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GENERAL STUDIES PROGRAM COURSE PROPOSAL COVER FORM

Courses submitted to the GSC between 2/1 and 4/30 if approved, will be effective the following Spring.

Courses submitted between 5/1 and 1/31 if approved, will be effective the following Fall.

(SUBMISSION VIA ADOBE.PDF FILES IS PREFERRED)

DATE 07-24-09

1. ACADEMIC UNIT: School of Sustainability

2. COURSE PROPOSED: SOS   320   Society and Sustainability   3
    (prefix) (number) (title)   (semester hours)

3. CONTACT PERSON: Name: Lisa Murphy or Laura Digan   Phone: 727-6963

    Mail Code: 5502   E-Mail: lisa.m.murphy or laura.digan @asu.edu

4. ELIGIBILITY: New courses must be approved by the Tempe Campus Curriculum Subcommittee and must have a regular course number. For the rules governing approval of omnibus courses, contact the General Studies Program Office at 965–0739.

5. AREA(S) PROPOSED COURSE WILL SERVE. A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

Core Areas

Literacy and Critical Inquiry–L ☒
Mathematical Studies–MA ☐ CS ☐
Humanities, Fine Arts and Design–HU ☐
Social and Behavioral Sciences–SB ☐
Natural Sciences–SQ ☐ SG ☐

Awareness Areas

Global Awareness–G ☐
Historical Awareness–H ☐
Cultural Diversity in the United States–C ☐
(Note: **one course per form**)

6. DOCUMENTATION REQUIRED.
    (1) Course Description
    (2) Course Syllabus
    (3) Criteria Checklist for the area
    (4) Table of Contents from the textbook used, if available

7. *In the space provided below (or on a separate sheet), please also provide a description of how the course meets the specific criteria in the area for which the course is being proposed.*

See Attachment

Notes:
1) We are resubmitting our request for "L" designation with appropriate modifications made to the structure of the course syllabus
2) We would like to respectfully request a retroactive spring 2009 effective date, which was the first time we taught this particular course. The only section that should not receive the "L" designation retroactively) is the study abroad section that was taught in Australia over the summer 09 (#47073) since it was taught differently.

Rev. 1/94, 4/95, 7/98, 4/00, 1/02, 10/08

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CROSS-LISTED COURSES: ☒ No   ☐ Yes; Please identify courses: _____

Is this a multisection course?:   ☐ No   ☒ Yes; Is it governed by a common syllabus?   <u>Yes, all sections are</u>
<u>governed by a common syllabus, including the study abroad section offered in Australia (we are changing the</u>
<u>structure of future sections to meet the "L" designation).</u>

Charles L. Redman

Chair/Director   (Print or Type)

Date: 7/24/09

Chair/Director   (Signature)

LITERACY AND CRITICAL INQUIRY - [L]

Rationale and Objectives

Literacy is here defined broadly as communicative competence in written and oral discourse. **Critical inquiry** involves the gathering, interpretation, and evaluation of evidence. Any field of university study may require unique critical skills which have little to do with language in the usual sense (words), but the analysis of spoken and written evidence pervades university study and everyday life. Thus, the General Studies requirements assume that all undergraduates should develop the ability to reason critically and communicate using the medium of language.

The requirement in Literacy and Critical Inquiry presumes, first, that training in literacy and critical inquiry must be sustained beyond traditional First Year English in order to create a habitual skill in every student; and, second, that the skills become more expert, as well as more secure, as the student learns challenging subject matter. Thus, the Literacy and Critical Inquiry requirement stipulates two courses beyond First Year English.

Most lower-level [L] courses are devoted primarily to the further development of critical skills in reading, writing, listening, speaking, or analysis of discourse. Upper-division [L] courses generally are courses in a particular discipline into which writing and critical thinking have been fully integrated as means of learning the content and, in most cases, demonstrating that it has been learned.

Students must complete six credit hours from courses designated as [L], at least three credit hours of which must be chosen from approved upper-division courses, preferably in their major. Students must have completed ENG 101, 107, or 105 to take an [L] course.

Notes:

1. ENG 101, 107 or ENG 105 must be prerequisites
2. Honors theses, XXX 493 meet [L] requirements
3. The list of criteria that must be satisfied for designation as a Literacy and Critical Inquiry [L] course is presented on the following page. This list will help you determine whether the current version of your course meets all of these requirements. If you decide to apply, please attach a current syllabus, or handouts, or other documentation that will provide sufficient information for the General Studies Council to make an informed decision regarding the status of your proposal.

Proposer: Please complete the following section and attach appropriate documentation.

ASU - [L] CRITERIA

TO QUALIFY FOR **[L]** DESIGNATION, THE COURSE DESIGN MUST PLACE A MAJOR EMPHASIS ON COMPLETING CRITICAL DISCOURSE--**AS EVIDENCED BY THE FOLLOWING CRITERIA:**

YES	NO		Identify Documentation Submitted
☒	☐	**CRITERION 1:** At least 50 percent of the grade in the course should depend upon writing, including prepared essays, speeches, or in-class essay examinations. *Group projects are acceptable only if each student gathers, interprets, and evaluates evidence, and prepares a summary report*	Syllabus

1.   Please describe the assignments that are considered in the computation of course grades--and indicate the proportion of the final grade that is determined by each assignment.

2.   **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information "C-1".

C-1

YES	NO		
☒	☐	**CRITERION 2:** The composition tasks involve the gathering, interpretation, and evaluation of evidence	Syllabus

1.   Please describe the way(s) in which this criterion is addressed in the course design

2.   **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information "C-2".

