

ENVIRONMENTAL CRISES AND ENVIRONMENTAL STUDIES: A ROLE FOR PSYCHOLOGY

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In a recent volume entitled *Earth in the Balance: Ecology and the Human Spirit*, the American Vice-President Al Gore (1992) chronicles humanity's ongoing and widespread abuse of the natural environment as seen in such widely heralded crises as global warming, depletion of the ozone layer, deforestation, air and water pollution, soil erosion and desertification, and the extinction or near extinction of once viable plant and animal species.

Hardin's (1968) well known scenario, "The Tragedy of the Commons", is illustrative of many of these problems as humanity at various levels of organization from nation state to individual continues to exploit natural resources in limited supply without serious regard to the longer term consequences of such activity. Hardin's scenario clearly suggests that many of our major environmental problems, although often couched in terms of population demographics or unbridled and irresponsible industrialization, are ultimately rooted in inappropriate and often destructive human attitudes and behaviour toward the environment in both its physical and socio-cultural manifestations.

In Gore's (1992) estimation, the environmental crises with which humanity is contending have produced a sense of alienation from the natural world, a kind of spiritual malaise which might be countered to a degree by a

form of collective ecological activism fueled by a fundamental change in the attitudes and behaviour of billions of people.

Technological responses to the various environmental crises are no doubt necessary and useful but are unlikely, in themselves, to stem the tide of environmental degradation. A fundamental change in the underlying ethos that guides humanity's response to the environment will have to be cultivated. This change will require a widespread understanding and acceptance of the fact that "man" is not apart from the natural order but very much a part of, and a major actor in, a highly complex ecosystem whose elements coexist in an intimate and often seamless interaction.

Until relatively recent times, the term "environment" was generally taken to denote the physical environment in which people exist and function. Environmental assessment and management were considered in practice to be the more or less exclusive domain of professionals in the natural and life sciences and their associated engineering technologies. There is now a growing realization among professionals and lay people alike that solutions to the environmental crisis are not the prerogative of a single discipline or technology. The environmental difficulties confronting humanity ultimately derive from the various spiritual/religious (see, for example, Hargrove, 1986; Thompson and Pollock, 1992; Sagan, 1990), philosophical, psychological, sociological, political, and economic perspectives (see, for example, Porter and Brown, 1991) which, directly or indirectly, have shaped human destiny.

Environmental degradation is not solely a product of misconceived or mismanaged industrial strategies. When political issues find their resolution in confrontation rather than negotiation and compromise, the negative consequences for both the physical and social environments can be substantial as evidenced most recently in the Gulf War of 1991. From the human perspective, degradation of the physical environment ultimately

takes its toll in psycho-social terms. When attempts to remedy real or imagined economic and political injustice find their expression in military confrontation, the environment, in a collective sense, typically ranks high among the casualties.

A Rationale for Environmental and Ecological Studies in the University Context

Recognition of the complex, multidimensional origins of our present environmental difficulties is, perhaps, most widespread in the university community where research and teaching activities in many of the traditional academic disciplines bear directly or indirectly on the critical issues. One major and very tangible expression of this concern for the environment is seen in the establishment of interdisciplinary environmental and/or ecological studies programmes. According to the 1993 CompuServe Information Service on-line editions of Peterson's Guide to Undergraduate Education, two hundred and seventy (270) two-year and four-year American and Canadian institutions of higher learning are now offering programmes under the general heading of environmental or ecological studies. The institutions in question range from agricultural colleges and technical or polytechnic institutes to small liberal arts colleges/universities to large state or privately funded university systems.

