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Marketing and the Tragedy of the Commons: A Synthesis, Commentary, and Analysis for Action

Clifford J. Shultz II and Morris B. Holbrook

The authors contend that solutions to the most pressing environmental challenges will result from understanding and solving social traps such as the commons dilemma. They propose a synthesis for analysis and action to suggest that marketing's stakeholders can cooperate to contribute solutions and ultimately develop programs that help ameliorate the tragedy of the commons.

Environmentalism will be one of the greatest challenges in the twenty-first century. The effect of marketing activities on environment preservation therefore matters increasingly to many marketers, consumers, and marketing policy scholars (e.g., Ellen, Wiener, and Cobb-Walgren 1991; Granzin and Olsen 1991; Milne, Iyer, and Gooding-Williams 1996; Pickett, Kangun, and Grove 1993; Pieters et al. 1998; Pilling, Crosby, and Ellen 1991; Schwepker and Cornwell 1991). Marketing enterprises have discovered that ecological issues often can provide a source of competitive advantage (e.g., Gifford 1997). Thus, businesses now focus on the problem of sustainable growth or development (e.g., Elkington 1994; Hart 1997; Ruckelshaus 1989), whereas marketers aspire to ecological (e.g., Fisk 1974), environmental (e.g., Polonsky and Mintu-Wimsatt 1995), green (e.g., Ottman 1993; Wasik 1996), or, more recently, enviropreneurial (e.g., Hartman and Stafford 1998; Menon and Menon 1997; Varadarajan 1992) marketing. But, when we consider the plethora of strategies, products, and advertising campaigns that purport to be "green," we cannot help but wonder how many of these truly work toward environmental protection (cf. Beder 1997; Gray-Lee, Scammon, and Mayer 1994; Kangun, Carlson, and Grove 1991; Kilbourne 1995). Even when well-intentioned, these ecologically oriented green efforts and activities may be misguided. Worse, they sometimes may represent cynical marketing tactics such as "greenwashing"—deceptive claims to cover up assaults on the environment—that would benefit from modification or termination (cf. Stauber and Rampton 1995, p. 125).

In short, "it's not easy bein' green" (e.g., Judge 1997); marketers and consumers face the challenge of determining which activities are truly green enough to serve the long-term best interests of the environment and its inhabitants.

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But resolving these problems requires fresh thinking (cf. Daly 1996; Hart 1997; Kilbourne, McDonagh, and Prothero 1997; Nill and Shultz 1997; Shabecoff 1993; Thompson 1987). Toward this end, one important set of issues concerns the extent to which business activities, marketing plans, and consumer products are *commons-friendly*, that is, the extent to which they work toward sustaining commonly shared natural resources.

More than 30 years ago, in "The Tragedy of the Commons," Garrett Hardin (1968) argued that the world's most compelling problem was selfish exploitation of the planet's scarce resources. Hardin's arguments inspired a generation of social scientists to examine various forms of commons dilemmas. Although the empirical findings from many of these studies were enlightening, they did not succeed in halting—much less reversing—the assault on our common resources, which continues at an accelerating pace. We submit that, in the interest of human survival, marketers must take a more proactive role in the management of shared resources by involving multiple stakeholders in their decision making and seeking competitive advantages through legitimate green marketing, that is, through commons-friendly marketing. Accordingly, in this article, we examine the commons dilemma as a topic of interest to marketing strategists, policymakers or analysts, and consumers. Specifically, we discuss the logic behind the commons dilemma, we review relevant perspectives from other disciplines, we propose a synthesis for analysis and action, and we propose potential roles for marketing in the resolution of such conflicts. In this, we hope to inspire further research and encourage professional efforts toward the creation of marketing solutions to the commons dilemma.

The Commons Dilemma, Revisited

In general, the "commons dilemma" refers to a phenomenon in which the members of a social group face choices in which selfish, individualistic, or uncooperative decisions, though seeming more rational by virtue of short-term benefits to separate players, produce undesirable long-term consequences for the group as a whole. The problem has baffled humanity for centuries (cf. Aristotle [340~ BC] 1976; Lloyd 1833); obvious current examples include the overconsumption of water in arid climates, the unwise harvesting of trees to meet the demands of lumber and paper markets, or the noise- and pollution-causing use of cars. Here and else-

where, individuals in most societies achieve short-term gains from consuming as much, polluting as extensively, and having as many children as possible; but societies, over time, suffer as a result (Dawes 1976). Furthermore and ironically, many of these problems have arisen because of economic progress, that is, because the checks that prevailed until the last 200 years or so have been destroyed by the bittersweet fruits of modern technology in general and by gains in industrial production or medical care in particular (Dawes 1980). In this context, an individualistic pursuit imperils not only our common base of resources, but also our very existence (Hardin 1968). Notice that this intractable commons dilemma reflects the combination of circumstances that Rangan, Karim, and Sandberg (1996, p. 51) deem most "disadvantageous" and most likely to make the finding of marketing-based solutions "difficult." Thus, though plenty of adjacent social issues also merit consideration, we confine our attention to this most problematic facet of social marketing.

A Synthesis of Social Science and Marketing Implications

Building on the literature in the social sciences and marketing, let us propose a synthesis for analysis of commons-related problems as a guide to action encouraging their resolution. We first review the background of attention to the commons problem in the social sciences and marketing. We next provide a synthesis of commons-related issues and indicate a set of themes to suggest one or more marketing-oriented strategies for resolution. Each issue and strategy then receives more detailed discussion in developing our understanding of the various themes in the synthesis.