C-2

YES	NO		
☒	☐	**CRITERION 3:** The syllabus should include a minimum of two substantial writing or speaking tasks, other than or in addition to in-class essay exams	Syllabus

1.   Please provide relatively detailed descriptions of two or more substantial writing or speaking tasks that are included in the course requirements

2.   **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information "C-3".

C-3

ASU - [L] CRITERIA			
YES	**NO**		**Identify Documentation Submitted**
☒	☐	**CRITERION 4:** These substantial writing or speaking assignments should be arranged so that the students will get timely feedback from the instructor on each assignment in time to help them do better on subsequent assignments. *Intervention at earlier stages in the writing process is especially welcomed*	Syllabus

1. Please describe the sequence of course assignments--and the nature of the feedback the current (or most recent) course instructor provides to help students do better on subsequent assignments

2. Also:

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information "C-4".

C-4

Course Prefix	Number	Title	Designation
SOS	320	Society and Sustainability	

Explain in detail which student activities correspond to the specific designation criteria.
Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
1) At least 50 % of the grade in the course should depend on writing, including prepared essays, speeches, or in-class essay examinations. ---- Group projects are acceptable only if each student gathers, interprets, and evaluates evidence, and prepares a summary report.	At least 50% of the grade for the course will depend on this. The course is designed to increase students' sustainability literacy through evaluation of evidence and written and oral exercises. One of the main learning outcomes of the course is for students to be able to demonstracte effective interpersonal communication (written and oral) and presentation skills.	See Syllabus: "Assessment and Evaluation" section and "Learning Outcomes" More specifically: - There will be two critical essays, each worth 20% of the students' grades (40% total). - There will be a reflection essay worth 10% or the students' grade These two assignments show that at least 50% of the grade will depend on individual writing assignments. In addition to this, there is a team project (worth 25% of their total grade) that involves gathering, interpreting, and evaluating evidence as well as providing a summary report. 1) Teams will start the project by identifying a problem and writing a 5-page essay on the problem for 10% of their grade. 2) Teams will then work together to design a community-based social marketing plan based on some of the common problems identified for 10% of their grade. 3) Lastly, each team will create a poster outlining the fundamentals of the problem and the team's marketing plan and will particpate in a poster session for 5% of their grade.

2) The composition tasks involve the gathering, interpretation, and evaluation of evidence.	- For the two critical essays, students are expected to draw from what they've learned and from their own experiences (gathering) a specific principle of concept of sustainability, and provide (interpret and evaluate) an analysis and evaluation of a recent case that exemplifies that principle or concept. - In addition, the team project has three componenets that will require students to utilize these composition tasks: an analysis of a problem, developing a community-based social marketing plan, and participating in a poster presentation. - The individual reflection essay requires that students reflect back on their past assignments and evaluate the experiences, strengths, and weaknesses of the different approaches.	See Syllabus: "Assessment and Evaluation" section and "Rubric for Critical Analysis Essays"
3) The syllabus should include a minimum or two substantial writing or speaking tasks, other than or in addition to in-class essay exams.	3) Students must write and submit two 3-5 page critical essays. They will also write a 5-page essay as a team, describing a sustainability-related problem and will be asked to design a program to address some of the common problems.	3) See Syllabus: "Assessment and Evaluation" section
4) These substantial writing or speaking assignments should be arranged so that the students will get timely feedback from the instructor on each assignment in time to help them do better on subsequent assignments.	4) Students will gain feedback on their critical essays from their peers via an in class activity reviewing their drafts and from their instructor after their final essays have been submitted. They will know how their essays will be graded becaues they will be given the scoring rubric. This should help them do better on subsequent assignments (i.e., the team project and the reflection essay). In addition, students will get feedback on their team projects in a timely manner - since it is a three-step project, they will get feedback on each step before moving on to the next.	4) See Syllabus: "Assessment and Evaluation" section, "Course Schedule", and "Scoring Rubric"

School of Sustainability
ARIZONA STATE UNIVERSITY

SOS 320: Society and Sustainability

Potential Instructors:

Kelli Larson, Kelli.Larson@asu.edu
Susan Ledlow, susan.ledlow@asu.edu
Kate Spielmann, kate.spielmann@asu.edu
Arnim Wiek, arnim.wiek@asu.edu

Office Location and Hours:

Course Webpage: myasucourses.asu.edu

Semester hours: 3
Pre-requisites:

SOS 110 & SOS 111 (or PUP 190),
with a grade of "C" or better

ENG 101, 107 or 105

Co-requisites: None
General Studies: TBD

Catalog Description:

Establishes an understanding of the human, social, and cultural dimensions of sustainability from multi- and interdisciplinary perspectives and at a variety of spatial and temporal scales.

Course Overview:

In *Society and Sustainability,* you will develop your understanding of the human, social, and cultural dimensions of sustainability from multi- and inter-disciplinary perspectives and at a variety of spatial and temporal scales. The course will cover a variety of theories, methods and applied problems that are used by social scientists to study the dynamics of human-environment interactions. Emphasis will be placed on combining approaches and insights from geography, anthropology, psychology, sociology, and political science to analyze and address real-world problems of sustainability. The course also emphasizes advancing students' critical thinking and professional skills. You will present your ideas verbally and in writing in both formal and informal settings. You will also learn to give and receive feedback on written and verbal communication and team skills.

Sustainability Literacy:

All courses in the School of Sustainability are designed to build and deepen your understanding of the following key concepts:

- *Systems Dynamics*: Human systems and natural systems are linked. Changes in any part of any system has multiple consequences that reach far beyond the initial change.

- *Tradeoffs*: Solving almost all problems related to sustainability involves tradeoffs. There are rarely perfect solutions with no costs, and there are often winners and losers.

