lastly, but ever more important, are the environmental considerations in package design. This is not always easy to get a handle on because the subject is just simply exploding. Forty-nine states now have some recycling law. Twenty-six states and the District of Columbia have recycling goals higher than the national 25% target. Ninety-two proposals on plastics were adopted in 33 states in 1990. Twenty-seven states have adopted the SPI plastic coding methodology. Eight states have toxic reduction laws regarding heavy metals in packaging and several counties (e.g., Nassau NY) have actually banned plastic packaging outright.

This is nothing short of daunting for the national marketer who must face the prospect that what works in one jurisdiction may either be substandard or unlawful in another. Packaging must face the disparity of disposal methods employed across the country. In the East, where space is at a premium, landfilling has become anathema. Yet out West other issues may be of more immediate concern, such as the water supply.

Not only is there a disparity of disposal options, but also the recapture systems for various materials. Multi-material packages have special problems. One company has taken an innovative approach to this problem. Its product, a shaving cream, comes in a plastic container. The company believes that since most men spread the cream by hand there is no need for a pump or aerosol device, thus avoiding a mixture of parts and materials that defies recycling efforts. Further, by making the plastic container of one specific type of plastic, the package becomes much more easily recyclable.

It is this sort of thinking that recognizes the issues, appreciates the EPA's hierarchy of disposal options and seeks the most benign methods of production and packaging that represents the hope of the future. The Institute of Packaging Professionals has published a very well received set of guidelines for its members that challenges them, through a series of questions in the design process, to think from inception in terms of better environmental choices. These guidelines have been translated into several foreign languages and over 17,000 copies have been distributed to date.

They may not seem spectacular at first glance, but there are very clearly many incremental improvements that can be made. At ASHDUN Industries for instance such seemingly simple procedures as adjusting manufacture to either compress a block of paper napkins or wind a roll of paper towels tighter rather than follow the standard practice of puffing them up with air resulted in packaging savings of up to 50%. More significantly, such reduction in the space taken up allows for more product on each trailer, thereby substantially increasing the energy efficiency of the distribution.

Right now there is a burgeoning body of law environmental law effecting packaging either directly or indirectly. It may be in the form of recycling requirements, prospective disposal taxes or outright bans. The cry for some national standards in terms of packaging is well founded. A clear and consistent voice is needed to reconcile all the competing elements. One unfortunate effect of all the interest in packaging and the environment has been the materials wars. Is paper better than plastic? I doubt anyone can say definitively today. Like most of us, both have their strengths and weaknesses. We must remember that packaging serves many masters.and what may be deficient in one respect may have great value in another.

There will be much trial and error as we seek to find the most environmentally benign packaging possible. Economics will play their role but may change as we learn more about the "true" costs of extraction and processing. This is most assuredly new ground. We are all in for an education. And it is education that will be the key. More environmentally sound packaging will not take hold unless consumers are both aware of the rationale behind why things are packaged as they are and are in turn supportive of those innovators who ever attempt to find better methods in their purchasing decisions.

Packaging decisions are not made in the abstract or purely theorectical. Many factors combine in determining "why is it packaged like that?" It will take an educated consumer who receives proper information from an often lazy media to help facilitate better choices. More recycling programs are important; so are programs for kids so they'll understand the issues.

If everyone does their own part, we can have packaging that fulfills valuable health, safety, functional and aesthetic purposes while being environmentally responsible.