Background in the Social Sciences: Externalities and Social Traps

Economists have shown a keen interest in common property and resource management (cf. Coase 1960; Galbraith 1973; Olson 1965; Sagoff 1988). Their work has assessed the commons dilemma as involving externalities in the economic relations between people or time periods (e.g., Dasgupta 1982), often with the conclusion that common resources are managed best through variances in prices (to reflect the "true" costs of product usage) and/or by regulatory controls (such as taxation and/or usage laws). Meanwhile, behavioral scientists (cf. Dawes 1980; Edney 1980; Messick and Brewer 1983) view the commons dilemma as a social trap, that is, as an arrangement of rewards and punishments in which behavior that rewards an individual in the short-run implies long-run punishment for that and at least one other individual (Cross and Guyer 1980; Platt 1973).

Note that Cross and Guyer (1980) and Messick and Brewer (1983) make distinctions among various types of social dilemmas. For example, in addition to social traps, there exist social fences and individual traps. In social fences, short-term aversive consequences deter people from performing an act that would produce long-term positive benefits to themselves and others. In individual traps, a single person pursues immediate gain, but with long-term deleterious effects only for that person. The distinguishing characteristic of social dilemmas, including the commons

dilemma, is immediate individual incentive to engage in behavior that eventually will be harmful to that person and also to others (the larger group or society) who rely on the shared commons; thus, both group (collective) and temporal (long-term) components are part-and-parcel constituents of the commons dilemma (Messick and Brewer 1983). In the context of the tragedy of the commons per se, Dawes (1980) suggests that N participants must decide between D (defecting) and C (cooperating), where $D(m)$ is the payoff to a defector when m individuals cooperate; $C(m)$ is the payoff to a cooperater when m individuals cooperate; and a social dilemma implies that (1) $D(m) > C(m + 1)$ and (2) $C(N) > D(0)$. In summary, the "tragedy" is that (1) the relevant incentives work toward the lower-payoff selfishness, yet (2) all individuals in society or interdependent groups receive a lower payoff when acting selfishly than when cooperating.

Given the ubiquitous positive and negative components in each individual's socially relevant decisions, particular interest attaches to the factors that potentially induce subjects to decide in favor of cooperative choices amid powerful incentives to choose selfish or "defecting" alternatives. The challenge confronting marketers is to devise and reconcile strategies for managing elements of the marketing mix so as to influence behavior in ways that help resolve various commons dilemmas that have a deleterious effect on the environment and the various stakeholders that share it (cf. Andreassen 1995, p. 141).

Background in Marketing

Although marketing scholars have examined environmental issues since the early 1970s (e.g., Anderson and Cunningham 1972; Fisk 1973; Kassarian 1971), the marketing literature makes few explicit references to the commons dilemma. Partial exceptions include work by Nason (1989), Pieters (1991), Wiener and Doescher (1991, 1994), Wiener (1993), Berger and Kanetkar (1995), Rangan, Karim, and Sandberg (1996), and Pieters and colleagues (1998). Nason (1989) suggests commons implications for social marketing as the summation of transactions that results in effects on all. Pieters (1991) notes commons-related problems when discussing a waste-separation program; Pieters and colleagues (1998, p. 215) contend that environmentally friendly consumer behavior is a "large-scale social dilemma." Wiener and Doescher (1991, 1994) extend a stream of research on prosocial behavior and "selling brotherhood" (cf. Bloom and Novelli 1981; Ritchie and McDougall 1985) to posit communication and cooperation as potential strategies for solving social dilemmas. Rangan, Karim, and Sandberg (1996) address what we call commons problems as their fourth type of social cause and suggest approaches more drastic than those recommended elsewhere. Thus, these studies open what has remained a rather small crack in the shutters through which marketers have begun to view the commons dilemma.

More generally, the broader themes of socially conscious, conservation-oriented, and green marketing have received considerable attention, as have some of the underlying factors that might determine environmental behavior for individuals and families (e.g., Taylor and Todd 1995, pp. 192-93) and for companies (e.g., Drumwright 1994). The proposition that marketing scholars and practitioners should

Table 1. Synthesis of Commons Resolutions and Implications for Marketing Engagement

Remedy	Implications for Marketing Engagement
Regulation	Examples: cost/benefit incentives through privatization, taxes, fees, or prices
Organization	Examples: partnerships, alliances
Social responsibility	Example: inculcation of altruistic values
Communication	Examples: small-scale group discussion, large-scale educational campaigns; multistakeholder dialogue, negotiated outcomes, and feedback through verification measures over time

actively pursue solutions to environmental problems in general and to the commons dilemma in particular seems especially compelling when marketing and consumer cultures are castigated so frequently for encouraging reckless resource depletion (cf. Anderson and Challagalla 1994; Kilbourne, McDonagh, and Prothero 1997).

Reflecting such beliefs, the responsible or prosocial use of marketing strategy is a logical extension of the economics and psychology literature on shared resources and social traps explored here. Indeed, prosocial marketing appears well suited to provide solutions to some aspects of the commons dilemma (cf. Andreasen 1995; Nason and White 1981). In this connection, we believe that solutions may emerge in at least four ways, as represented by the proposed synthesis to which we now turn.