- *Cascading Effects and Unintended Consequences*: There are cascading effects (positive and negative, intended and unintended) of human policies, decisions, and actions, all of which have implications for sustainability.

- *Scale*: Problems of sustainability exist at multiple scales. Solving a problem at a local level is a very different thing than solving a problem across international boundaries.

- *Transdisciplinarity*: There is no one "solution" to address sustainability – no one person has the answer. We need scientists and social scientists of all disciplines, politicians, entrepreneurs, artists, farmers, business and community leaders, and *you* to work towards a sustainable future.

Learning Outcomes for *Society and Sustainability*:

After taking *this course*, you should be able to:

- Discuss sustainability as a local to global issue while considering various temporal scales in the past, present, and future;

- Evaluate theories of human ecological behavior and programs for sustainable actions;

1

- Evaluate the nature and importance of interactions among scientists, policy makers, stakeholders, and the general public in decision-making.
- Understand the contexts in which decision-making takes place and the place of public and stakeholder participation in the decision-making process.
- Discuss the concepts and interrelationships among values, beliefs, norms, and behavior as well as perceptions, knowledge and multiple ways of knowing;
- Evaluate approaches to behavioral change from a social-scientific perspective.
- Evaluate the social justice components of sustainable choices;
- Locate and evaluate the credibility of online and print resources related to sustainability;
- Demonstrate effective interpersonal communication (written and oral) and presentation skills.

Required Readings:

Harper, C. L. (2008). *Environment and society: Human perspectives on environmental issues (4th Ed.).* Upper Saddle River, NJ: Pearson-Prentice Hall.

McKenzie-Mohr, D. Promoting sustainable behavior: An introduction to community-based social marketing. *Journal of Social Issues, 56* (3), 543-554

Additional Readings:

Additional readings from the following sources may be assigned. Some are available online in full text, excerpts from others may be acquired through the ASU Library's online reserve system. See the course Blackboard site for the details and link.

Archer, E., & Turner, **B. L.** III (1997). *Introduction to the human dimensions of global change* (Active Learning Modules on the Human Dimensions of Global Change Series).

Beatley, T. (2004*). Native to nowhere: Sustaining home and community in a global age.* Washington, DC: Island Press

Cialdini, R. B. (2000) *Influence: Science and practice (4th Ed.)* Boston: Allyn and Bacon

Easton, Thomas (Ed.). (2008). *Taking Sides: Clashing Views on Controversial Environmental Issues (13th Ed.).* McGraw-Hill/Dushkin

Haenn, Nora and Richard Wilk (Eds.). (2005). The Environment in Anthropology: A Reader in Ecology, Culture, and Sustainable Living. New York: NYU Press.

Kasemir, B., Jager, J., Jaeger, C.C., & Gardner, M.T. (2003). Public Participation in Sustainability Science – A Handbook. Cambridge, UK: Cambridge University Press.

Kempton, W., James S. Boster, and Jennifer A. Hartley. (1996). *Environmental values in American culture.* Cambridge, MA: MIT Press

Moran, Emilio. (2006). *People and Nature: An Introduction to Human Ecological Relations.* Malden, MA: Wiley-Blackwell.

National Research Council (U.S.). (1999). *Our Common Journey - A Transition toward Sustainability.* Washington, D.C.: National Academy Press.

Assessment and Evaluation:

Class Participation and Discussions: 25%. Students are expected to attend all class sessions, as well as participate in class by raising questions or discussion points and contributing their knowledge, perspective, experiences and examples relevant to course topics. At times we will have in-class team problem-solving activities—these cannot be made up if you are absent.

Critical Essays: 40%. You will write two 3-5 page analytical essays (worth 20% each) that demonstrate your understanding how fundamental concepts you learn in class apply to new situations or cases. For each essay, you should select a specific principle or concept of sustainability, and provide a recent (within the last two years) case that exemplifies that principle or concept. A detailed rubric for this assignment is included on pages 6-7 of this syllabus. Draft essays will be due earlier than the final essays to allow for peer evaluation and feedback will be provided on each essay (see course schedule on p. 5).

Team Project Community-Based Social Marketing Campaign: 25%. This project is designed to foster sustainable behavior in the Phoenix area. It has three components: an analysis of the problem, a community-based social marketing plan, and a poster presentation. A detailed rubric with format and grading criteria will be provided on the course website. See deadlines on course schedule (p. 5).

1. Problem definition. (10%) Each team will identify a sustainability-related problem that is applicable to the Phoenix area. You may select a topic such as reducing outdoor water use, increasing the use of public transportation, decreasing the use of gas lawn mowers and leaf blowers, etc. A 5-page essay discussing the nature of the problem, prior efforts to address the problem here or elsewhere, and some preliminary ideas for a community-based social marketing campaign to address the problem.

2. Community based social marketing plan. (10%) Based on feedback received on their problem definition, teams will design a program to address the identified problem. You will use the Community Based Social Marketing approach developed by Doug McKenzie Mohr (see http://www.cbsm.com/). You are also expected to use scientifically based principles of social influence (Cialdini, 2005) to create the messages you will use in your campaign. A detailed rubric for this assignment, including grading criteria will be provided on the Blackboard site.

3. Posters. (5%) Each team will create a poster outlining the fundamentals of the problem and the team's marketing plan. A class poster session will be held during the scheduled final exam period. Faculty and graduate students will be invited to review the posters and an award will be given to the top team.

Reflection: 10%. You will write a short 2 page essay about the differences between the individual critical essays (#1 and #2) and the team project with respect to experiences, strengths, and weaknesses of the different approaches. Additional details about what should be included in the reflection essay will be provided on the course website. A draft essay will be due earlier than the final essay to allow for peer evaluation (see course schedule on p. 5).