SECOND NATIONAL ENVIRONMENTAL SHOPPING CONFERENCE

OPEN FORUM ON LABELING

PRESENTERS IN ORDER OF THEIR APPEARANCE

DENNIS GRIESLING -	Director, Public Affairs, The Soap and Detergent Association, New York
JOHN MCCAULL -	General Counsel, Californians Against Waste of Sacramento, CA
GINGER BUCHER -	Environmental Administrator, York, PA
PAMELA J. DRIVER -	Director of Government Relations, Foodservice and Packaging Institute, Inc., Washington, D.C.
JEANNE M. HOGARTH, PhD.	Consumer Economics & Housing, Cornell University Cooperative Extension, Ithaca, NY.
GREG HARDER -	Waste Management Specialist, Pennsylvania Department of Environmental Resources, Harrisburg, PA
CINDY DRUCKER -	Webster Industries, Peabody, MA
HOLLISTER KNOWLTON -	Consumer and environmentalist, Philadelphia, PA
*RICHARD KELLER -	Procurement expert, Solid Waste Authority of Maryland
GINNY NELSON WULF -	REACH (Reduction/Recycling, Education & Action for County Health), Lincolnshire, Ill.
*RICHARD PARRY -	Vice President Public Affairs, DowBrands Inc., New York, NY.
NANCY LILIENTHAL -	Director, Chemical Hazards Prevention Program, INFORM, Inc., New York, NY
*PAT IMPERATO -	Consumer, environmentalist, former Director of Environmental Affairs, League of Women Voters of PA.

*no presentation submitted

SDA The Soap and Detergent Association

DENNIS GRIESLING

DIRECTOR, PUBLIC AFFAIRS

SUMMARY

All legitimate parties involved in the environmental labeling debate agree that there is no room for false or misleading representations. However, there is significant disagreement in some quarters over the extent to which government may proscribe the use of certain words or representations.

The California Environmental Advertising Law, sponsored by Assemblyman Byron Sher and signed by Governor Deukmejian last year, represents a case in point. It can readily be read to prohibit the use of the covered "terms" in any manner or form, whether the words are used in a context or alone, unless the definitional standards are met. In Rhode Island, while the State concedes that "statements of fact" using the terms covered by its regulations are permissible, it then proceeds to dictate acceptable language.

Meanwhile, in contrast, the State of New York and the State of Maine distinguish, in a clear manner, between the use of so-called "naked terms" and contextual statements. New York, in regulation and Maine in statute both avoid a proscription against the use of their regulated terms in contextual statements.

At the base of this debate is a critical First Amendment legal issue, i.e., "commercial speech."

Further, while there has been an initial tendency in some quarters to treat environmental advertising as a special species of advertising, we believe that environmental advertising is, after all, advertising. Consequently, environmental advertising is already regulated under existing law. This raises the question as to whether there is any need for the special regulation of environmental claims.

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As states increase their interest in the environmental advertising issue, the constitutional issues surrounding it will become increasingly important. The Open Forum section of your program would appear to me to be an excellent opportunity to increase awareness of these issues on the part of all concerned.

I look forward to hearing from you and your favorable consideration of my request.

Sincerely,

Dennis Griesing
Director,
Public Affairs

CALIFORNIANS AGAINST WASTE FOUNDATION

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September 30, 1991

COMMENTS BEFORE
SECOND NATIONAL ENVIRONMENTAL SHOPPING CONFERENCE
OPEN FORUM ON LABELING

My name is John McCaull, and I am General Counsel for Californians Against Waste of Sacramento, CA. I am also the Associate Director of Californians Against Waste Foundation's Buy Recycled Campaign.

Californians Against Waste is the leading citizens' voice for recycling and waste reduction in the state. We sponsored the state's bottle bill as well as the mandate that requires that all cities and counties reduce their solid waste 25% by 1995 and 50% by the year 2000. We are also presently conducting a statewide Buy Recycled Campaign to promote the purchase of products and packaging made from postconsumer recycled materials. I have copies of our *Shopper's Guide to Recycled Products* with me and our *Guide to Recycled Printing and Office Paper*, which features papers with postconsumer content, will be available next week.

Vast numbers of products are now entering the marketplace touting environmental marketing claims. The number of products and the range of claims have outstripped the capacity of law enforcement and watchdog groups such as Californians Against Waste to even keep pace with the various claims. But it is crucial that we act to protect consumers from misleading environmental advertising. The power of consumer purchasing choices can have a major impact on cleaning up environmentally damaging production processes and reducing waste, but only if the public can trust marketing terms and information.