A Synthesis of Commons Resolutions and Implications for Marketing Engagement

The elements of our proposed synthesis of commons resolutions and implications for marketing engagement appear in Table 1. These derive from a review and distillation of the relevant literature. We believe they are fundamental to an analysis of factors related to commons-based issues and guides to potential marketing-oriented action. In a sense, they might be considered new thoughts and strategies for an old problem. Some solutions depend on changes at the individual level, whereas others arise from coordinated, organized, or structural changes at the group, transgroup, or collective level. Furthermore, some resolutions focus on how actions affect individual or joint selfish interests in the short run, and others on how they influence collective considerations based on social welfare in the long run. Thus, Table 1 includes four key components: regulation, organization, social responsibility, and communication. Note that these distillates should be viewed as partially overlapping themes rather than as distinct, mutually exclusive categories. We review each theme, with attention to its development in the social sciences and its prescriptive implications for marketing.

Regulation

Some solutions to commons-related dilemmas alter the pattern of self-oriented incentives that characterize social situations (Hardin and Baden 1977). Such micro-level, self-

oriented resolutions often hinge on regulatory measure(s) imposed on users of the commons by an authority figure interested in reducing depletion or misdirection of scarce resources. This idea, an essential foundation for governmental intervention, is an old one (cf. Hobbes 1651; Locke [1699] 1967). Similarly, Hardin (1968, p. 1243) suggests abandoning laissez-faire mentality and implementing "mutually coercive devices" to invoke cooperative choices by means of taxes and laws typically associated with regulation. This solution presupposes the establishment of some superordinate authority to address the commons dilemma but thereby raises a second age-old quandary: Who will govern those who govern the commons?

Experimental results suggest that subjects prefer to elect leaders to manage resources when they believe that others harvest excessively (Messick et al. 1983). However, this tendency appears to be stronger for (say) Dutch subjects (Samuelson et al. 1986) than for Americans (Messick et al. 1983), which suggests that cultures differ on the issue of when leadership intervention is desirable and thus helps explain the diversity of political systems found throughout the world.

Behavioral scientists have examined the effects of changing payoff contingencies. Not surprisingly, changing incentives to reward (punish) defection decreases (increases) cooperative behavior (e.g., Komorita, Sweeney, and Kravitz 1980). Also, subjects exercise self-restraint when such restraint helps increase the overall size or quality of the resource pool (e.g., Jorgenson and Papciak 1981).

Another solution to certain types of collective social dilemmas involves the conversion of community-owned resources into privately owned resources, the logic being that private-property owners will have vested interests in preserving their personal property (Dasgupta 1982). Experimental research suggests that when resources are held privately, they are harvested nearly optimally if harvest management is publicly visible (e.g. Messick and McClelland 1983). This finding hints that information sharing or communication is integral to resource management (a theme we develop subsequently) and suggests that privatization alone should not be considered a panacea for the commons dilemma.

In contrast to privatization, taxation schemes or fee schedules show some promise as ways to resolve commons dilemmas. For example, taxes have helped control toxic waste (cf. Tietenberg 1985). Also, usage fees can help discourage abuse of the commons by assigning costs when they are incurred (cf. Cairncross 1995).

With respect to specific marketing-based resolution strategies, traditional manipulations of the marketing mix, in concert with prudent regulation, may abet commons preservation. It would be advantageous to study the effects of the marketing mix on defecting or cooperative consumer behavior. Many aspects of product development, distribution, and pricing vitally affect the commons for better or worse. These areas of impact open opportunities for the resolution of some commons dilemmas through the design of regulatory strategies that affect such areas as product design, packaging, and pricing decisions.

The differential pricing of electricity during peak versus off-peak hours would be an obvious example. Price is a par-

ticularly salient variable to many consumers when they are making what they believe to be environmentally friendly purchase decisions (e.g., Antil 1984). But the overarching message of the price-related literature indicates that, though many consumers generally are willing to pay more for green products, they are not willing to pay much more (cf. Berger and Kanetkar 1995), perhaps due to the disbelief among many consumers that green products add any real value to self or environment. To overcome this disbelief, education on the demand side must prepare the way for acceptance of commons-sensitive offerings created on the supply side (cf. Simmons and Widmar 1990).

Organization

By "organization," we mean group cooperation or group formation and incentives to create social structures or change interpersonal boundaries for the benefit of the commons. Such structural changes traditionally have been the domain of politicians, economists, and political scientists. Structural changes work through mechanisms that are likely to affect self-oriented incentives throughout the group. For example, one such structural determinant involves group size.

From one perspective, reducing group size often can work toward resolving the commons dilemma. Anecdotal evidence, lay observations, and experimental findings all suggest that incentives toward cooperation or self-constraint tend to increase as group size decreases (Komorita and Lapworth 1982). The reasons for this phenomenon are unclear and seem to be varied. Perhaps payoffs change as group size increases (Bonacich et al. 1976); perhaps individuals cooperate only when others do but perceive large groups as harboring noncooperators; or perhaps individuals in larger groups believe that their defecting decisions are less visible or have less impact on group welfare (Messick 1973).

Whatever the reason for the inverse relationship between cooperation and group size, a solution to ecological problems through population reduction does not appear imminently feasible. The population pressures on our global commons are enormous and increasing rapidly, despite various birth-control technologies and intervention policies (cf. Bartlett 1994; Keyfitz 1994).

