
Cooperatives, Green Behavior, and Environmental Protection

Cooperativas, conducta ecológica y protección ambiental

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Mark P. Alavosius
William D. Newsome

University of Nevada, Reno

Correspondence to: Behavior Analysis Program, Mack Social Science, Room 404, Depart. of Psychology, Mail Stop 296, Reno, NV 89557-00240; Mail: malavosius@aol.com

Resumen

Los comportamientos humanos relacionados con la degradación ambiental pueden ser la mejor oportunidad hasta ahora para la aplicación socialmente válida de la ciencia conductual a gran escala. Cambiar el comportamiento en la escala necesaria para hacer una diferencia a nivel global requerirá esfuerzos nunca antes vistos en las aplicaciones del análisis de la conducta. Incorporar principios conductuales de probada efectividad en los modelos organizacionales para alterar los comportamientos de cientos de millones de personas puede ser parte de la solución humana al problema del calentamiento global. Este trabajo considera el movimiento de cooperativas y como los estudiantes del comportamiento pueden usar las tecnologías actuales de comunicación, las redes sociales y la creciente comprensión de las contingencias entrelazadas y las redes verbales para proponer soluciones al problema climático a través del cambio conductual. Se proponen consideraciones para iniciativas prácticas.

Palabras clave: comportamiento verde, protección ambiental, análisis de la conducta, análisis cultural.

Abstract

Human behavior related to environmental degradation can be the greatest opportunity, until now, for socially valid application of behavioral science on wide-scale. Changing behavior at a scale needed to make a difference globally will entail efforts ever seen before within applications of behavior analysis. Incorporating behavioral principles within existent organizational models shown effective in altering the behaviors of hundreds of millions of people may offer a part of the human solution to global warming. This research considers the cooperative movement and how students of behavior might use current communication technologies, social media, and emerging understanding of interlocked contingencies and verbal networks to address solutions to global climate through behavioral change. Considerations for practical initiatives are proposed.

Keywords: green behavior, environmental protection, behavior analysis, cultural analysis.

Gore (2006, 2009) outlines specific behaviors to better steward natural resources. These are 1) save energy at home, 2) get around on less, 3) consume less, conserve more and, 4) be a catalyst for change. Each contains a host of specific practices such as choosing energy efficient appliances, adopting more efficient driving habits, recycling, taking political action, educating oneself, educating others, and so on (pp 305-321). Adopting these 'green' behaviors is a necessary step in creating a greener world. Educating the public about what they could do differently is alone not sufficient however for engendering large-scale behavior change. If it were, it would already have worked.

Regarding to global climate change, it is unlikely that the outcomes of today's behaviors will be observable in the lifetime of the individuals emitting them (IPCC, 2007). This extreme delay to consequences for ecologically friendly behaviors precludes the shaping of pro-environment action through direct contact with desired results. The behavior changes desired to preserve the environment involve altering the purchase and consumption of goods and services which create harmful byproducts in their production, delivery, consumption or waste. We propose that large-scale change of these behaviors might be accomplished by using existing organizational structures which already influence consumer choice. Social institutions such as tax codes, government regulations, rebates, faith-based institutions, and others raise resistance of some sorts as people's values, histories, beliefs, and perceptions may lead some to distrust these entities. The need to act is quick and massive, however, so working within existent organizational structures is logical and practical.

The cooperative method is an old and tested way of business (Alavosius, Getting, Dagen, Newsome, & Hopkins, 2009; Gardner & Stern, 2002; Rochdale Pioneers 1844; Warbasse, 1950). In its growth, the cooperative movement has spawned great creativity and variability in the way how ventures are formed and organized. The International Cooperative Alliance (2008) estimates that about 800 million people worldwide currently participate in cooperatives. The adaptability of cooperative models is evident in their wide variety of functions. They provide affordable housing, protect the laborers interests and create venues for the sale of local produce. Cooperatives are based on a 'for the people, by the people' ideal and are versatile in terms of interlocking behavioral contingencies that promote some desired end. They offer an applied laboratory to study

selection of cultural practices and perhaps illustrate concepts like metacontingency and macrocontingencies (Glenn 1988, 1989, 2004) proposed to account for sustained collective action. Nevertheless they are not a panacea, so opponents to cooperatives paint them with the brush of socialism, wealth redistribution, and other labels suggesting values opposing prevailing political rules and beliefs.