The University of Florida offers an example of an environmental studies programme in a large state-funded university system. Roughly ten percent of the more than 3,000 regular faculty members contribute to the programme from their unique disciplinary perspectives and with the understanding that each discipline has something of value to contribute to society in terms of an enhanced understanding of how the environmental crisis might most effectively be addressed. The University of Florida

programme has been designed to present students with opportunities for understanding the wider environmental implications of the disciplines or professions in which they have chosen to specialize. The 1992–93 edition of the University of Florida University Record states that:

A certificate program in Environmental studies is available to students with any major in the College of Liberal Arts and Sciences. The program is designed for students concerned with environmental issues. Electives can be structured around an environmental theme, giving experience in an area that may expand career opportunities and make education more meaningful.

The courses will increase the student's knowledge of the physical environment. A number of environmentally related courses requiring no prerequisites are included to help non-science majors become environmentally aware. Science majors will be able to relate their major discipline to current environmental problems through more advanced course work.

The Environmental Studies Certificate requires a minimum of 12 credits of approved environmentally oriented courses with at least one each from the social, physical and biological sciences to total 9 to 12 credit hours.

– University of Florida Record (1992, pp. 139–140)

The recent proliferation of environmental studies programmes at North American institutions of higher learning is a recognition of the need for universities and colleges to mobilize their collective expertise in environmental issues by developing and disseminating the kind of information that will be useful to those in the public policy sector who have

responsibility for the design and implementation of programmes of environmental preservation or restoration. Not the least of the university's contributions is the education of students who will bring the knowledge and skills they acquire in the university with respect to environmental issues to the various positions of professional and personal responsibility they will assume in the wider community following graduation.

In arguing that educational systems must assume a major portion of the responsibility for solving our environmental problems, Orr (1993) urges recognition of the fact that the present environmental crisis:

... is evidence of a prior failure of mind and perception – which is to say, a failure of education. The loss of species, topsoil, rainforests, and impending climate changes are not primarily technological problems or even economic ones. They are first and foremost problems rooted in how we think about the world we inhabit.

– Orr (1993, p. ix)

Orr goes on to suggest that if the academic establishment historically bears some responsibility for disseminating the 18th and 19th century view of an earth of unlimited resources ripe for exploitation, it is now in a position to begin to compensate for that misperception. In Orr's words,

... now we know the Earth to be more complex, mysterious, and limited than the creators of modern academia could have realized – and less amenable to management and manipulation than their successors have often assumed. The ecological expertise and ethical wisdom necessary to heal, restore, and preserve the Earth in the coming century will require a different knowledge set than that required to

industrialize the Earth in the past century and a half. This recognition underscores the need to rethink how educational institutions operate as well as the content and process of education itself.

– Orr (1993, p. ix)

Bowers (1993) echoes this view in his assertion that the present ecological crisis is rooted in the western approach to modernization. Western notions of progress, individualism and rational processes have resulted in culturally enshrined tendencies to view the person apart not only from his or her cultural context but from the natural order as well. The results of a modernization process driven by such cultural prerogatives are now seen in a global environment no longer able to sustain humanity's onslaught on both its renewable and non-renewable resources. Bowers argues that educators must play a critical role in reversing this trend by implementing curricular reforms that begin with the premise that the ecological crisis is the most significant crisis ever faced by humanity and that educational systems must play a critical role in inculcating an ecologically sound concept of humanity's role as member and actor in the natural order.

The University as Environmental Laboratory

If educational systems in general, and universities in particular, were simply institutions where faculty and students reflected on the human condition in abstract terms, their value as a source of solutions to the environmental problems enumerated above might well be limited. However, as Smith (1993) has pointed out, the typical university community often mirrors in its patterns of energy use, waste management, and administrative structure, the larger society of which it is a part. This implies that many of

the environmentally destructive attitudes and activities found in society at large are also likely to be found in microcosm in the university community.