Course Website:

This course has an accompanying myASU website. Log in to the site at http://myasucourses.asu.edu/ using your ASURITE ID and password. You should see "SOS 320: Society and Sustainability" The website contains reading, assignments, links, email addresses, and a discussion forum.

Note: myASU acquires your email address directly from ASU's EPO. This means that you will have to check your ASU email, **or have it forwarded to your preferred account** to get information sent from instructors or from your classmates. For tutorials to assist you, go to http://asuonline.asu.edu/StudentSupport/Tutorials6/index.cfm

Course Policies and Expectations:

Deadlines. Late assignments will not be accepted except in extreme emergencies, and with documentation. Five points per day of the week will be deducted for past due assignments.

Disability Accommodations. If you need disability accommodations for this class, please see me as soon as possible, so that I may work with the Disability Resource Center to meet your needs. Information regarding disability is confidential. (http://www.asu.edu/studentaffairs/ed/drc/).

Plagiarism. Copying the work of others is unacceptable and will be disciplined according to university policy (see http://www.asu.edu/studentaffairs/studentlife/judicial/academic _integrity.htm). Always credit your information sources following professional standards.

Respect. Please act professionally during classroom conversations and activities, and respectfully allow your classmates to express a diversity of views and perspectives.

Subject to Change. All class syllabi are subject to minor changes as necessary to accommodate the needs of the instructor, School, or class.

Writing Center:

If you are concerned about your writing skills, I highly recommend that you visit the ASU Writing Center. The Center provides on-site tutors to help students increase their confidence as writers and improve writing skills free of charge. For information, see http://studentsuccess.asu.edu/writing/

Course Schedule:

Introduction	
Week	Topics for Mini-lectures
1	The intersection of sustainability and society
Critical Issues and Trends	
2	History of the concept of sustainability; Introduction to human dimensions; Measuring sustainability indicators
3	Patterns in production, consumption and welfare; Importance of multi-scale and long-term perspectives
Long-term Perspectives on Socio-Ecological Systems	
4	Time depth of human interactions with the environment; Enduring legacies of human-environment interaction *Bring your Draft of Essay #1 for Peer Review Activity!*
Values, Worldviews and Sustainability	
5	Global and local scale values; Plural rationalities and diverse approaches *Essay #1 Due!*
Environmental Attitudes and Action	
6	Social acceptance of policies; Discrepancies among knowledge, attitudes and behaviour *Feedback on Essay #1 – Common Issues and How to Resolve Them* (C4)
Pro-Ecological Behavior Change	
7	The greening of lifestyles and consumerism; Fostering sustainable action through social marketing and other means *Team Project – Problem Definition Due and Campaign Outline Due!*
Place and Culture in Sustainability	
8	Understanding place and culture; The importance of local context in human-environment relations
Ecological Knowledge	
9	Different ways of knowing; Implications for sustainability, policy and action. *Feedback on Team Projects – Common Issues and How to Resolve Them* (C4)
Public Participation	
10	Democratic participatory decision-making; Environmental and related social movements *Bring your Draft of Essay #2 for Peer Review Activity!*
Governance and Institutions	
11	Community-based conservation and scales of governance *Essay #2 Due!*
12	Alternative management paradigms; scale; top-down vs. bottom-up policies and programs. *Feedback on Essay #2 – Common Issues and How to Resolve Them* (C4)
Science-Policy Interactions	
13	The role of science in policy-making ; The science of decision-making and the politics of science *Team Projects and Posters Due!*
Risk and Vulnerability	
14	Conceptualizing and evaluating vulnerability and people at risk; Approaches to mitigation; Environmental justice and equity *Bring your Draft of the Reflection Essay for Peer Review Activity!*
15	*Reflection Essay Due!*

Rubric for Critical Analysis Essays (C2), (C3)

This semester, you will write two analytical essays that demonstrate your understanding how fundamental concepts you learn in class apply to new situations or cases.

Essay #1: Draft is due in week 4; Final is due in week 5; Feedback provided in week 6 (C4)

Essay #2: Draft is due in week 10; Final is due in week 11; Feedback provided in week 12

Format

For each essay, you should select a specific principle or concept of sustainability, and provide a recent (within the last two years) case that exemplifies that principle or concept. For example, if you choose the principle of "environmental justice" you might discuss a case about toxic wastes being stored in close proximity to a school in a low income neighborhood, or a case of chemicals that are banned in the US being used in another country to make products sold in the US.

Your essay should include:

- An introduction that defines the principle or concept and explains why it is relevant to sustainability;
- An presentation/description of the case you are using as an example;
- An analysis of how the case exemplifies the concept or principle; and,
- An evaluation of the relationship of social, environmental, and economic aspects of the case.

The essay must be written from an academic perspective for an academic audience. You are expected to use academic sources to substantiate your ideas (Note: Wikipedia is not an academic source), and to fully reference those sources both in the text and reference section of the paper. Each essay should be typed, spellchecked, and absolutely no more than five pages long. Please refer to the *Publication Manual of the American Psychological Association* as your style guide.

Peer Review

You will bring a draft to class one week before the essay is due and we will have a structured peer review activity. You will get feedback on the content of your own essay and give feedback to at least one other student. This activity will help you revise before you hand in your final product.

Submission

Essays should be turned in using the Assignment feature on Blackboard. Grades on late essays will be reduced by 10% per day.