We are concerned both about the definitions of terms used in environmental marketing, and also about misleading and deceptive claims. Last year we sponsored California's Environmental Labeling law in order to provide definitions for a number of terms such as recycled, recyclable, biodegradeable, and others. Because most of the products marketed with environmental labels are sold across state borders, definitions such as the ones implemented by this law, which are also consistent with proposals in the Green Report, are important to reinforce on a national level. But national standards that are so lax as to be meaningless, such as recent proposals from the Recycling Advisory Council to define recycled paper, hurt more than help. We have to respond to and protect the public's interests, not just industry's.

Environmental Federation of California
Member

Printed on Recycled Paper to Protect the Environment

For similar reasons, environmental advertising claims only have positive benefits if the claims are specific and meaningful to the geographic area where they are made. A perfect case in point is Procter & Gamble's recent nationwide campaign touting the compostability of disposable diapers. A barrage of television, print and direct mail advertisements have flooded California and other states conveying the impression that disposable diaper composting is a current recycling option. To no one's surprise, consumers were quickly confused, and disposable diapers started showing up in recycling bins throughout the Los Angeles area. Yet there are no diaper composting facilities in California.

It is essential that the Federal Trade Commission, the Environmental Protection Agency and other enforcement officials put the consumer's interests first. We cannot afford to let the market be flooded with unregulated claims. Neither can we allow industry to set the terms of the debate over labeling definitions.

TESTIMONY ON LABELING

9-30-91
PRC/EPA ENVIRONMENTAL SHOPPING CONFERENCE

BY GINGER L. BUCHER
YORK CITY'S ENVIRONMENTAL ADMINISTRATOR

OUTLINE

1. Municipal Perspective - Flow control/disposition of waste is local and regional

2. Concerns:
   a) Consistency and standardization of terminology
   b) Designating actual consumer waste content
   c) Hazardous waste designation/instructions for disposal
   d) Making symbols clear and understandable
   e) Caution in promoting recyclable materials where local markets do not exist
      National brands vs. local outlets
   f) Dissemination of information to local recycling coordinators and solid waste professionals - when changes are considered. Notice when implemented.

Conclusion:

3. a) Proper labeling is necessary and critical. Confusion leads to consumer apathy. Standards for national brand labeling must occur to limit confusion.

   b) Since disposition of waste is local and regional, this must be taken into account when writing instructions.

   c) Extensive public education must accompany any new labeling techniques. Grocers, department stores, pharmacies and other distributors must be included along with local officials and environmental groups in educating the public

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PAMELA J. DRIVER

DIRECTOR OF GOVERNMENT RELATIONS

Foodservice & Packaging Institute
Comments on Environmental Labeling
National Environmental Shopping Conference
Baltimore, Maryland
9/30/91

The Foodservice & Packaging Institute (FPI) is a 58-year-old trade association representing the manufacturers of egg cartons, meat trays, yogurt, ice cream and other containers, cups, plates, utensils and other items made of paper, plastic and aluminum. Its members sell products nationally and internationally.

FPI endorses uniform, national guidelines for the truthful and non-deceptive presentation of the environmental attributes of consumer products and packaging. We strongly believe the Federal Trade Commission should exercise its statutory authority, pursuant to Section 5 of the Federal Trade Commission Act, and provide swift guidance on this matter.

FPI believes that consumers have a desire and a right to know about the environmental attributes of products and packages. This information can be very useful in promoting environmentally conscious purchasing habits and can stimulate consumer support for solid waste management programs such as recycling or composting.

We believe that consumers must be educated that a product can be recycled or composted. Without this capability, it will be difficult to attain widespread recycling and composting.

Without uniform guidance on the non-deceptive and truthful presentation of such information, consumers and business will continue to face confusion. Inconsistent state approaches magnify this problem and significantly inhibit companies from providing consumers with environmental information. Manufacturers of products and packaging for national distribution may become hesitant to provide any environmental information to the consumer because of the fear of non-compliance with conflicting, individual state regulations. Member companies have expressed concern about labeling and advertising new products and their attributes due to the patchwork pattern of labeling regulations in the nation.

FPI's members therefore urge the FTC to provide guidance on the non-deceptive and truthful presentation of environmental product information. National guidelines can provide a reliable and uniform playing field to facilitate the flow of commerce.