Smith's (1993) volume, "Campus Ecology: A Guide to Assessing Environmental Quality and Creating Strategies for Change," is predicated on the basis that what, on the surface, is obviously a lamentable situation can be turned to advantage by providing a natural laboratory in which students may confront at first hand, but on a smaller and more manageable scale, the environmental problems of society at large by identifying and helping to eliminate harmful practices in which the university, itself, may be engaged. While the alleviation or elimination of environmentally unsound practices will be beneficial to the immediate university community, the most significant long-term advantage is likely to be realized when students exposed to such programmes leave the university to begin to make their livelihoods in the wider society. To the extent that the university lives in the activities of its graduates, ecologically sound attitudes and practices cultivated within the university should be reflected in the contributions these graduates can make in both their professional and personal lives to the ongoing struggle to create an ecologically sustainable world.

Issues in the Development of Environmental Studies Programmes

A multi-disciplinary programme of environmental studies at the university level may be initiated from at least two basic premises. It is possible to proceed with minimum disruption to the established curricular and disciplinary order in an institution by identifying those existing courses which possess environmentally relevant components. A programme developed on this basis can obviously be of value but it may lack the kind of coherence one might expect from a programme that was designed from the

outset with the environment as its mandate and which developed its course offerings in accordance with this orientation. Such a programme could well take advantage of existing course offerings but would also assume responsibility, where necessary, for developing new courses which explicitly reflect its mandate. These two approaches are not mutually exclusive and both could, in theory, tap the expertise of a wide range of disciplines in the natural and life sciences, the social sciences, and the humanities. Each discipline would have a unique perspective to lend in helping to clarify the issues at hand and in the development of practical strategies consistent with an ecologically sustainable environment.

The nature of an environmental studies programme will, in practice, depend very much on such factors as the faculty and financial resources available at the institution as well as the extent to which faculty and administrators are willing to recognize the multi-dimensional nature of environmental issues and the need to develop interdisciplinary programmes consistent with this reality. For various reasons, environmental studies programmes often seem to resolve to programmes of environmental science with an emphasis on the so-called "hard" sciences, including biology, chemistry, ecology geology, physics, hydrology, atmospheric science, and their associated sub-disciplines and technologies such as environmental engineering. Some environmental studies programmes may be more policy-oriented and incorporate such disciplines as economics, political science, environmental law, and communication. The debate between those favouring specialist training and those favouring generalist training in environmental studies often relates to employment prospects for graduates of such programmes with employment statistics and tradition currently giving the edge to specialist training in the more traditional "hard" sciences and engineering applications of these sciences.

If environmental studies is considered to be a kind of meta-discipline whose goal is the integration of a wide variety of perspectives on an inherently complex and multi-dimensional phenomenon, then the question arises as to how and at what level this integration might be achieved. Is the programme designed to achieve this integration within the individual or across a set of individuals who have specialized? Should faculty members be specialists who offer core courses in each sub-discipline with cross-disciplinary seminars provided for purposes of integration? Those who feel that the widespread trend to specialization characteristic of the latter part of the 20th century can be a liability in a field like environmental studies would argue that faculty members should have at least a limited ability to conceptually link the various areas that bear relevance to complex environmental issues. This problem is not unique to interdisciplinary programmes such as environmental studies but can be characteristic even of disciplines which, on the surface at least, appear to possess a certain internal coherence or consistency.

In his discussion of the problems arising from extreme reductionism and specialization in psychology, Johnson (1992) refers to the observations of a biologist – a Dr. Russell – who observed with respect to contemporary science in general that:

... scientists in the United States are good at breaking a problem apart and learning in detail about each part of the problem. But most of them are not very good, or even very interested in, putting together what they learn about the parts so that they have a useful answer to the whole problem. She went on to say that what science needs is a new kind of scientist. We have lots of people doing experiments and generating data. What we need now are a few scientists who are trained

to figure out what the data mean. There are few scientists these days with the breadth of understanding needed to look across a science, or even several sciences, and see how one line of work connects with one another to yield not just data but knowledge. Dr. Russell called these new scientists science overseers.

– Johnson (1992, pp. 26–27).