We are burdened with the complexity of intervening on the practices of billion of people, millions of organizations, and thousands of government entities to select eco-friendly behaviors. Strongly held beliefs and values blind many from seeing evidence that their behaviors, like those of countless others, combine in some global network of consumerism that harms the environment. Change requires solutions at the level of larger social units; preferably those units are already functional in ways that can be adopted towards promotion of 'green practices'. Cooperatives, by design, align individual actions with the commonwealth. Operations of a cooperative combine psychological forces at the individual level with sociological factors at the group level and harness these towards some common goal – in this case, preferred consumer choices. Language used to describe cooperative organizations need to be selected with care as labels raise thorny associations that can cripple their adoption. Cooperatives are diverse organizations and currently affect million of people. Discounting their success because of labels depicting faulty relations would be tragic.

Gide (1921) offers the following comments,

“What makes the success of consumers' co-operation is the very fact that its ends are most varied. Whatever is wanted of it can be obtained. It lends itself with marvelous ease to any social aim, even the most diverse—sometimes, it must be avowed, the most antagonistic—so that we must choose between them. As we shall see, one can seek in consumers' co-operation either cheapness or an increase of income, savings for the individual or the constitution of an inalienable fund for social benefits; but one cannot seek all these results at the same time.” (pg. 19).

Thus the individual members of a cooperative might see the results of cooperative action from various viewpoints. Some results are short-term immediate benefits like social approval by other co-op members and perhaps escape from aversive consequences associated with non-adherence

to personal aims (Malott, 1992; Malott, Shimanune, & Malott, 1992; Weatherly & Malott, 2008) that function to reinforce an individual's co-operation. These reinforcement streams vary for individuals based on why each one engages with a cooperative. The behavior of members of a 'green' cooperative might combine to produce some general outcomes (e.g., energy conservation) which are delayed but nevertheless valued by present and perhaps more likely future generations. If 'green practices' are well chosen the outcomes are beneficial to sustaining or restoring the environment. A hallmark of cooperatives is that they are voluntary associations of members that select a common path, set goals and organize contingencies to enable coordinated action. A challenge is to educate coop members about green choices, alter the effectiveness of consequences maintaining individual behaviors and in so doing help adjust the collective ends towards environmental protection. Once that is accomplished, the cooperative infra-structure is in place to alter and sustain the behavior of many.

Although they vary in forms, there are commonalities among all cooperative arrangements. Four features distinguish cooperatives from other types of organizations: (1) user ownership, (2) member education, (3) user control and, (4) proportional distribution of benefits (International Cooperative Alliance, 2008). The control granted to consumers in these arrangements promotes a better distribution of accountability for the negative effects of production as it aligns producers and the consuming public towards altering green practices. For example, regarding environmental issues, greener practices (buy local produce) are supported when the purchasing power of many consumers combine (purchasing cooperative) to buy local products. This behavior reduces the transportation costs required if individual consumer purchases were unorganized and uninformed and individuals bought produce that required more distant and wasteful transport. If the stated goals of cooperatives are to increase environmental stewardship, resources to educate consumers, coordinate purchases and organize consumption may control demand for goods and services that harm the environment. Cooperatives can be viewed as advocacy organizations that actively educate coop members about product choice and can act as a counter-weight to the massive marketing efforts employed by producers to get people to buy their product and shield them from understanding the hidden costs of production (Biglan, 2009). For example, many

consumers buy athletic shoes marketed by sports stars and are uninformed about the pollution generated in off-shore factories that spill waste into the ground water and exploit vulnerable workers. A purchasing cooperative can reveal these hidden externalities and alter the reinforcing value of owning expensive shoes manufactured by child labor in under-regulated factories.