FTC guides will become a point of reference for state and local enforcement. A strong FTC presence can help prevent inconsistency that could lead to: consumer confusion and misunderstanding of environmental benefits, reluctance on the part of manufacturers to make environmental claims because of the impossibility of complying with divergent local standards for nationally marketed products, as well as the diminishment of the incentive businesses otherwise would have to develop new products and packaging because of lack of opportunity to inform consumers about the environmental benefits. FTC guidelines can help avoid consumer confusion and the unnecessary cost which results from manufacturers having to keep multiple inventories to deal with a multitude of non-uniform approaches.

The Foodservice & Packaging Institute believes FTC guidance could alleviate concerns about national communication of product and packaging attributes while complementing FTC's traditional case-by-case enforcement approach. National guidelines should provide the impetus for states to follow the FTC lead; however, if local authorities choose not to adhere to FTC guidelines, we advocate that the FTC consider adopting a preemptive trade regulation rule.

The FTC should take account of voluntary consensus standards (such as those of the American Society for Testing and Materials and for international markets - The International Standards Organization) which are likely to be developed over time. The guides should allow manufacturers and marketers to make contextual claims that are factually correct and non-deceptive. The guides should not directly or by implication impose packaging or product standards. Manufacturers should be allowed to communicate factual information about the nature and amount of recycled material. Due to the complexity of environmental issues and individual community waste management practices, guidelines should ensure flexibility, recognizing that much of the knowledge in this area is based on an evolving science and technology.

In summary the Foodservice & Packaging Institute desires national guidelines on environmental marketing claims and feels it is the responsibility of the Federal Trade Commission to issue such guidelines. We, at FPI stand ready to assist in the development of these guidelines.

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DRAFT OUTLINE FOR

OPEN FORUM ON LABELING

Testimony Presented by Jeanne M. Hogarth, Ph.D.
Consumer Economics & Housing, Cornell Cooperative Extension
Cornell University, Ithaca, NY

September 30, 1991

I. Reminder that labeling is only a part of an entire system of environmental decisions and behaviors; there is no simple solution

A. "Recyclable" only works if materials are collected and re-processed and re-manufactured (need a supply and a demand)

B. Consumers, government policy makers and industry need to keep in mind that there is an entire fabric of the environment that is interconnected: packaging, solid waste, toxics, water and air quality, etc.

1. In addressing the smaller issues, we cannot lose sight of the bigger picture.

C. Consumers may/will place different weights on different product characteristics (price, quality, "environmental impact," convenience, safety)

1. Even within the "environmental" category, issues of landfill space, water quality, air quality, and energy may/will have different weights for consumers and communities

II. Results of 2 Cornell studies on environmental concerns and consumer choices

A. Effect of user fees for trash removal on recycling behaviors and purchase decisions (S. Stone study, conducted in upstate New York)

1. Results reveal that user fees do encourage higher levels of recycling in communities and do encourage selective shopping to reduce packaging

a. Nearly 2/5 (39%) report paying more attention to packaging while shopping

b. Nearly 1/3 (32%) report trying to reduce packaging when shopping

c. Many report buying less of materials not collected for recycling; e.g. 25% report buying less plastic (not collected at recycling centers in county at time of survey)

2. Results vary by age, marital status, income, educational level, sex, employment status (proxy for time as a resource)

a. Implications for educational programs and potential effectiveness of policies

B. Effect of intensive consumer education programs on shopping decisions and waste reduction (M. Reese study, conducted on Long Island, with funding from EPA)

1. Preliminary results will be presented from this on-going study; expect to present information on:

a. Proportion of respondents who purchase products that are:

recyclable
reusable
made of recycled materials
packaged in reduced/no packaging

b. Sources of information consumers use in determining the reusability, recyclability, recycled content, and/or reduced packaging.

2. Anecdotal evidence of difficulties in implementing "environmental shopping" strategies

ENVIRONMENTAL LABELING TESTIMONY

Greg Harder
Pennsylvania Department of Environmental Resources
at the
Second National Environmental Shopping Conference

September 30, 1991

Thank you for this opportunity to provide testimony on environmental labeling. My name is Greg Harder and I am representing the Pennsylvania Department of Environmental Resources.