Johnson (1992) argues that while the reductionist route to knowledge is obviously essential to the evolution of a science, it is ultimately limited in the benefits it can deliver. A point comes when an attempt at integration becomes necessary. The phenomenon or the organism must be put back together; it must be contextualized within, and where appropriate, beyond the confines of a particular discipline. Facts, at some point, must be shaped into knowledge. This is a challenge to all disciplines and a particular challenge to interdisciplinary programmes such as environmental studies where the phenomena in question do not respect the traditional academic disciplinary or sub-disciplinary boundaries.

A Role for Psychology in Environmental Studies Programmes

Each discipline considered for inclusion in a programme of environmental studies must develop a rationale for its participation in terms of the unique theoretical or methodological insights it has to offer. This rationale must also be extended to a consideration of how a given discipline can function in concert with other participating disciplines to encourage the kind of cross-disciplinary integration that a successful environmental studies programme would seem to demand.

Psychology has a unique contribution to make to any environmental

studies programme by virtue of the fact that its diversity encompasses most of the fundamental issues that underlie the present environmental crisis. If the dynamics of the present environmental crisis are ultimately rooted in maladaptive human attitudes and behavior and the consequences of environmental degradation are often psychological in nature, then these are precisely the areas in which psychology has a body of expertise to contribute. It might even be suggested that psychology could play a pivotal and integrating role in an environmental studies programme given its diverse origins and multiple cognate disciplines.

Psychology's credentials for inclusion in an environmental studies programme derive from a number of sources, both explicit and implicit. An appeal to the historical record discloses that environmentalism is a frequent theme in the intellectual discourse that eventually gave rise to modern psychology (See, for example, Marx and Cronan-Hillix, 1987; Hearnshaw, 1989; Lundin, 1991). The origins of western psychology as an academic discipline can be traced back at least 2,000 years to the golden age of natural history and philosophy in ancient Greece. Psychology is therefore heir in the western tradition to many centuries of theological, philosophical, biological, and general scientific speculation about the nature of what, today, we generally consider to be psychological phenomena. The diversity of its origins accounts in part for the diversity of contemporary psychology.

Psychology's diverse origins can also be recognized in Lundin's (1991) metaphorical distinction between the "spirit" and "body" routes to the modern discipline. The route of the spirit can be traced from the rationalist philosophical tradition of ancient Greece, through the so-called Christian millennium (roughly A.D. 400 to A.D. 1450), to the Renaissance, and on to the philosophical traditions of the 17th and 18th centuries as embodied in the British associationists and empiricists. The route of the body begins in

the natural history and empiricist traditions of Ancient Greece, eventually passing through the scientific revolution and ensuing developments in the natural and life sciences in the 17th, 18th and 19th centuries. When psychology emerged as an independent discipline toward the end of the 19th century, it initially took the general form of a science of mental activity and behaviour but a science whose content and methodology are still very much subject to debate.

The diversity of contemporary psychology is also reflected in its many sub-disciplines or specialties. As Lundin (1991) has pointed out, there is today a psychology of almost anything imaginable, including physiological or biological psychology, comparative psychology, ecological or environmental psychology, psychophysics, cognitive and information processing psychology, health psychology, psychoneuroimmunology, behavioural psychology, psycholinguistics, social psychology, organizational and industrial psychology, educational psychology, military psychology, peace psychology, media psychology, philosophical psychology, the psychologies of art, music, and so on. These are not, in theory, mutually exclusive specialties, and some, like environmental psychology, health psychology, and developmental psychology are inherently integrative in character. Given the multi-dimensional nature of environmental issues, it is at least conceivable that psychology could play an integrating role in an environmental studies programme simply by virtue of its historical and contemporary overlap with so many other disciplines likely to participate in such a programme. Psychology, as Hilgard (1992) has suggested, may be more appropriately characterized as an integrative science than a unified one and this integrating role could potentially extend beyond the confines of psychology, itself.