More feasible strategies may involve approaches that actually increase group size but with an emphasis on the collective pursuit of self-interest. This strategy might be viewed as a change in the way firms and groups organize, the way in which they structure, cooperate, and form boundaries and alliances (cf. Cairncross 1992; Milne, Iyer, and Gooding-Williams 1996). For example, Merck & Co. cooperated with the government of Costa Rica, whereby that country received US\$1 million and a percentage of profits by setting aside one-quarter of its rain forest as a reserve area to be used for the prudent and responsible development of biodiversity samples (Chichilnisky 1992). Environmentalists also have teamed with retailers and furniture manufacturers to form buyers' groups that demand better forest-management practices, including independent verification of those practices (Ipsen 1997). Most recently, environmentalists, state and federal governments, and the Pacific Lumber Company collaborated to preserve 10,000 acres of redwood forest (Christensen 1999). Some environmentalists

might argue that optimal commons-preserving scenarios in each of these cases would have prohibited any access or exploitation of forests. We take the position that negotiation, compromise, and, ideally, win-win outcomes for multiple stakeholders are expedient; similarly, we believe that, in most cases, incremental rather than extreme measures of protection are less likely to alienate corporate stakeholders and consequently more likely to lead to the longer-term desirable outcome of better protecting the commons, which is the goal advocated by environmentalists.

Although many of these organizational efforts may begin altruistically, none will be sustained or perhaps even considered desirable without a self-interested favorable impact on the corporate bottom line. Thus, such efforts have entered a critical period in which greater numbers of managers will need to recognize that the bottom line must "factor in" preservation of the commons as a precondition for the firm's long-run survival and, therefore, as an ingredient in long-term profitability (e.g., Gifford 1997). To state the case bluntly, net present value suffers when discounted cash flows lack long-term potential. In this spirit, the emergence of the Environmental Defense Fund and subsequent cooperative efforts between corporations and environmentalists hint at possible win-win scenarios between the profit motive and responsible commons management.

Social Responsibility.

Although we believe large-scale corporate involvement in resolutions to commons dilemmas may require profit incentives, some people may choose to respond cooperatively because of other-oriented concerns that altruistically place the collective welfare above self-interest (cf. Schwartz 1977). Thus, Edney (1980) suggests that the crux of the commons dilemma is not so much an issue of selfish gain through rationality of choice as it is a conflict of human values (cf. Granzin and Olsen 1991; Vining and Ebreo 1990). Saemann (1992, p. 190) frames the issue similarly and urges consumers to embrace the realities of social interdependence, namely, *Gemeinschaftsgefühl*, or a sense of social interest, community feeling, and humanistic identification that fosters "oneness in interdependence" rather than "ego-centric independence" from humanity. Thompson (1995) has argued for the need to address contextual factors that should influence appropriate and responsible decision making when confronted with dilemmas. From these perspectives, we might conclude that education can teach members of the commons about the nature of social dilemmas and the need for social responsibility in individual actions. When experimental treatment groups have been coached on the long-term consequences of their actions or instructed on the moral obligation of selflessness, significant increases in cooperative behavior have occurred (e.g., Stern 1976). Furthermore, people tend to be more socially responsible in their decision making when they recognize the importance of the collective welfare and receive feedback on the impact of their choices (Sweeney 1973).

Brewer (1981) has suggested that cooperative solutions to collective social dilemmas may be facilitated by exploring the constructive incentives that arise from social identity. The sense of membership in a common group probably enhances the individual's willingness to exercise personal

restraint in the interest of collective welfare (Messick and Brewer 1983). Conformity pressures seem to be higher in more cohesive groups, and members of an "in-group" tend to perceive other members more favorably, particularly in terms of trustworthiness, honesty, and cooperativeness, while perceiving themselves as part of some common fate (Rabbie and Horwitz 1969).

But, despite the potentially powerful effects of social responsibility on individual decision making, in the context of environmental marketing issues, these effects may be unpredictable and are affected by many factors and forces (e.g., Ölander and Thøgersen 1995). For example, loyalties to groups and their social norms may shift (Messick and Brewer 1983); altruism with regard to commons-friendly behavior may be situation-specific (e.g., Hopper and Nielsen 1991) or simply secondary to internalized personal norms (Thøgersen 1995). At bottom, as discussed previously, attempts to solve social dilemmas may require institutional or structural changes that support such efforts at the group level.

In drawing on potential marketing-related resolutions, such change could not occur without technological progress (discussed subsequently) and profit incentives working together. But more fundamentally, it cannot occur unless consumers care increasingly, because of revisions in their consumption-related needs and wants, and unless people believe that their commons-friendly behavior will have an impact (cf. Berger and Corbin 1992; Kinneer, Taylor, and Ahmed 1974). To the benefit of the commons and ultimately the human condition, there now exist segments of consumers that refuse to buy furniture made from rain-forest wood, cosmetics tested on animals, or food served in styrene containers (e.g., Schwepker and Cornwell 1991; Wescott 1992). For some customer segments, offering commons-friendly products or emphasizing this theme in a marketing communication strategy has become a potential source of competitive advantage or a viably unique selling proposition (cf. Gross 1990), as was the case with the forest-preservation campaign by the World Wildlife Fund.