With "production for use" cooperatives (Gide, 1921), two oppositional groups, the externality producers (e.g., power plant generating CO²) and the externality absorbers (communities), become the same entity. The *Smart Grid* project proposed by President Obama in 2009 provides an interesting point of attachment for this type of cooperative model. The proposed smart grid, or super grid, is characterized by four features: 1) more efficient transmission lines, 2) advanced metering and internet-based monitoring systems, 3) widely distributed electric energy storage units owned by end users and, 4) sophisticated communication and feedback systems linking all grid elements. Joint ownership of energy storage units by groups of end users is a solid foundation upon which cooperative principles may be applied. The immediate financial implications of energy use by individuals are aligned with the collective need of society to reduce harmful pollution. The current potential for technologies to link consumers is unprecedented in human history and this can infiltrate a variety of cooperatives to change a range of consumer behaviors.

There are precedents for this type of linkages among producers and consumers. The Hood River Conservation Project (Hirst, 1988) was a five-year demonstration project in which residents of a small town in Oregon, USA, cooperated with their local power company and distribution chain to arrange household energy audits and subsequent adoption of household conservation retrofits by citizens to reduce their demand for energy. This reduction resulted in less demand for energy eliminating the need to build an additional coal-fired power plant with its associated environmental costs. Several features of this project are remarkable for the current discussion. The community benefited from the leadership of a regional advisory board that coordinated the actions of organizational and community members. Communications promoting the energy audits and retrofits were community-based marketing efforts with word-of-mouth dissemination playing a prominent role in consumer's participation in the program.

The community averted the need to construct a new power plant and instead invested the costs in conservation efforts by many residents with returns enjoyed by all.

It is interesting to focus on systematic replication of this project aided by current social media technologies. With the structure of a cooperative organization as the link pin, the communication of values, goals, and outcomes can be made more timely and customized to the audience by using web-based communication streams. Probably assessments of residents' values could inform messages choice to optimally invite participation by several segments of the audience in energy conservation measures. Some residents might value the local eco-system protection and reduction in green houses gases as the main benefit of the program. Others might view personal cost-savings as the leading benefit. The employment offered to local contractors installing the retrofits might attract those concerned with economic viability of the community. Some may be controlled by the social approval of community leaders or peers. Still others might see the initiative as leading to sustaining the quality of life in the community and value the project for longer term gains.

Assessment of resident's entering values might readily inform the design of communications and enhance leaders' roll-out of 'green' technologies. Houmanfar, Rodrigues & Smith (2009) speak to the coherence of leader's directives with listeners' established values as important for effective communication in large social systems. Social media offers an established tool to rapidly assess the entering values of citizens, analyze audience segmentation, and craft promotions aligned with their biases and values.

Maibach, Roser-Renouf, & Leiserowitz (2009) analyzed American's various views on global warming and identified six rather distinct audiences (ranging from 'alarmed' to 'dismissive'). Their analysis revealed that segments of the population differ widely in their perceptions of risk to themselves and others from climate change, willingness to change behaviors, preferred sources of information, and embrace of science as yielding information relevant to climate and human behavior. These researchers advise those seeking to promote 'green' behavior change to know their audiences and craft messages, messengers, and methods tailored to the idiosyncrasies of the segments of the population. This is supported by consideration in the analytic behavior (Sigurdsson & Austin, 2006, Sulzer-Azaroff, 2000)

and community psychology (Syme, Nancarrow, & Seligman, 2000) literatures which describe fitting interventions and promotional campaigns to marketplace, community, organizational and individual variables in order to promote lasting behavior change.

A further benefit of a cooperative that educates members about the multiple short and long term benefits of 'green' practices is the capacity for this model to establish conditioned motivating operations to increase the likelihood of continued innovation in green practices. Grant (2010) argues that sustainable communities are those that operate in steady-state economies such that consumption does not exhaust available resources and wastes generated do not overwhelm the capacity of the system to absorb them. Grant sees behavioral solutions focusing on altering the reinforcement preferences of consumers from choice of those related to consumption of resource-heavy reinforcers (e.g., services & goods which entail externalities) to preference for resource-light reinforcers like local produce and the pleasures of living in a sustainable system.