Psychology's long-standing interest in the psychological consequences of interaction with the environment is rooted in the empiricist tradition

dating back to ancient Greece. In more recent times, the Darwinian revolution with its accent on the environment, in a phylogenetic sense, as the agent of selection of anatomical, physiological, and behavioural characteristics of species played a major role in the rise of early psychological systems and theories such as functionalism and behaviorism. Functionalism, for example, stressed the adaptive nature of psychological activity, including consciousness, while behaviorism considered the environment to be the agent of selection for behavioural repertoires acquired during the lifetime of the individual. As Marx and Cronan–Hillix (1987) point out, John B. Watson, the founder of Behaviorism, increasingly emphasized the environment as the primary determinant of behaviour, although earlier in his career he had given greater priority to heredity or phylogenetic factors. The radical behaviorism of B.F. Skinner with its emphasis on the contingencies of reinforcement as determinants of individual behaviour is obviously strongly environmentalist in its perspective (Skinner, 1977).

The ecological psychology of James J. Gibson contrasted with more traditional elementalistic accounts of perception in its emphasis on the reciprocity of perceiver and environment. For Gibson, as Lombardo (1987) points out,

Animate life forms and their environment taken together comprise a reciprocally integrated ecosystem; life functions such as perception and behavior, necessarily involve an environment, and complementarily, environmental properties necessarily involve animate life forms.... Gibson's ecological approach to visual perception involved describing vision as a fact of an ecosystem, rather than just a fact of physiology or the mind.... Later in his career Gibson extended

the principle of ecological reciprocity to cover all of psychology.

– Lombardo (1987, p. 3)

Gibson's principal of ecological reciprocity finds an echo in the work of the Russian psychologist Vygotsky who stressed, as Ratner (1991) points out, that all psychological contents and functions can be traced to the interaction between the individual and his/her social environment.

The contextualized nature of human psychological structure and function seems to be gaining increasing acceptance within modern psychology. The organism – the person – always exists and functions in environmental contexts that may be defined at the physical, physiological, social or cultural levels of integration.

Psychology, in general, might then be said to be the discipline whose essential mandate is to explore from various levels of integration the processes by which individuals engage and are shaped by their complex physical and socio-cultural environments.

Environmental Psychology as a Sub-Discipline of Psychology

Much, although by no means all, of what psychology could contribute to an environmental studies programme is incorporated in the integrative sub-specialty known as environmental psychology. In presenting a rationale for the study of environmental psychology, Fisher, Bell and Baum (1984) point out that many aspects of psychology are relevant to environmental issues. Focusing on the problem of air pollution to substantiate their argument, they note that

Human behaviour is responsible for most urban pollution caused by

automobiles and manufacturing. Therefore, human behaviour will most likely provide the ultimate solution to the problem. Principles of learning, motivation, perception, attitude formation and social interaction help explain why we engaged in and accepted pollution in the first place. Principles of developmental psychology, performance, social psychology, abnormal psychology, and physiological psychology help explain the deleterious effects of pollution on humans. Furthermore, principles of attitude change, behaviour modification, industrial psychology, social psychology, and personality can suggest some steps that will be necessary to change behaviour in order to reduce or eliminate pollution. Political and cross-cultural psychology can be seen to be relevant to the solution or containment of such problems with international dimensions.

– Fisher, Bell and Baum (1984, pp. 1–2).

Fisher et al (1984) also point out that psychologists can make an important contribution to the processes of restoring degraded physical and social environments and designing new human habitats by lending their expertise on the psychological impact of opportunities for privacy and personal space as well as the psychological and medical impact of chronic stress engendered by unremitting and unpredictable extremes of noise, temperature, and pollution of various sorts. In the fields of building or institutional design, the psychologist can usefully contribute to the assessment of whether a particular design, including the aesthetics of that design, will be consistent with the purposes the designer has in mind and whether the design will encourage a sense of comfort and safety and foster the development of mutually beneficial social relationships among occupants.