But, as indicated previously, applications of green orientations to consumption, marketing, and protection of the commonly shared environment raise a host of issues awaiting resolution. Since the formal organization of green political movements in the Netherlands and Germany during the mid-1970s, the term "green" has acquired so many meanings as to relinquish any claims to clarity (cf. Eckersley 1992). This confusion—coupled with cynical abuses by some marketers and ensuing consumer skepticism—has sparked efforts by governments and the private sector to establish generally accepted standards for green claims (cf. Gray-Lee, Scammon, and Mayer 1994). The Federal Trade Commission (FTC) (Code of Federal Regulations 1994, p. 111) moved to curtail abuses of "environmental marketing claims." These FTC guidelines address the prominence and clarity of qualifications and disclosures; distinctions between product benefits and packaging; and the veracity of environmental marketing claims regarding, for example, general environmental benefits, degradability, compostability, recyclability, waste reduction, refillability, and ozone friendliness. Simon (1992) argues persuasively that no product should be considered green unless it meets the

following criteria: reduced raw material content, high recycled content (e.g., aluminum cans); nonpolluting manufacture with nontoxic materials (e.g., chlorofluorocarbons, deinking solvents); no unnecessary animal testing (e.g., cosmetics); no unfavorable impact on protected species (e.g., dolphin-safe tuna); low energy consumption during production, use, and disposal (e.g., efficient light bulbs); minimal packaging (e.g., fast foods); reuse/refill of packages when possible (e.g., beverage or detergent containers); long, useful life with updating capacity (e.g., office machines); postconsumption collection/disassembly systems (e.g., automobiles); and remanufacturing capability (e.g., closed- or partial-loop reuse as in composting or nontoxic incineration) (cf. Samli 1998).

More succinctly, Ottman (1993, p. 49) defines green products as "typically durable, non-toxic, made from recycled materials and minimally packaged" but, perhaps more important, also asserts that green is "a relative term describing those products with less impact on the environment than alternatives." Ottman further states that regional conditions, technological changes, attitude shifts, and regulatory changes all determine what consumers deem green products and behavior. This relativistic orientation raises an important question: Is a product that assaults the environment green simply because it replaces a product that was an even more egregious threat?

Such difficulties in determining green-ness are underscored by three examples. First, sales of Mobil's Hefty garbage bags soared when first introduced because consumers believed that they decomposed over time; when it later turned out that they only partially decomposed and thus potentially did more harm than good, sales plummeted. Second and more symptomatically, McDonald's decided to eliminate styrene packaging because customers disapproved of this material, even though styrene is actually more recyclable than the paper that replaced it (Kleiner 1991). Third and even more insidiously, the consumption of products generally accepted as green may help the environment less than easily available greener alternatives, such as when paper towels made of recycled paper replace the option of using a sponge (Ottman 1993, p. 54).

In short, truly green marketing decisions must address a broad and complex variety of externalities and interactive systems that are associated with relevant assaults on the commonly shared environment (cf. Meade and Nason 1991; Mundt 1993; Sinclair-Desgagné and Gabel 1997). That is, the effect of altruism and commons-friendly behavior is as much a function of systemic interdependence as of social interdependence. Consider the simple act of choosing whether to drink a cup of coffee from a styrene, paper, or porcelain cup. Conventional green reasoning might recommend the porcelain cup. However, consumers also should consider the amount of energy used by dishwashers and the pollution caused by detergents. Quite possibly, if frequently washed, the porcelain cup may consume more energy, pollute more water, and generally damage the environment more extensively than would either styrene or paper (*The Economist* 1992). Similarly, a pressing concern is the proclivity to focus on what we would call micro-green activities instead of on macro-green or systemically commons-friendly activities. Revisiting McDonald's as an illustration,

the production of beef protein (a staple of the McDonald's menu) is intrinsically more damaging to the commonly shared resources of soil and fresh water than is the production of soy protein. To draw attention only to styrene versus paper, rather than beef versus soy protein, may placate many or most green-conscious consumers but not make significant contributions toward preserving the commons (cf. Stauber and Rampton 1995). Thus, it is incorrect to claim that any organization is unilaterally green, for all its actions, with respect to all commonly shared resources, all the time. In other words, we submit that we could find the "greenest" company on Earth, but that, upon scrutiny, we would find nongreen or commons-unfriendly activity in that company. Therefore green-ness or commons friendliness is indeed a relative term and must be measured on several continua and with regard to each commons on which it has a direct or indirect bearing.

Communication

Communication within a group increases the probability that individuals will sacrifice their self-interest in favor of other-oriented resource conservation at the collective level (e.g., Hackett, Schlager, and Walker 1994). When groups have the opportunity to discuss a dilemma in advance, individuals in those groups make significantly fewer defecting choices than individuals who have engaged in no prior discussion (Dawes, McTavish, and Shaklee 1977). However, using a resource dilemma design that provided actual feedback about the behavior of others, Messick and colleagues (1983) find that such feedback can have potentially conflicting effects on individual choices. Learning that other group members are restraining their harvest introduces normative pressures to conform by behaving cooperatively; however, it also may relieve some pressure toward cooperation if one person's choice appears less essential to the collective welfare. Furthermore, when given information that other group members are making selfish, defecting choices, individuals tend to conform in favor of their self-interest. Thus, subjects given false feedback that other group members were overusing the resource pool tended to increase their own harvests across trials, whereas subjects given false feedback that others were underusing the pool tended to maintain moderate harvests across trials. Along similar lines, Dawes, McTavish, and Shaklee (1977) find a positive correlation between individuals' perceptions of how many group members would cooperate and their own degrees of cooperation. Subjects who predicted that a larger (smaller) number of the other group members would cooperate tended to cooperate more (less) themselves. In addition, subjects who communicated about the dilemma predicted more cooperation than did subjects in groups that did not communicate.