Scoring Rubric (C4)

Criteria Weight	Levels of Achievement					Weight x Score
	Superlative (10-9 points)	Exceeds Expectations (8-7 points)	Meets Expectations (6-5 points)	Below Expectations (4-3 points)	Unacceptable (2-1 points)	
Accuracy 70%	Clear and accurate connections between the case and concept. Demonstrates a complete understanding of the concepts. Sophisticated analysis.	Obviously above the norm. Shows a good understanding of the concept. Analyses are accurate. Looks beneath the surface; notes subtle relationships.	More than just the basic information, but connections may not be. A few inaccuracies may be present. Straightforward, but rather routine discussion.	Many connections may be incorrect. No evidence that the concept is understood. Examples show little critical thought—might be heavily "borrowed" from examples in the book.	Most of the analysis inaccurate. No understanding of concepts is presented. Obviously done at the last minute with little thought.	
Organization 25%	Clear and logical; excellent development of ideas. Follows the required format. Each entry lists the phenomenon, provides an example, then explains how the example fits.	Well written and clearly developed. Most entries follow the format.	Some sections are better written than others. Logic weak or conclusions vague in some instances.	Does not follow format. Generally poorly organized. Rambles.	Completely lacking in organization. No structure to entries.	
Mechanics[1] 5%	Virtually no errors in spelling punctuation, grammar. Follows APA format accurately.	No significant problems of mechanics. Few errors in APA format.	Recurring problems—could have used a final edit. Some errors in APA format.	Serious mechanical problems in need of correction/remediation. Little attention to APA format	Mechanical and organizational problems impede communication. Shows no knowledge of APA format.	

[1] spelling, punctuation, grammar

ENVIRONMENT AND SOCIETY

Human Perspectives on Environmental Issues

FOURTH EDITION

CHARLES L. HARPER

FOURTH EDITION

ENVIRONMENT AND SOCIETY

Human Perspectives
on Environmental Issues

CHARLES L. HARPER

Creighton University

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Promoting Sustainable Behavior: An Introduction to Community-Based Social Marketing

Doug McKenzie-Mohr*

St. Thomas University

Most programs to foster sustainable behavior continue to be based upon models of behavior change that psychological research has found to be limited. Although psychology has much to contribute to the design of effective programs to foster sustainable behavior, little attention has been paid to ensuring that psychological knowledge is accessible to those who design environmental programs. This article presents a process, community-based social marketing, that attempts to make psychological knowledge relevant and accessible to these individuals. Further, it provides two case studies in which program planners have utilized this approach to deliver their initiatives. Finally, it reflects on the obstacles that exist to incorporating psychological expertise into programs to promote sustainable behavior.

> *Don't let us forget that the causes of human actions are usually immeasurably more complex than our subsequent explanations of them.*
>
> —Fyodor Dostoevsky

I have a simple wish. Each time I journey to the library to review new contributions to the environmental psychology literature, I hope that I will see an individual whom I know, from either a nongovernmental organization, or the Department of the Environment, or the city, who works on environmental programs. My wish is that I will find this individual reviewing the literature and contemplating how best to apply it to program delivery. I have carried this wish for a decade now and it is yet to be realized. Consequently, I have become increasingly convinced that despite our desire to contribute to the attainment of a sustainable future, our publications contribute far more to career advancement than they do to environmental

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*Correspondence regarding this article should be addressed to Doug McKenzie-Mohr, Department of Psychology, St. Thomas University, Fredericton, New Brunswick, Canada E3B 5G3 [e-mail: McKenzie@StThomasU.ca].

betterment. We have created a psychological literature that is largely invisible to those who can most benefit from it. Lack of visibility, however, does not equal irrelevance. Changing individual behavior is central to achieving a sustainable future. Accordingly, psychology is of considerable relevance to the delivery of effective environmental programs. Desirable goals, such as lowering greenhouse gas emissions, reducing waste, and increasing energy and water efficiency can be met only if high levels of public participation are achieved. Despite the apparent importance of psychological knowledge to effective program design, program planners have yet to widely access or utilize it. Indeed, my experience in working with these individuals has led me to believe that most are not aware that our literature exists or of its relevance to their efforts. I expect that the pressures that exist to publish in academic journals have led to few attempts to make our expertise accessible to those who can most benefit from it. Until we do this we can feel self-righteous in conducting environmental research, but I doubt that we are participating in a truly meaningful enterprise. In short, until we reach out to the individuals who design and deliver environmental programs, our efforts will remain invisible to those who can most benefit from them.

This article presents one attempt to make psychological knowledge visible and relevant to program planners. It outlines a process, community-based social marketing, for developing and delivering environmental programs that is based on psychological expertise. This process has now been presented via workshops, publications, and a Web site (www.cbsm.com) to several thousand program planners in Canada (Kassirer & McKenzie-Mohr, 1998; McKenzie-Mohr, 1996; McKenzie-Mohr & Smith, 1999). This article also presents two attempts by planners to apply this information and reflects on the challenges faced in its application.

To date, most programs to foster sustainable behavior have been information-intensive. In these campaigns, media advertising and the distribution of printed materials are used to foster behavior change. Information-intensive campaigns are usually based on one of two perspectives on behavior change. With the first, program planners assume that by enhancing knowledge of an issue, such as global warming, and encouraging the development of attitudes that are supportive of an activity, such as using mass transit, behavior will change. Unfortunately, a variety of studies have established that enhancing knowledge and creating supportive attitudes often has little or no impact upon behavior. For example:

- Householders who were interested in enhancing the energy efficiency of their homes participated in a comprehensive workshop on residential energy conservation. Despite significant changes in knowledge and attitudes, behavior did not change (Geller, 1981).

- Householders who volunteered to participate in a 10-week study of water conservation received a booklet that described the relationship between water use and energy use, and methods were described that

could conserve water. Even though great attention was given to preparing the booklet, it had no impact upon water consumption (Geller, Erickson, & Buttram, 1983).

- Two surveys of Swiss respondents found that environmental attitudes and knowledge were poorly associated with environmental behavior (Finger, 1994).