Energy conservation is a major concern among those trying to foster an ecologically sustainable world. Advances in physical technology, by themselves, have not been sufficient to maximize the efficiency with which energy resources could be used or minimize the negative impact on the physical and social environments associated with the use of these resources. Cone and Hayes (1985) argue for behavioural solutions to environmental problems, pointing out that some problems are simply not susceptible to solution by new physical technologies.

Stern (1992b) argues that many programmes of energy conservation fail to bring the desired results because more attention is typically given to technological and economic aspects of the issue than to the complex factors underlying the human attitudes and behaviour which are essential to the successful implementation of any programme of energy conservation. In the absence of environmentally friendly attitudes and behaviour consistent with these attitudes, any conservation programme will be difficult to implement and sustain. For Stern (1992b), this boils down to the need to look carefully at the psychological factors affecting technology choices and policies. Options and incentives offered to consumers by a conservation programme must be considered in the light, for example, of whether the benefits of the programme are perceived to be outweighed by an unacceptable reduction in lifestyle or standard of living. Individual values must be considered with respect to their impact on environmental attitudes and behaviour.

Stern suggests that psychology has much to offer in facilitating the interface between individual members of the public and the organizations which design and attempt to implement public policy programmes such as environmental conservation. Psychologists have the expertise to advise on the most effective ways to encourage compliance with public policy programmes. Stern also argues that psychologists' expertise in research

design can contribute much to the evaluation of the effectiveness of a programme given that the degree of success or failure of the programme is ultimately dependent on the attitudes and behaviour of those expected to use it.

Kempton et al (1992) make similar arguments in focusing on the psychological dimensions of the public policy levers which must be activated in any energy conservation programme. Psychologists are well equipped to comment on factors promoting a willingness to adjust environmentally inappropriate attitudes and behaviour and can also offer insights into factors promoting a resistance to change within individuals or in the interface between individuals and organizations seeking to encourage change. Psychologists can also contribute to the development of effective strategies for disseminating information to those expected to implement a particular public policy programme such as energy conservation and can point to the various ways in which maximum compliance with the programme might be obtained. Kempton et al caution, however, that psychology's contribution will be limited to the extent that policy planners are unwilling to consider other than economic and technological concerns in the design and implementation of public policy programmes to encourage energy conservation.

Psychology and Environmental Issues in the Wider Sense

If the wider connotations of the term "environment" are acknowledged, the potential contributions of psychology to the public policy arena also expand. DeLeon (1988, 1993) suggests that any objective observer would be easily convinced that psychology, with its large clinical and scientific knowledge bases, has the kind of resources which can be usefully employed

in mobilizing the societal response necessary to deal effectively with pressing social issues in the areas of public health, education, and the multiple consequences of changing population demographics as reflected in increasing cultural and linguistic diversity within societies and the general aging of the population in the advanced industrialized countries. Louttit (1992) identifies worker productivity, schooling and literacy, the aging society, drug and alcohol abuse, mental and physical health, and violence as areas in which psychology has a contribution to make. Howitt (1991) argues for the contextualization of psychology to allow psychologists to more effectively contribute to the solution of such problems on a world wide scale.

Farley (1992) points to how psychology can be a factor in the success or failure of new international alliances amongst nations such as the European Economic Community (EEC) or the North American Free Trade Act (NAFTA). The dislocation of populations, cultural and linguistic conflicts, and the environmental degradation which may attend the formation of such new economic alliances all have potentially negative psychological implications for the individuals and communities involved.

Fisher (1990) focuses on the role social psychology can play in understanding and resolving intergroup conflicts which, as noted above, often exact a significant toll from the physical and social environments which define human existence. In their survey of animal and human research on aggression, Lore and Schultz (1993) come to the conclusion that violence is only one of many options open to the individual in a conflict situation. They argue that as a social species, humans are likely to be highly sensitive to various forms of social control that, effectively deployed, could curb the frequency of violent episodes and thus improve the social and physical environments in which people live.