Through implicit reciprocity, a decision to make a cooperative choice often rests on the trust that others also will make cooperative decisions. Even if people are aware of the value of cooperative decisions, they are unlikely to make them if others fail to reciprocate (cf. Bingham 1996). In the commons, unilateral exercise of personal restraint in the interest of collective welfare appears futile unless one member trusts that others will behave similarly. In short, no one wants to play the sucker by cooperating while others selfishly profit at the group's expense (cf. Wiener and Doescher 1991).

Research on the relationship between trust and cooperation in social dilemmas assumes that personal trust is a function of communication through interpersonal interactions that reveal or disclose the motives and intentions of others (e.g., Kelley and Stahelski 1970). However, the commons situation may require individuals to make decisions without explicit knowledge of others. In such circumstances, choosing cooperatively requires "depersonalized trust," that is, trust formed in the absence of prior interaction with interdependent others (Brewer 1981). Such depersonalized trust thrives best in relatively homogeneous social groups or in cultures whose members share common values, attitudes, and goals.

Depersonalized trust also can be enhanced by confidence that those who fail to cooperate will be sanctioned in some fashion. In such cases, we differentiate sanctions that are agreed on and administered by the group from sanctions administered by relatively external, regulatory bodies such as governments. More specifically, when groups are empowered to punish defectors, cooperative choices significantly increase (Caldwell 1976). Furthermore, group norms can serve a similar function by providing a set of expectations while implying that violations of these norms will be punished. Thus, Bonacich (1976) finds that communication among group members tends to focus on the normative requirement of cooperative choices and on expressions of how angry the group would be toward a defector. In these conditions, even in the face of high monetary incentives to defect, the rate of cooperative responding exceeded 90%.

The effects just noted appear to be reinforced when decisions are personally identifiable, that is, traceable. Individuals who must reveal their choice under the eye of public scrutiny increase their rate of cooperative behavior (Jorgenson and Papciak 1981). This tendency apparently holds for corporations as well. Some companies exposed as polluters have found the adverse public relations too costly to bear and have begun to refrain from commons-hostile activities (Thomas 1992; Upah and Wokutch 1985).

All this suggests a potentially positive role for communication among group members in fostering cooperation toward resolving commons dilemmas. However, as Messick and Brewer (1983) point out, the practical applications of these findings are limited because, in real-world dilemmas, the direct communication among group members found in experimental settings is not always possible. Most social dilemmas, particularly the commons dilemma, involve large collectivities that extend far too widely to permit the sort of contacts that facilitate cooperation in laboratory experiments. In such conditions, relatively large and often diffuse groups may find little or no opportunity to communicate to negotiate solutions. However, Nill and Shultz (1997) contend that the issue is not so much opportunity as will; even among large, disparate, and culturally diverse groups with seemingly adversarial interests, when all stakeholders enter a dialogue to resolve the likes of commons dilemmas, multi-win and more commons-friendly marketing activities are more probable.

That said, verification of agreements and ensuing marketing activities that emanate from communicative interactions among all stakeholders become integral to the process. It is not enough simply that all agree to cooperate and preserve.

Instead, a step-series of agreed-on, incremental, and measurable results at specific periods, while the process is moving toward the final, ideal outcome, must be verified. This multistep verification schema has proven to be particularly important to ameliorate some of the most intractable crises and conflicts of the past 50 years (cf. Deutsch 1973, 1985; Osgood 1962, 1966; Pruitt and Rubin 1986). We believe it is also important to any large-scale commons-friendly marketing activity, especially when stakeholders occupy adversarial positions.

Contrary to some scholars who believe there is no technical solution to largest-scale commons dilemmas (e.g., Hardin 1968; Postman 1993; Wade 1974; Winner 1986), we believe that technology will play a significant role—not because of potential breakthroughs to replace air, water, soil, or other commonly shared resources, but rather because technological advances will facilitate dissemination of information, enhancement of communication, education of all stakeholders, and verification (cf. Christensen 1999; Saemann 1992). Hardin (1968, p. 1245) notes that “one does not know whether a man killing an elephant or setting fire to grassland is harming others until one knows the total system in which his act appears.” Thus, communication will enable each of us to understand the systemic repercussions of defecting behavior. And, as the advent of the information superhighway has made clear, technology eventually will enable communication networks to reach us all. In essence, as we move into the Age of Global Information, the disconnected and disparate world collectives that Messick and Brewer (1983) argue would preclude effective communication, thereby blocking dilemma resolution, will eventually grow less disparate and more connected. Hardin (1998) recently has shifted his position on the role of technology and the extent to which it may abet commons preservation. Similarly to us, Hardin now believes that technological advancements may facilitate information dissemination and group cooperation, as well as the development of more commons-friendly products and marketing processes.

Consider, for example, the potential role(s) of computer networks and simulations, television networks, satellite photos of the rain forest, and other telecommunication technologies. Each informs and thereby empowers consumer-interest groups that, in turn, can use communication networks to advocate commons-friendly agendas, monitor program compliance, publicize conspicuous abuses, pressure regulators, and motivate marketers. Consumer empowerment and its attendant perceptions of consumer effectiveness are vital to progress in addressing commons-related environment issues (cf. Kinnear, Taylor, and Ahmed 1974). Much of the previously cited psychology literature clearly indicates that focused efforts and increased self-efficacy enhance commons-friendly activities (Kaufman and Kerr 1993), and recent field studies concur (Bromley 1992). Studies on consumers *per se* indicate similar conclusions (Ellen, Wiener, and Cobb-Walgren 1991).