Environmental labeling is important to the Department because:

1) it provides clear guidance to consumers who desire to be environmentally sound shoppers;

2) it supports recycling by promoting the purchase of items made with recycled content; and

3) it deters manufacturers from misrepresenting their products and packaging.

The Department has been involved in the area of environmental labeling for the past three years in conjunction with the northeast Recycling Council (NERC) to develop uniform definitions and standards for the use of recycling-related labels.

NERC has worked with the Coalition of Northeast Governors (CONEG) which represented industry, the environmental community, and nine states to develop consistent definitions for the terms "recycled", "recyclable," "reusable," and "source reduced."

NERC released guidelines in November 1990 to assist its member states and others develop uniform laws, rules, and regulations concerning labeling for the terms "recyclable," "recycled content," and "reusable."

Two NERC member states have implemented labeling standards consistent with the NERC guidelines. New York State has promulgated regulations and Rhode Island has implemented a law. If national standards are developed, New York and Rhode Island will modify their state standards accordingly.

The Federal Trade Commission (FTC) has formed a task force along with the U.S. Environmental Protection Agency and the U.S. Office of Consumer Affairs to address issues raised by environmental advertising claims. NERC representatives met with the joint task force in May 1991 to discuss the NERC labeling guidelines and their development process.

The FTC developed its own guidelines and held public hearings on environmental claims in product labeling on

July 17-18, 1991. NERC submitted comments on the FTC labelling guidelines for consideration.

On May 22, 1991, the Task Force of Attorneys' General released "The Green Report II". The report was the result of a two year effort aimed at "truth in environmental labeling", with input provided by business, environmental groups, and consumer groups. The most important consensus among these groups was that uniform national guidelines or standards for environmental marketing claims are needed.

We are currently awaiting action from the EPA on proposed minimum national standards for the terms "recyclable" and "recycled content". These proposed standards are scheduled to be published in the October 4, 1991, Federal Register.

The Department makes the following recommendations in the area of environmental labeling:

1. We need to send clear and consistent messages to consumers and avoid misleading claims.

2. Standards need to be implemented quickly to avoid further confusion among consumers.

3. National standards are more appropriate than state or regional standards because the markets for products and recyclable materials are national or even international.

4. The use of the term "recyclable" must consider the availability of local opportunities to recycle.

5. "Recycled content" must be a measure of post-consumer recycled content, not manufacturing scrap, not sawdust, but on the materials collected in our recycling programs.

6. Environmental labeling should clearly distinguish between attributes of the package and attributes of the product.

7. Finally, labeling standards should promote waste reduction, recycling, and market development for recyclable materials.

In closing, the Department hopes the Federal Government will assume a leadership role in the area of environmental labeling. In the interim, we will consider the NERC guidelines when developing Pennsylvania's standards for labeling.

CINDY DRUCKER

WEBSTER

WEBSTER INDUSTRIES

COMMENTS PRESENTED AT THE EPA & PENNSYLVANIA RESOURCES COUNCIL

NATIONAL ENVIRONMENTAL LABELING CONFERENCE

September 30, 1991

Thank you for the opportunity to present our views regarding environmental labeling. As background, Webster Industries is a $150 million manufacturer of high recycled content plastic trash bags and merchandise bags. We recycle over 50 million pounds of polyethylene plastics each year -- about 25% of which is postconsumer waste.

Our Renew trash bags contain over 80% recycled content as verified by an independent third party. We strongly support recycling as a means to help solve the nation's solid waste problems.

Given the brief time today, I will focus my comments on the need for federal environmental labeling legislation, with uniform definitions and strict standards, including minimum recycled content.

National legislation is pro-consumer as well as pro-business. National legislation, including standards and definitions, will:

- give consumers confidence in green products and encourage business to invest in new environmental technologies and processes.
- protect companies manufacturing truly environmental products from unfair competition by companies making invalid or false claims.
- de-politicize the environmental claim arena and shift the focus of effort from the legal and political arenas to actually advancing recycling.
- eliminate the "gray" area inherent in the interpretive nature of guidelines and clearly distinguish between intentional and unintentional fraudulent claims by eliminating loose, case-by-case interpretations.