Health issues can also be seen to have significant environmental

overtones. As Burman and Margolin (1992) note, a biopsychosocial perspective of illness and health (or wellness) is gradually taking hold among health care practitioners. Complex interactions between physiological, psychological and environmental factors associated with lifestyle are now seen to be significant contributing causes in many of the major health problems afflicting affluent nations in particular. DeLeon (1993) cites U.S. Department of Health and Human Services (HHS) reports revealing that all of the top seven major public health risks in the U.S. are essentially behavioral in nature. Sweet et al (1991) point to increasing opportunities for clinical psychologists accompanying the realization that such leading causes of death as cancer, cardiovascular disease, and immunodeficiency disorders have their origins, at least in part, in the lifestyles of patients. The psychologist has potentially much to contribute in terms of encouraging and communicating health-protective attitudes and behaviour. Psychological strategies for encouraging compliance with complex medical treatment regimes as well as alleviation of the psychological impact of chronic illness on the patient and his/her family (rehabilitation care) are obvious areas in which the clinical psychologist has a significant role to play.

The aging of populations, especially in the advanced, industrialized countries, has a variety of psychological implications. Olshansky et al (1993) suggest that the practical limits of human longevity will stabilize near the middle of the next century and that population aging rather than population growth will become the major concern of policy makers. The political, economic, and social infrastructures of aging societies will have to be adjusted to meet the needs of an older citizenry. A significant aspect of this process will be psychological in nature, for attitudes toward aging and the aged and the attitudes of the aged, themselves, will have to be taken into consideration and modified as necessary if viable societies are to be

sustained in the future.

Constraints on Psychology's Participation in the Public Policy Arena

The foregoing suggests that psychology is well placed to participate in many areas of public policy design, implementation and analysis. DeLeon (1986, 1993) has no question that psychology has much to offer and his sentiments are echoed by many others including Bevan (1980, 1982), Sloan (1992), Boneau (1992) and Johnson (1992). Fowler (1990) has argued that psychology might be regarded as a "core" discipline by virtue of its diverse origins and specializations in areas of widespread interest and concern.

Psychology has made, and continues to make, significant contributions to the public policy arena in such related fields as the environment, health, and education, but many psychologists are concerned that psychology has much more to offer than it has so far been able to deliver. The shortfall is attributed by many observers to psychology's failure to fully coalesce as a discipline coupled with a general reluctance by psychologists to become involved in the political push-and-pull of the public policy arena where decisions are taken and policies are designed and implemented.

Sloan (1992) doubts that academic psychologists and psychological clinicians can have much of an impact at the global level with respect to such issues as environmental destruction and inter-ethnic conflict unless psychology can reorganize itself in ways more consistent with "action" research and interdisciplinary cooperation. Sloan's prescription is that

In general, globally effective psychologists will participate in networks of interdisciplinary, international teams of researchers, activists, policymakers, and citizens focusing on particular regional

problems. Within these teams and networks, the skills of psychologists are needed at various stages – in gathering information for advocacy purposes, in grant writing, in bringing a mental health perspective to bear on policy formation, in designing media campaigns, in training service delivery teams, and in analyzing group resistance to change.

– Sloan (1992, p. 7).

DeLeon (1993), who also feels that psychology has much to offer, nevertheless doubts whether psychology will collectively be willing to really accept its societal responsibility to become actively involved in the public policy arena. Boneau (1992) agrees that psychology has much to say with respect to public policy issues such as the environment but feels that much of this will remain unsaid until psychological knowledge is structured in a way that makes it accessible to those responsible for the design and implementation of public policy programmes. He calls for a policy-relevant psychology which focuses on

... the behavior of the intact human interacting with a complex social/environmental context. Everything that psychology knows ought to be seen as providing both a potential insight into this interaction and a potential mechanism for influencing it. Furthermore, the problems of understanding human behavior in this complex context will require understanding of that context. The need for cooperation with disciplines that study human institutions of all kinds is apparent.