Although Hardin (1968, p. 1244) states that progress is impossible until we “explicitly exorcise the spirit of Adam Smith,” we may have entered an era in which Smith’s invisible hand will play a role in the form of communication technology guided by marketing acumen. Therefore, the commons preservation message slowly is permeating the

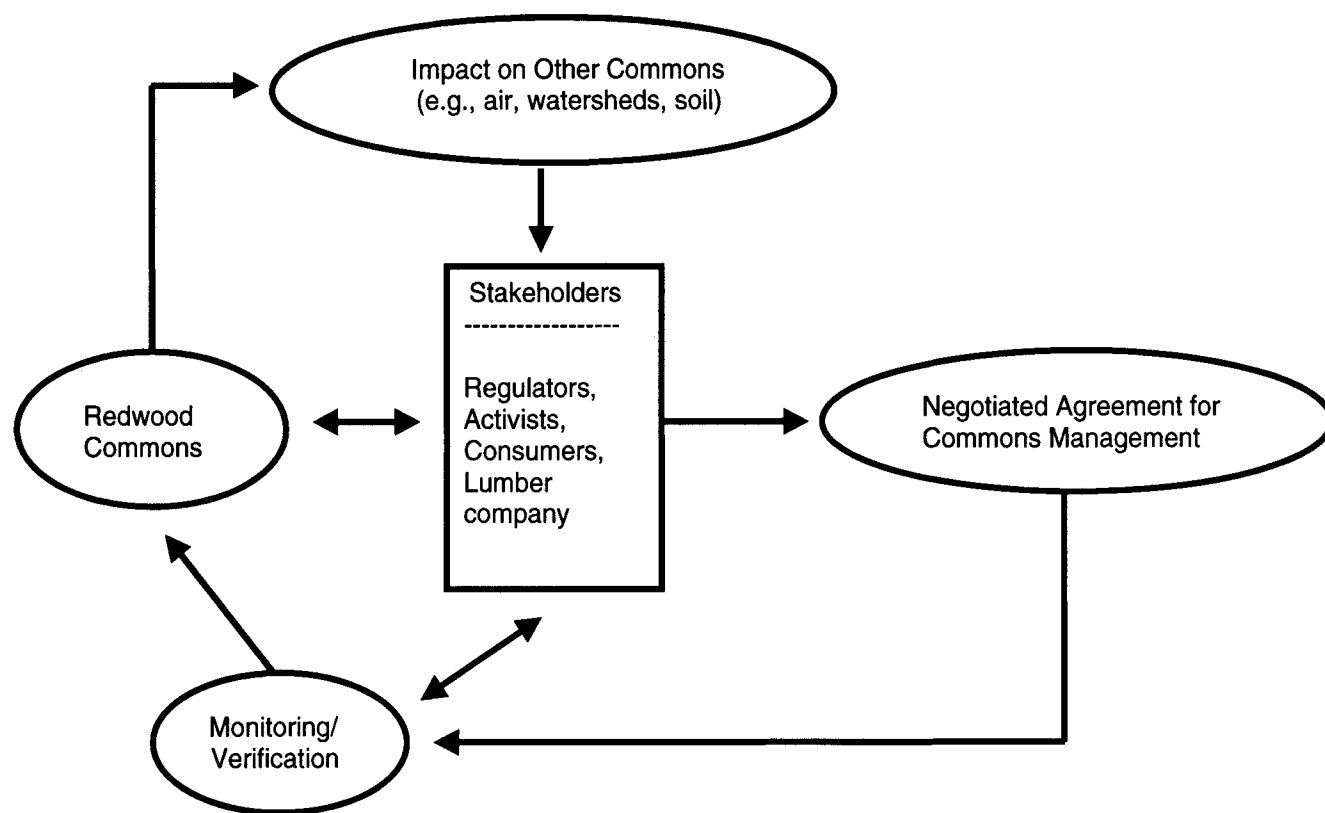
marketplace. Despite Hardin’s (1968, p. 1245) argument that “the morality of an act cannot be determined by a photograph,” photographs—and their evolutionary analogs in the form of digital reproductions, computer images, video screens, and so forth—become an important link in the communications network when their interpretation, contextualization, and dissemination facilitate change.

Consequently, marketing communications that inform consumers about the value of commons conservation and the pitfalls of commons degradation seem a potential catalyst for prosocial consumption and movement toward resolution of the commons dilemma (cf. Lord 1994). Such strategic applications of marketing communication have been referred to as “attacking the barriers to cooperation” (Wiener and Doescher 1991). Communicating the value of commons-friendly (cooperative) consumption and the costs of commons-unfriendly (defecting) consumption is also more likely to inspire design and production of commons-friendly products and render them less price sensitive. Again, this assertion is a reasonable extension of previously cited experimental findings (e.g., Bonacich 1976).