The second area I want to discuss addresses the need for consistent and uniform definitions for environmental terms, used nationwide.

Standard definitions will eliminate the use of several interchangeable terms for the same product attribute or material, such as "reprocessed material" and "postconsumer waste," helping to alleviate current consumer confusion.

Webster Industries, 58 Pulaski Street, P.O. Box 3119, Peabody, Massachusetts 01960
A Division of Chelsea Industries, Inc. Phone: 508-532-2000

To illustrate this point, our Renew trash bags are certified by Green Cross to contain 80% recycled plastics. I know it has less than 20% virgin content. However, depending on varying definitions for recycled content, the claim would change to:

* 20% postconsumer/60% preconsumer material, or
* 20% recycled/60% recovered material, or
* 5% recycled household waste (virtually a meaningless level), or
* 20% recycled postconsumer content.

Given the highly political and legal profile of environmental claims, it is often easier, safer and cheaper for manufacturers to stay on the sidelines and not make truly pro-environmental products. This is clearly not a solution. We need a common, national set of definitions.

The third area I want to address involves the need for tough minimum recycled content standards.

Instituting recycling systems, while a critical component to forwarding recycling efforts, will not produce meaningful results without creating markets for utilizing recyclables and producing recycled content end-products.

Webster Industries supports a high, total recycled content standard. Since 95% of industrial plastic waste is already being recycled, mandating high, total recycled content will automatically force the use of postconsumer material. Increasing the recycling of postconsumer material is an important environmental goal. But it is one that can be achieved by instituting a high, total recycled content standard, without the added complication of pre- and post-consumer distinctions.

Source reduction is not equivalent to recycling as a means for lowering dependence on virgin material. While source reduction is a critical component of an integrated waste management system, manufacturers cannot achieve the same reduction in virgin material using source reduction as they can utilizing recycled content. For example, a trash bag made of 100% virgin material would need to be source reduced by 50% -- not very likely or doable -- in order to have the same environmental benefit as a bag containing 50% recycled waste and 50% virgin material. In weighing the environmental benefit of a product, the total amount of virgin material used should be the key factor.

In conclusion, with uniform definitions and meaningful standards, environmental claims and labeling can be a valid, useful guide for concerned Americans, and a genuine tool in setting national environmental policy. Thank you.

# # #

WHAT DO I THINK ABOUT THE FUNCTION OF ENVIRONMENTAL LABELING?

Statement from Hollister Knowlton, consumer and environmentalist*

As an individual, an environmentalist, an educator, and a consumer, I strongly support the concept of environmental labeling as a means to inform consumers as to which, if any, brand of a given product is the least environmentally damaging.

At its best, such a labeling system could raise consumers' consciousness about the impact of their buying habits on the environment, educate them as to which products are less harmful than others, and, ideally, even change some of their behaviors.

My concerns about labeling center on the following:

1. As many others will probably state today, there is a great need for uniform guidelines for advertising claims and for definition of terms such as "biodegradable" and "ozone safe". I favor the suggestion that EPA set strict standards that must be met before a manufacturer can make any claims about its products' environmental safety.

2. What happens when a product's package is environmentally sound, but the product itself is not? Or if the product is "good," but the packaging is not? My understanding is that under the Green Cross system, its label has been awarded in such cases.

I believe that both the product and its package <u>must</u> be evaluated together, and that failure to do so risks sending confusing messages to the public. Therefore, I favor Green Seal's approach - regrettably a painfully slow process - over that of Green Cross.

3. Less clear to me is how to handle products that, in general, are wasteful of resources (e.g. paper towels or overpackaged frozen dinners) or are environmentally harmful (e.g. oven or toilet bowl cleaners or spray bathroom deoderizers) - especially when less harmful or wasteful alternatives are available.