Cooperative model using fast communication tools offers an applied laboratory to explore how behavioral contingencies can be altered systemically to shape consumer choice by individuals and nudge populations towards desired outcomes by tailoring how change is framed for segments of the audience. Metrics on the outcomes of collective action (e.g., measures of energy saved, reductions in green-house gases, cost-reductions or rate-credits, and others) offer summary feedback that informs community members of progress. Verbal processes like value statements, goal-setting, and rule generation mediate the delay to these consequences.

Marketing initiatives by profit-driven corporations dominate the media and shape consumer choice towards a myriad of goods and services that generate profits for the stake-holders. Absent in the marketing, unless require by government, are indications of the hidden costs of consumption. The power of cooperatives to educate consumers, change perceptions of costs and benefits, and alter reinforcer preferences towards resource-light consumables act as a potent counterweight to corporate might. It is expected staunch resistance to organized consumer behavior as the approach threatens the dominance of influential and powerful conglomerates (Hogan, 2009).

But savvy industries can profit by studying market trends and adjusting to meet emerging appetites for green goods and services.

Corporations offering greener alternatives than their competitors can acquire an edge by highlighting leadership in environmentally friendly practices. Various independent organizations accredit organizations for meeting green standards. LEED (U.S. Green Building Council, 2007) for example accredits construction practices to promote architecture and building operations that are sustainable and eco-friendly. A similar approach is used in the hospitality industry to promote “environmentally preferable purchasing” by tourists. The California Green Lodging Program (CalRecycle, 2010) showcases hotels and resorts that minimize their environmental impact through energy conservation, recycling, composting and other means. Organizations of this sort inform us about leading providers of green goods and services and provide independent verification of marketing communications heralding ‘green’ solutions.

Education to teach citizenship behavior seems a fundamental starting point to alter consumptive practices that degrade the environment. Curricula for wide-scale education about environmental issues, earth science, human behavior, and sustainable eco-systems are emerging. Opposition to this arises from numerous sources that no doubt see educated, organized consumers as a threat to their initiatives, but colleges and universities are differentiating themselves as learning environments promoting sustainable living (The Princeton Review, 2009). Behavior analysis includes much within its education, research, and practice to contribute to citizen education about sustainability although much work is dated to the 1970’s and 1980’s when environmentalism surged with rising gas prices of that time (e.g., Cone & Hayes, 1980; Dwyer et al., 1993; Foxx & Hake, 1977; Geller, Winett, & Everett, 1982; Jacobs, Faribanks, Poche, & Bailey, 1982). Behavior analytic work towards environmental protection generally withered in the 1990’s and first decade of this century but has been rekindled by increased concern for global warming.

We have developed a didactic course at our university to educate students about climate change, sustainable communities, and green behavior. This course considers environmental psychology at large and ‘green’ behavior analysis in particular. Noteworthy in the extensive literature

on behavior and climate change is that the preponderance of applied research in promoting ‘green’ behavior is informed by behavior analysis. Other approaches in psychology (Nickerson, 2003) and sociology (Stern 2000) offer conceptual models and theories of environmental protection but generally fall short in yielding tested solutions that actually change behavior. Not surprisingly, the general limitation of applied behavior analysis interventions towards green practices is that they fall short on maintaining behavior when contrived interventions like prompts, feedback, and incentives are removed (Abrahamse, Steg, Vlek, & Rothengatter, 2005). The next element in our curriculum is a laboratory course in ‘green’ behavior applications. Community interest is strong and support from other university departments (e.g., earth sciences, engineering), students, and local organizations have aligned to welcome this addition. For instance, food sellers on our campus express interest in students working on composting food wastes perhaps in the university agriculture program, an international hotel chain has sent an engineer to present to our group on ‘green lodging’ initiatives for ‘eco-tourists’ and internship opportunities for our students within the hotels are offered, a local food co-op sees potential in a satellite co-op offering local good to university students. Students are forming a campus club, supported by student fees, to promote ‘green’ practices on campus. We envision a student-run organization which promotes green initiatives on our campus (e.g., via established student organizations like sororities, fraternities, athletic clubs, etc.), marshals resources to support implementation, and communicates results to the campus community. Interlocking our campus via social networking with others would weave a network of young talent exploring sustainable practices in learning environments.