As a final example, we return to the case of cooperation among various stakeholders with common interests in redwood forests (Christensen 1999). This cooperative agreement, the habitat conservation plan, embodies much of our synthesis and may prove an instructive model for a type of new thinking that we encouraged in our introductory remarks. Briefly, multiple stakeholders, some with adversarial perspectives and contentious positions, enter a constructive dialogue. This communicative process leads to an alliance of sorts and a negotiated agreement with specific and measurable outcomes over time. The need for a systemic plan for action and commons management effectively is communicated and recognized by consumers, activists, regulators, marketers, and other stakeholders in ways designed to influence usage and consumption decisions that, at this juncture, would appear to be commons friendly, at least with regard to this particular commons of focus (10,000 acres of redwood forest).

In Figure 1, we delineate the essence of the extant agreement: (1) presence of redwood commons, (2) stakeholders in that commons, and (3) a negotiated agreement on how to manage it. We also suggest more expansive elements for integrative commons management. Our expansion includes a monitoring or verification program to alert stakeholders to the unfolding processes that result from the agreement. More specifically, the engaged stakeholders, as well as external policy analysts, will and should monitor the prescribed activities to determine whether those activities abet redwood commons preservation, consistent with the incremental measures and agreed on time lines, to the satisfaction of the vested parties to the negotiated conservation plan. Moreover, the model requires a broader, integrative systemic approach that will determine the extent to which the agreement affects other commons beyond the specific acreage directly included, such as air, watersheds, soil, or fisheries that may be affected by harvesting, downstream production, distribution, and product usage or consumption. Finally, note that in the stakeholder negotiation and compliance model for commons management, the participating parties must literally look “outside the box” (i.e., the cen-

Figure 1. Stakeholder Negotiation and Compliance Model for Commons Management



trally located set of principal stakeholders) to resolve their commons dilemma.

Discussion and Directions for Further Research

Irrespective of the transnational cooperative efforts to address commons-related issues (e.g., the 1992 United Nations Conference on Environment and Development and the ongoing "Rio Process" [Jordan and Voisey 1998]), protracted environmental degradation resulting from commons dilemmas indicates that fresh thinking truly is warranted. With the increasing global influence of the marketing concept, responsible and responsive activity by marketers and effective application of marketing tools may provide one avenue of assistance in the search for resolutions to difficulties stemming from the tragedy of the commons. Toward that end, we have proposed the synthesis of commons resolutions and implications for marketing engagement (Table 1) and the stakeholder negotiation and compliance model for commons management (Figure 1). We hope that both the synthesis and the model will inspire further research. In that spirit, we propose the following topics for empirical investigation:

1. Consumers' commons-related choice processes and factors that influence those processes, including factors that enhance consumer motivations to engage in green consumption and willingness to endure such short-term costs as higher product prices or inconvenient purchase venues;

2. The source, nature, and persuasiveness of attempts at social influence leading in the direction of altruistic values;
3. The marketing communications mix (e.g., advertising, promotions, selling, public relations, sponsorship, labeling) appropriate for encouraging changes in commons-related attitudes and behavior (e.g., purchases, selfish exploitation); and
4. Perhaps most important, systemic factors and integrative forces relevant to administering the interactive effects of marketing activity, governing bodies, regulatory guidelines, enforcement programs, consumption, and their interrelated impacts on the commons and its multiple stakeholders, in short, a systemic approach that should be integral to the analysis and solution for some of the most fractious global macrochallenges (e.g., integrative management of multiple commons).

More specifically, we believe that the following propositions are particularly compelling, lend themselves to empirical testing, and therefore should be of interest to marketing policy scholars:

- P₁: Communication targeted at increasing the likelihood of commons-friendly behavior tends especially to succeed when that communication reaches all stakeholders, includes information about others, invokes a sense of trust in others, and enunciates measurable steps toward mutually agreed-on outcomes.
- P₂: Communicating the value of commons-friendly behavior and the costs of commons-unfriendly behavior will tend to inspire not only commons-friendly consumption, but also the production of commons-friendly products and services

and to render such offerings both less price sensitive and less cost sensitive.

- P₃: Marketing activities aimed at enhancing social responsibility, altruism, and selflessness will further the prudent management of common resources.
- P₄: Systemic commons-management strategies mutually agreed on by all stakeholders of that commons (regulators, activists, consumers, producers, and so forth) will yield more effective commons-friendly management and more successful environmental protection programs.
- P₅: Mutually agreed-on strategies that more fully include specific, measurable outcomes and address downstream commons, as well as the commons of immediate interest, will yield more optimal management and protection programs for a longer period of time, to the benefit of a larger number of stakeholders.

By empirically investigating these and related propositions, researchers with special interests in marketing communications, ethics and social responsibility, organizational design and strategic alliances, consumer decision making, management by objectives, and so forth can enjoy opportunities, not to mention challenges, to leverage their expertise.

In conclusion, responsible and responsive prosocial activity by marketers and effective application of marketing tools to public policy may provide an avenue of assistance in the search for resolutions to difficulties stemming from environmental social traps. Because marketers typically pursue activities that predict, transact, and assess commercial exchange (cf. Bagozzi 1975), they may be positioned uniquely to ameliorate the tragedy of the commons, in so far as commercial exchanges and the product usage or consumption resulting therefrom ultimately abet or assault the commons. Further research as well as both vision and vigilance are needed to overcome the tragic consequences potentially stemming from the inertia of short-sighted and self-interested marketers. By working with consumers, regulators, interest groups, and researchers—particularly in the areas of communications and consumer decision making, product development, green advocacy, program design, and systems management—marketers might contribute to solutions in an area in which, too often, they have been vilified for encouraging social waste, wreaking ecological destruction, and contributing to the tragedy of the commons.

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