- When 500 people were interviewed regarding their personal responsibility for picking up litter, 94% acknowledged responsibility. When leaving the interview, however, only 2% picked up litter that had been "planted" by the researcher (Bickman, 1972).

The second perspective suggests that behavior is strongly influenced by economic motives. When planners adopt this perspective, they are apt to deliver programs that highlight the economic advantages of engaging in a specific activity, such as installing compact fluorescent bulbs, assuming that the public is "rational" and will act in their economic self-interest. As before, information-intensive programs that have been based on this perspective have also been largely unsuccessful. For instance, California utilities annually spend $200 million to foster residential energy efficiency through the purchase of energy-efficient innovations, such as programmable thermostats, or through lifestyle changes, such as turning down air conditioning before leaving for work (Costanzo, Archer, Aronson, & Pettigrew, 1986). Despite this expensive advertising campaign, household energy use has remained essentially unaltered. Similarly, when the Residential Conservation Service (RCS) was brought into existence by an act of the U.S. Congress in 1978, utilities were mandated to provide their customers with free home energy audits, low-cost loans, and information on contractors and suppliers. Evaluations of this effort suggest that on average energy use per household was reduced by 2–3% (Hirst, 1984; Hirst, Berry, & Soderstrom, 1981; U.S. Department of Energy, 1984). Considering that millions of dollars were spent on the RCS and that energy savings of substantially more than 2–3% are attainable, this initiative can only be viewed as a failure. A U.S. National Research Council report concluded that the RCS overlooks "the rich mixture of cultural practices, social interactions, and human feelings that influence the behavior of individuals, social groups and institutions" (Stern & Aronson, 1984).

Information campaigns likely proliferate because it is comparably easy to air radio or television advertisements or distribute printed material. Advertising, however, is often a very expensive way of reaching people. In one extreme case, a California utility spent more money on advertising the benefits of insulation than it would have cost to upgrade the insulation of targeted homes (Pope, 1982). The failure of mass-media campaigns to foster sustainable behavior is due to some extent to inadequate design of the messages, but more importantly to an underestimation of the difficulty of changing behavior (Costanzo et al., 1986). Costanzo et al. note

that most mass-media campaigns to promote energy efficiency are based upon traditional marketing techniques in which the sustainable activity is viewed as a "product" to be sold. Advertising, they indicate, is effective in altering our preference to purchase one brand over another. Altering consumer preferences, however, is not creating new behavior. As they note: "These small changes in behavior generally require little expense or effort and no dramatic change in lifestyle" (p. 256). In contrast, promoting engagement in a new activity, such as walking or biking to work, is much more complex. An array of barriers to these activities exist, such as concerns over time, safety, weather, and convenience. The diversity of barriers that exist for any sustainable activity means that information campaigns alone will rarely bring about behavior change.

In Canada, community-based social marketing has emerged as an attractive alternative to information-intensive campaigns. This emergence can be traced to a growing understanding on the part of program planners that conventional campaigns, which rely heavily or exclusively on media advertising, can be effective in creating public awareness and improved understanding of issues but are limited in their ability to foster behavior change (Aronson & Gonzales, 1990; Costanzo et al., 1986; Yates & Aronson, 1983).

Community-Based Social Marketing

Community-based social marketing is composed of four steps: uncovering barriers to behaviors and then, based upon this information, selecting which behavior to promote; designing a program to overcome the barriers to the selected behavior; piloting the program; and then evaluating it once it is broadly implemented (McKenzie-Mohr & Smith, 1999). Community-based social marketing merges knowledge from psychology with expertise from social marketing (see also Geller, 1989). Social marketing emphasizes that effective program design begins with understanding the barriers people perceive to engaging in an activity (see, for example, Andreasen, 1995). Social marketing also underscores the importance of strategically delivering programs so that they target specific segments of the public and overcome the barriers to this segment's engaging in the behavior.

Uncovering Barriers and Selecting Behaviors

Reduction of the municipal solid waste stream can occur from a variety of activities, such as recycling, source reduction, or reuse. Similarly, lowering greenhouse gas emissions can be achieved by such actions as using alternative transportation (carpooling, bicycling, telecommuting) or lowering household energy use (upgrading insulation levels, installing low-flow showerheads, or closing blinds before leaving for work). Although it might be desirable to promote all of these

behaviors, resources rarely exist to foster public participation in a wide range of activities. Consequently, it is necessary to make an informed decision regarding which behavior(s) to promote. With community-based social marketing, the decision regarding which behavior(s) to promote is based primarily upon the answer to three questions. First, what is the potential impact of the behavior? That is, what level of reduction in greenhouse gases are achievable, for example, through modal transportation shifts or the purchase of more-energy-efficient vehicles? Second, what barriers exist to engaging in these activities? In deciding which behavior to promote, it is important to know what the barriers are to broad public participation in the activity. In a limited number of cases, the psychological literature has already identified barriers (see, for example, McKenzie-Mohr, Nemiroff, Beers, & Desmarais, 1995; Schultz, Oskamp, & Mainieri, 1995), though frequently this information needs to be contextualized. For instance, in colder climates winter can be a significant barrier to year-round backyard composting, whereas weather may not be a consideration at all in other areas. In many cases, barriers have not been identified (see Stern & Oskamp, 1987, for a review of the environmental psychology literature), necessitating that preliminary research be conducted prior to deciding which behavior(s) to promote. In identifying barriers, social marketers often identify differences between individuals who engage in the activity and those who do not. Several research methods can be utilized to uncover these differences, including focus groups, observational studies, and survey research. Further, statistical techniques, such as discriminant analysis and logistic regression, can be particularly useful in identifying and prioritizing differences. For example, these techniques were used to distinguish householders who engage in backyard composting from those who did not (McKenzie-Mohr et al., 1995). This research revealed that in comparison to noncomposters, individuals who compost perceive reducing waste as being more important, and composting as less unpleasant, inconvenient, and time consuming.