The Sunshine House at the University of Kansas (Altus, Welsh, & Miller, 1991; Johnson, Welsh, Miller, & Altus 1991) offers a documented example of a student run cooperative exploring education of students in cooperative practices. Inspired by this example, some of our graduate students in behavior analysis have organized a community garden to grow produce locally. The project offers a small practicum opportunity for students to behave under interlocked contingencies that establish ‘green’ practices and examine the contingencies acting on their behavior. The second author of this paper, along with five colleagues from the University of Nevada, Reno Behavior Analysis program, have established a small gardening cooperative that we have come to refer to as “The Patch.”

The Patch project was developed based on the shared needs and values of its members; its goals are to provide a more affordable source of organic vine-ripened produce, and to do so in way that is environmentally friendly and sustainable. In its first season, The Patch project provided its members with a slightly better than 2:1 return on investment based on local retail prices of comparable organically cultivated produce. The total edible yield from the project was just shy of 200 pounds of tomatoes, peppers, eggplant, etc.; an ample amount for each of the members to enjoy an abundance of high quality, healthy foods. Given the experience gained in the first season, and near complete lack of gardening experience prior, our coop's members fully anticipate higher yields and returns on investment in future seasonal iterations. The Patch also maintained an almost immeasurably small ecological footprint thanks to a simple water recycling system and lack of any transportation or cultivation-related emissions. Now entering the planning stages for the second growing season, The Patch members have started utilizing existing social networking tools to enhance the existing communication infrastructure and serve as a storage site for more formal mission statements and bi-laws.

Despite the small scale of the Patch project, its potential for catalyzing large-scale pro-environmental behavior is provocative. It shows that with some enthusiasm and ingenuity, any small group of citizens can meet their collective needs and pursue their shared environmental values in a way that is financially viable, ecologically friendly, sustainable, and replicable. Thanks to the high degree of flexibility with which cooperative principles can be applied, those wishing to begin their own small collective ventures need only some understanding the basic cooperative principles outlined above. The application of those principles can then be tailored and amended to fit the practical needs of a small collective. Based on our experience as participants in The Patch, we now provide some practical guidelines which may be helpful in the development of similar cooperative efforts.

Guideline 1: Clarify collective values. The cooperative model may be applied to the achievement of many practical ends. In many instances members' values will pertain to both final outcomes as well as the means of their attainment. If members only seek agreement on outcomes (i.e. affordable housing), they risk inter-member friction and organizational

paralysis when moving to collectively select the means which outcome is achieved (i.e. selection of building materials). As such, drafting a coop mission statement, which clarifies collectively chosen values against the suitability of all group's decisions is recommended. Value statements should be designed to withstand the test of time. As a matter of fact, specific goals or achievements are better stated elsewhere while efforts are spent articulating values in the fashion of guiding principles or moral compass bearings.

Guideline 2: Communicate expectations clearly.

Even in a small group of close acquaintances, the expectations for individual contributions as well as distributions of benefits should be explicitly stated and preferably put in writing in advance of beginning the project. The same is true for a dispute management plan to be agreed upon by the group and ready for implementation should some unforeseen event should occur. There is no need for lawyers or lengthy bi-laws for a small group, just enough to be sure that all participants know their roles and what to expect in return.

Guideline 3: Start small and shape group commitment.