Does giving a green label to the "best" brand among these products imply endorsement of the use of such a product? If the category is ignored, hasn't the opportunity been lost to encourage people to use a less damaging brand, or form of that particular product?

I would favor whichever approach is determined to be the most effective means to educate and/or to change consumer behavior.

****

NOTE: The Pennsylvania Environmental Council has not yet taken a formal position on environmental labeling although it recognizes the advantages that a well-designed system would offer.

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OUTLINE:

TOPIC: Shelf Labeling & The Model Community Program

I. Name, Location, Interest

II. Body

A. History of REACH
B. History of the Model Community Program
C. Aspects of shelf labeling within the model community program

1. Integrated waste reduction plan
2. Education for customers, model owner and volunteers
3. Is adaptable to local conditions
4. Encourages additional waste reduction ideas

III. Conclusion

Summary and restate

COMMENTS ON PRODUCT LABELING
for
THE SECOND NATIONAL ENVIRONMENTAL SHOPPING CONFERENCE

by
Nancy Lilienthal
Director of Chemical Hazards Prevention Program
INFORM, Inc.

I would like to make a few comments about the labeling of risks posed by the use or disposal of consumer and building products containing toxic chemicals. These comments are based on findings of INFORM's forthcoming directory, *Tackling Toxics in Everyday Products*, which lists more than 250 organizations in the US and abroad concerned with problems caused by consumer and building products containing toxic chemicals. These organizations include public interest groups, government agencies and legislative offices, labor-related organizations and trade and professional associations.

The participating organizations are concerned about products such as paints, home pesticides, building materials and cleaning products that, when used or disposed of, contribute to such problems as indoor air pollution, exposure to home pesticides, smog, and pollution from the disposal of household hazardous wastes. While the directory does not focus on the health and environmental impacts of manufacturing such products, these better-recognized manufacturing impacts are clearly also important.

In an opinion survey answered by 128 of the organizations participating in the directory, INFORM asked the survey respondents to rank 21 possible policy and research steps as to their usefulness in alleviating problems caused by products containing toxic chemicals. Better product labeling and packaging by product manufacturers to help reduce exposure to toxic chemicals in products ranked high on the list -- number four -- with 121 out of 128 respondents, or 95%, rating it useful (as opposed to not useful, counterproductive, or no opinion).

In addition, at least three organizations listed in the directory have been actively pursuing legislation or regulations that would provide better labeling of product hazards from toxic chemicals. Among these initiatives are those seeking to give consumers notification as to the specific nature of the risks posed by products when the products pose a risk of cancer or birth defects above a certain risk threshold, as is now required for art materials.

Environmental labeling, or labeling with clear signs or symbols classifying products as to their environmental soundness more broadly, received the sixth highest rating (91% voting it useful).

While opinion survey respondents thus gave high ratings to product labeling, they indicated that other important measures are also needed in conjunction with or to facilitate better labeling:

- The highest rated option (rated useful by 99% of respondents) was greater education of consumers and employees (by government, schools, public interest groups, health professionals and others) on the use of less toxic or nontoxic products.

- The second highest rated option (96%) was product standards to limit health and environmental exposures to toxic chemicals in products, for example limits on emissions of toxic chemicals from specific products or limits on the toxic chemical content of products.

- Respondents (95%) also stressed the need for more data on the risks of, and public health and environmental exposures to, specific toxic chemicals in consumer and building products, in order to prioritize chemicals of concern. By increasing the knowledge about risks to be labeled, this step could greatly facilitate the labeling process.

Based on the concerns and opinions of the organizations participating in the directory and the opinion survey, INFORM would like to present the following conclusions:

- Better product labeling as to potential risks from toxic chemicals is important in helping product purchasers to buy knowledgeably and to reduce health and environmental exposures to toxic chemicals in products.

- Environmental or eco-labeling should take into account the health and environmental risks of product use and disposal posed by toxic chemicals in products.

- Additional scientific information on toxic chemical risks from products is badly needed.

- We should not ignore steps in addition to product labeling that might be taken to educate the purchasers and users of products or to limit, through regulation or voluntary industry standards, the risks posed by toxic chemicals in products.

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