Barriers to a behavior may be either internal (e.g., lacking the perceived skill to install a programmable thermostat) or external (e.g., absence of programmable thermostats locally; see Stern, this issue). Also, numerous barriers exist for any behavior, and these barriers appear to be behavior specific (McKenzie-Mohr et al., 1995; Oskamp, 1995; Tracy & Oskamp, 1983–84). That is, what impedes an individual, for example, from walking to work is distinct from what might preclude her from closing the blinds each morning or purchasing products with recycled content. Accordingly, the genesis of a sound community-based social marketing strategy is identifying barriers. Without detailed knowledge of barriers, it is highly unlikely that an effective strategy can be developed. Psychological expertise in research methods and statistical techniques can contribute significantly to the uncovering of barriers and the development of sound strategies.

The third question to be asked in determining which behavior(s) to promote is whether the resources exist to overcome identified barriers. An important

consideration in contemplating the answer to this question is whether the behavior is one-time (e.g., purchasing an energy efficient vehicle) or repetitive (e.g., closing blinds each day before leaving for work). In general, it is more difficult to alter and maintain repetitive behavior changes than it is to bring about one-time changes in behavior (see for example, Kempton, Darley, & Stern, 1992; Kempton, Harris, Keith, & Weihl, 1984).

Designing Strategies

An effective social marketing strategy removes barriers to the behavior to be promoted. For example, in fostering the purchase of products with recycled content, the King County Commission in Washington State first identified barriers to their purchase and then systematically removed them (Herrick, 1995). Survey and focus group research indicated the existence of five barriers to the purchase of these products. The commission felt that little could be done with respect to two of these barriers: the perception that these products cost more and were of inferior quality. The three other barriers, low awareness of which products had recycled content, suspicion regarding environmental claims of manufacturers, and the difficulty of quickly identifying these products while shopping, could, however, be overcome. Although this program utilized traditional media and in-store advertising, it relied primarily upon a shelf prompt that advertised that a product had recycled content. The results from this social marketing strategy demonstrate the importance of first identifying barriers and then systematically removing them. Analysis of electronic inventories of participating retail stores indicated that purchases of recycled-content products rose 27% as a consequence of this social marketing strategy. This successful program has now been adopted by a number of cities throughout the United States.

Psychological expertise can be readily applied to removing barriers to behavior change (see McKenzie-Mohr & Smith, 1999, for an overview of how this knowledge can be applied to program design). For example, when low motivation exists to engage in a sustainable behavior, it can be enhanced through the use of commitment strategies (see Katzev & Wang, 1994) or incentives (see Gardner & Stern, 1996). When individuals do not perceive an activity as being the "right thing to do," knowledge regarding the use of injunctive and descriptive norms can be applied (see, for example, Cialdini, Reno, & Kallgren, 1990). Numerous other applications of psychological knowledge to strategy design can be made (see Bator & Cialdini, this issue, for further examples).

Piloting

Following the development of a strategy, it should be piloted prior to being broadly implemented. Once again, psychological expertise in research methods

and statistics can lead to cost-effective and definitive pilots. With community-based social marketing, pilots are repeated until the desired level of behavior change has been achieved.

Evaluation

Despite the expense of delivering many environmental programs, evaluations of their effectiveness are infrequent. Community-based social marketing stresses the evaluation of implemented programs. Further, it emphasizes the direct measurement of behavior or its consequences (e.g., energy use) rather than relying on self-report measures.

Case Studies

Community-based social marketing has now been applied in a variety of projects across Canada. Here are two examples (others can be found at www.cbsm.com and www.toolsofchange.com).

Backyard Composting

The province of Nova Scotia recently announced a ban of all organic materials from landfills. In response, municipalities throughout the province are developing initiatives to remove organics from the waste stream. In King and Annapolis County, local officials decided to promote backyard composting as their preferred method of meeting this ban. Following the principles of community-based social marketing, they first conducted survey research to identify local barriers to backyard composting and determine present levels of backyard composting. This research identified that a surprisingly high number of residents (56%) were composting. Further, this research indicated that in comparison with composters, those who were not composting perceived it to be inconvenient and unpleasant, not the "right thing to do," and lacked basic knowledge on how to compost. Based on a review of the psychological literature, the program planners developed a unique initiative to leverage current levels of composting and overcome identified barriers. Given the high number of householders who were already composting, it was decided to leverage this participation in encouraging others to backyard compost. Students contacted local residents by telephone and asked them if they presently composted. Those who did were asked to make two commitments. The program planners reasoned that one explanation for the absence of community norms supporting backyard composting was the relative invisibility of composting compared to other activities, such as curbside recycling. Accordingly, those who composted were asked to commit to placing a decal on the side of their blue box or garbage container indicating that they composted. As a form of commitment, the act of

placing a decal on the side of their blue box or garbage container served to increase the likelihood that the household would compost more effectively, while at the same time fostering the development of descriptive social norms (Cialdini et al., 1990) in which composting is seen as appropriate behavior.

Based upon previous research that has successfully utilized commitments to spread the adoption of a new technique, grass cycling (Cobern, Porter, Leeming, & Dwyer, 1995), a similar approach was used in this project. Householders who composted were asked to speak to their neighbors about composting and provide them with a package that dispelled perceptions that it was unpleasant and inconvenient, and provided requisite information on how to compost. While fully 81% agreed to place a decal on their blue box or garbage container, very few were willing to speak to their neighbors. This reluctance was a significant setback to the delivery of the program and underscores the importance of piloting strategies before broad implementation.