Enthusiasm and optimism are some of the world's greatest renewable resources, especially when it comes to solving our environmental problems. So, an over-dose of ambition can also wreck a fledgling community project. High response requirements and/or thin reinforcements for start-up initiates in a cooperative put the organization at risk for member attrition. In the initial stages of a project, be sure to set goals that are easily attainable. It is really important to ensure that all members of the newfound collective, whatever size, contact some reinforcing outcomes for their efforts, however small. Goals can and should be scaled-up later as the collective willingness grows as a function of contacting the benefits of cooperation and subsequent iterations of the initial project are developed.

Guideline 4: Celebrate. In order to maintain participatory behaviors among coop members, the group should explicitly arrange activities to reward collective success. The nature of these activities should match the collective interests as best as possible. For example, the Patch project has arranged for several

'harvest pot-luck' dinners, in which each member will create a dish using foods grown in the community garden to share with the other members.

Guideline 5: Evaluate co-management. Governance of the participatory behaviors among coop members is an area for investigation. Participants in these groups may examine systematically the organizational variables, including their stated values and policies, which affect their own behavior and adjust their organization to self-manage. Small cooperatives have the advantage of agility when adaptive changes are required for their maintenance.

Creativity and ingenuity with existing resources are required to affect the level of behavior change needed as people coming to accept the challenge of preserving the environment. Attaching 'green behavior' initiatives to proven organizational structures like cooperatives coupled with social networking technologies offers a solution that can be launched now. A cooperative organizes consequences that maintain interlocked behaviors of two related classes, one of them is the controlled behavior (e.g., carpooling) related to environmental protection; the second is controlling behavior (e.g., social networking) which affects the probability of the controlled behavior. Skinner (1953) articulated the relationship between these classes of behavior and described self-management as a process of manipulating variables of which our behavior is a function. Membership in a cooperative entails management of controlling behaviors like generation of rules and values that alter reinforcer effectiveness. These controls establish aversive consequences for environmentally harmful behaviors and reinforcing consequences for 'green' behaviors which influence and sustain community practices.

The following action to engage with co-management of 'green' behavior is suggested:

- To determine the co-operatives in which you currently are a member (many people seem unaware that they are in various purchasing cooperatives like group insurance plans, utility cooperatives, etc.). These may be labeled with other terms (e.g., 'exchanges') that mask the democratic nature of these organizations.
- Educate yourself about the structure and function of the interlocking contingencies operating within these organizations.

- Participate in the governance of your cooperatives; vote on future directions that support eco-friendly choices.
- Join cooperatives if available that manage purchases related to environmentally friendly goods and services.
- Advocate for growth and linkages among 'green' cooperatives. Recruit others to join.
- Explore opportunities to apply cooperative principles to home-grown ventures with others seeking to fulfill similar needs in ways coherent with shared environmental values.

Cooperatives are ubiquitous organizations in which vast numbers of people participate to interlock their behaviors to promote the common good. They offer an applied laboratory to examine interlocking contingencies, rule-governed behavior, and communication networks. Students of behavior can readily find or create cooperative organizations to co-manage a variety of daily activities related to environmental preservation and in so doing learn actively about self-management within citizen organizations.

If this study does not provide enough contemporary role models for promoting 'green' behavior we can look to past champions of the environment. Roosevelt (1916) described his voyage along the Mississippi shores on the Gulf of Mexico and eloquently reported

"Defenders of the short-sighted men who in their greed and selfishness will, if permitted, rob our country of half its charm by their reckless extermination of all useful and beautiful wild things sometimes seek to champion them by saying the 'the game belongs to the people.' So it does; and not merely to the people now alive, but to the unborn people. The 'greatest good for the greatest number' applies to the number within the womb of time, compared to which those now alive form but an insignificant fraction. Our duty to the whole, including the unborn generations, bids us restrain an unprincipled present-day minority from wasting the heritage of these unborn generations. The movement for the conservation of wild life and the larger movement for the conservation of all our natural resources are essentially democratic in spirit, purpose, and method." (pps 299-301).

This is relevant for the study because of the relevance of this observation to our present time where that gulf is tainted by the spills of profit-driven corporate might

seeking to fuel unprincipled consumption by the short-sighted masses and propose that cooperative models offer a real alternative.

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