– Boneau (1992, pp. 22–23).

Johnson (1992) points to problems within psychology which limit its ability to engage the public arena. An excessive and prolonged reliance by

psychologists on mechanistic and reductionist modes of thought and practice is seen to incur certain dangers. Johnson believes the time is now ripe for attempts at integration in the behavioural sciences and that a focus on the external world of public policy issues is one way in which this integration might be encouraged. He is arguing, in effect, for a renewed general psychology that will encourage a sense of dialogue and unity among the sub-specialities in psychology which have grown out of touch with one another. In his estimation, the current absence of such a unity means that psychologists have no real appreciation of how they might work together on issues of common concern both within and beyond the immediate confines of the discipline. Johnson warns quite bluntly that if such a condition is allowed to persist and no general psychology emerges, then there will be

... areas of psychology that run the risk of atrophy, and psychology itself runs the risk of being deemed insignificant by those who seek explanations of human behavior. There are those policy makers who believe economists and neurobiologists have more to say about behavior than do psychologists.

– Johnson (1992, p. 27).

Wertheimer (1993) reflects similar concerns in his observation that general experimental psychology, as the original core of psychology in this century, has disappeared, leaving a vacuum which has been filled with a variety of loosely connected sub-specialities including sensory science, cognitive science, behavioral biology, neuroscience, and developmental psychology. For Wertheimer, the challenge for psychology amounts to specifying the nature of the diversity that would characterize a renewed and unifying general psychology.

Psychology, in short, seems to have an ongoing crisis of unity and identity. Apart from the longer term implications of this crisis for the survival of the discipline, the present situation seems to seriously limit what could potentially be a very powerful contribution to public policy issues, not the least of which is the need to expedite the development of physical and socio-cultural habitats that are ecologically sustainable in the longer term. Wapner (1988) once remarked that the “person-in-the-environment” might qualify as a basic unit of analysis which could unite psychologists from many sub-specialities under a common banner. It might also, as the foregoing argument implies, provide the means by which psychologists could come more closely together as a community and a discipline to allow a more effective contribution to the amelioration or solution of the environmental crises that afflict society at large.

Participation in environmental studies programmes in university settings is one way to encourage this process. Apart from the many important insights psychology has to offer into a wide range of environmental issues at both the theoretical and practical levels, psychology, itself, is likely to be a major beneficiary as psychologists are forced to examine and articulate what binds them together as a community and as a profession with much to offer society at large as that society seeks effective ways to restore or preserve ecologically and socially viable environments.

SUMMARY

This paper began with the assertion that the environmental crisis now facing humanity is the most serious in its history and attributable, in large part, to inappropriate human attitudes and behaviour.

A case was then developed for mobilizing the resources typically found

within university communities in the form of interdisciplinary environmental studies programmes which acknowledge the multi-dimensional nature of the environmental crisis in both theoretical and practical terms.

The challenges faced by developers of environmental studies programmes were examined and the need for, and means to, internal coherence in such programmes were explored.

The credentials supporting psychology's claim for inclusion in an environmental studies curriculum were presented in terms of its origins as a discipline, its empirical legacy, its contemporary diversity, and its relevance to a wide range of environmental issues.

The potential contribution of psychology to the amelioration of environmental crises was contrasted with what has actually been accomplished and reasons for this discrepancy were examined. The need for psychology to articulate and coordinate its environmental expertise both within and beyond the discipline was addressed.

It was suggested, in conclusion, that the contextualization of psychology within the wider arena of environmentally related public policy issues could foster a sense of common cause among psychologists by encouraging the restructuring of psychological knowledge in ways accessible not only to the psychological community, itself, but also to policy planners who require psychological knowledge for the effective design and implementation of public policy programmes.

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