Those who indicated on the telephone that they did not compost were asked if they would be interested in beginning to compost. Those who expressed interest were visited by an employee who addressed the specific barriers that had been identified in the survey research. Although funding did not allow evaluation of this project, a pilot project that had been conducted the previous year, upon which this larger project was partially based, revealed that 80% of those household residents who had expressed an interest in composting were found to be composting in a follow-up several months later (K. Donnelly, personal communication, 1999).

Encouraging Water Efficiency

As a consequence of lawn watering, summer water use can rise 50% relative to other times of the year. In an effort to offset the cost of building a new water-processing plant, Durham Region, Ontario, developed a community-based social marketing strategy to reduce water use by 10% (Durham Region, 1997). Through survey techniques and direct observation, barriers to water-efficient lawn care were identified. Pilot households were divided into two groups. Householders in the first group were visited by a student employee on bicycle who spoke to residents about efficient water use. Although psychological knowledge was not used to shape the presentation of this information, residents were provided with a water gauge (one identified barrier was that residents were unaware of when they had watered their lawn adequately) and a prompt that was to be placed over the outside water faucet that reminded residents to water their lawn on either odd or even calendar days based upon their house numbers and to water their lawns only when it had not rained in the previous week. Further, these residents were asked to sign commitments that they would water their lawns only on odd or even days and that they would limit their watering to one inch per week (72% of those approached made these commitments). Meanwhile, those householders who were in the

"information only" condition were provided with an information packet on efficient water use. Compared to baseline measurements, observation of residents indicated that those householders who were visited by cyclists decreased watering by 54%, whereas those in the "information only" control group increased lawn watering by 15%. Further, watering lawns for longer than 1 hour decreased by 66% when householders were visited by a cyclist, whereas it increased by 96% in the other condition. In total, this program cost $88 (Canadian) to deliver per household, for a total program cost of $80,000. Durham Region calculates that the achieved reduction in peak water consumption allowed 250 new homes to be serviced with a savings in water plant development costs of $945,000.

Reflections

In the experience of the author, psychologists are most likely to have an influence in the area of program design. That is, program planners are receptive to techniques that they can employ easily, such as the use of commitment strategies or vivid communications, into the delivery of their programs (see Bator & Cialdini, this issue, for further examples). The other components of community-based social marketing—identifying behaviors and their barriers, piloting, and evaluation—are far less likely to be utilized. It is useful to reflect on why program planners are less likely to incorporate other central aspects of sound program design and delivery.

Although identifying barriers is a critical step in deciding whether it is wise to attempt to promote a specific behavior as well as craft a social marketing strategy, significant pressures exist to skip this step. Indeed, in a recent review of Canadian environmental programs, most programs were found not to identify barriers prior to developing strategies (Kassirer & McKenzie-Mohr, 1998). A variety of reasons exist for not identifying barriers. Three of the most common include

- Program planners are likely to believe that the barriers to an activity are already well known.
- Most programs must be delivered within a short period of time, which makes conducting barrier research a challenge.
- The organizations that deliver these programs suffer from financial constraints that make additional work difficult to justify.

Social psychological research suggests that we readily form personal theories regarding the behavior of others and then search selectively for information that confirms our beliefs. This suggests that program planners are apt to believe that they already fully understand the barriers to an activity, independent of whether they actually do. Although as psychologists we may not be able easily to persuade them that their personal theories may be in error (particularly when programs are not evaluated and, therefore, do not provide feedback on their efficacy to their

designer), we are more likely to be effective if we can provide research findings on the barriers to an activity that they are interested in promoting. To date, psychological research on barriers primarily has been confined to energy efficiency and waste reduction. We quickly need to develop knowledge regarding the barriers to a much broader set of activities. Further, we need to participate in interdisciplinary efforts to identify the most important activities to research.

Conducting barrier research will add significantly to the length of time required to deliver a project. In many cases, it is reasonable to assume that collecting this information can add 4 to 8 weeks to the length of a project. Further, obtaining this information can add substantially to the cost of delivering a program. This additional time and cost are likely to pale, however, compared to the time and cost of redelivering a program because the first attempt failed to change behavior. It would be useful if we could provide return-on-investment (ROI) information that compared the relative success of projects in which barriers were first identified with those in which they were not.

As with identifying barriers, time and financial constraints also limit the likelihood that programs will be piloted or evaluated. Given that psychological research has revealed that many programs do not change behavior, adopting pilots and evaluations is particularly important.

Over the last several years, I have been attempting to make psychological knowledge more accessible to program planners through delivering workshops and writing specifically for them and by developing a Web site (www.cbsm.com) that allows easier access to relevant information. For example, the Web site provides a guide to fostering sustainable behavior and searchable databases of relevant articles, case studies, and graphics. Further, the site provides the opportunity for program planners to share information with one another and with psychologists through a discussion forum. The feedback that I have received on these attempts to make psychological knowledge more visible suggests that program planners are willing recipients of this information and are anxious to have a dialogue with psychologists regarding program delivery. To ensure that this happens, we need to make certain that attempts by psychologists to work more actively with program planners are not an impediment to tenure and promotion.

Conclusion

To date, little attention has been paid to ensuring that psychological expertise regarding behavior change in general, and fostering sustainable behavior in particular, is shared with program planners. Substantial opportunities exist to work with these individuals in promoting a wide range of sustainable behaviors. As environmental psychologists we need to consider how best to share our expertise with program planners and ensure that our efforts are well integrated with their needs. Behavior change may be central to the transition to a sustainable future, but

psychological knowledge has yet to become central to the development of initiatives to foster sustainable behavior.

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