



SECTION ON ENVIRONMENTAL PSYCHOLOGY

Canadian Psychological Association

Section members conduct research and advance theory to understand and to improve interactions between human behavior and the physical environment, both built and natural. Our members' varied interests include: management of scarce natural resources; effects of extreme environments on personality and behaviour; territoriality and personal space; behavioural and mood effects of lighting and noise; perception and evaluation of building function and aesthetics; and, architectural design. Members receive the section newsletter, published three times annually.

Winter 2004

Message from the Editor

Kate Charles, PhD., *National Research Council of Canada*, kate.charles@nrc-cnrc.gc.ca

It's winter once again, which has the majority of us dealing with the cold and the snow. Recently this has got me to thinking about environmental perceptions and expectations. When I first arrived in Canada, I faced temperatures I'd never experienced before (in the damp UK), and they took some adjusting to. However, a recent visit from my brother highlighted how my perceptions have changed over time – during a balmy spell of minus 10 temperatures in Ottawa, my brother was repeatedly surprised that this “wasn't cold”! Interestingly, when conditions in Ottawa dropped to almost minus 40, earlier this month, I actually felt reasonably comfortable because my expectations had been heightened by the media weather reports.

Whether or not you are a fan of the winter, I hope you'll enjoy this issue of the newsletter!

Contributions to future editions are most welcome, and can be sent to me at the email address above, or to:

Kate Charles, National Research Council of Canada, Institute for Research in Construction, Building M-24, 1200 Montreal Road, Ottawa, ON, K1A 0R6.
tel: 613-991-0939 / fax: 613-954-3733

New Members

A warm welcome to our newest members!

- | | |
|-----------------------|--------------------|
| - Simon Beaudry | - Guylaine Chellew |
| - Norman Scott Cooper | - Michael Dudley |
| - Claudette Dupuis | - Patricia Forrest |
| - Frederick Grouzet | - Doris Hanigan |
| - Janelle Jordan | - Monique Lefebvre |
| - Brenda Mann | - Lisa Mask |
| - Jane Mocellin | - Katalin Nathan |
| - Elizabeth Nisbet | - Danielle Patry |
| - Lynn Perreault | - Robert Robinson |
| - Maxime Tremblay | - Tyler Twarowski |

SEP Election

As quorum was not reached at the 2003 SEP annual business meeting, Jennifer Veitch distributed a mail-in ballot. 14 of the 52 ballots were returned, and the results are as follows:

Chair-Elect (to serve as Chair in 2004-2005): Luc Pelletier, Ph.D. (elected unanimously)

Secretary-Treasurer (term 2003-2004): Mark Sandilands, Ph.D. (elected unanimously)

Many congratulations to Luc and Mark!

Environmental Psychology Symposium At 2004 CPA Convention

Luc Pelletier has organised an environmental psychology symposium for this year's CPA convention, to be held in St. John's, Newfoundland. Details of the papers to be presented in this symposium are described below.

N.B. See the 'Future Conferences' section of this newsletter for more details on the 2004 CPA Convention.

The Interface of Environmental Psychology and Other Fields of Psychology

Chair: *Luc G. Pelletier, University of Ottawa*

Participants: *John W. Berry, Queen's University*

Tim Rogers, University of Calgary

Frederick M. Grouzet, University of Ottawa

Donna M. Reist, Ontario Institute for Studies in Education of the University of Toronto

Jennifer Veitch, National Research Council of Canada, Institute for Research in Construction

Environmental psychology can be described on a continuum that ranges from the study of the impact of spatial-physical environment on human behaviour to the influence of human behaviour on the natural environment, and sustainable development. At one end of this continuum, human behaviour is conceived as a consequence of a built physical environment. At the other end of the continuum, human behaviour is conceived as a cause of the physical environment. Several sections within the CPA could offer interesting possibilities for close connections with the Environmental section. When we think about issues like population growth, the depletion of natural resources, over consumption, the lack of conservation, and the achievement of an ecologically sustainable future, it becomes obvious that psychology should play a very active role in examining the human behaviours that have caused those problems or in the substantial changes to human lifestyles will be required in a near future. The purpose of this symposium is to examine how research and work in other fields of psychology (cross-cultural psychology, social psychology, theoretical psychology, counselling psychology) interface and are compatible with the goals pursued by Environmental Psychology.

An ecocultural perspective on human behaviour

J.W. Berry, Psychology Department, Queen's University, Kingston

Cross-cultural psychology is a branch of the discipline that attempts to understand similarities and differences in human behaviour, taking into account the contexts in which it develops and is currently displayed. The eco-cultural perspective adopts three fundamental positions. First, it considers that basic psychological processes are species-shared (universal) features of the human organism. Second, it views behavioural development as relatively stable individual adaptations to variable cultural contexts. And third, it adopts a definition of 'culture' as long-term collective adaptations of populations to their habitats. The ecocultural approach examines ecology-culture-behaviour relationships as functional systems that can provide a value-free framework within which variations in behaviour (such as abilities, personality, values) can be studied and interpreted, avoiding the ethnocentrism that has been dominant in psychology.

On the importance of "theories of relationality" in psychology's efforts to understand nature and the environment: Toward a taxonomy

Tim Rogers, Department of Psychology, University of Calgary.

Relationality lies at the core of psychology's efforts to engage environmental issues. Environmental psychology, ecopsychology, ecological psychology and emerging social constructionist positions all foreground the relationship, albeit with each adopting somewhat different theories of relationality. For example, environmental psychology textbooks foreground causal forms, while social constructionists emphasize relationships which themselves constitute important aspects of the entities in dialogue. Disagreements between these fields (e.g., the "nature wars") can often be traced to differences in the implicit theories of relationship each adopts. The present paper will catalogue varying approaches to relationality observed in these literatures, noting considerable diversity and variability of framing assumptions. A preliminary taxonomy of the various theories of relationality undergirding these literatures will be suggested drawing on the psychology subdisciplines and some recent work in environmental philosophy. It will be argued that clarification of the theory of relationality adopted by various subfields is an important project, not only in terms of opening new lines of inquiry, but also in terms of enhancing communication and cross-engagement between the various subdomains of our discipline committed to understanding our perplexing links to the world in which we live.

Self-regulation of environmental dilemmas: the role of social values.

Frederick M. E. Grouzet & Luc G. Pelletier, School of Psychology, U. of Ottawa.

In agreement with Self-determination theory (Deci & Ryan, 2000), Pelletier and his colleagues (see Pelletier, 2002) have shown that self-determined motivations toward the environment were more positively related with pro-environmental behaviors than non-self-determined motivations. Moreover, the importance of these relationships increases with the difficulty of the environmental behaviors (Green-Demers et al., 1997). But why are some behaviors perceived as more difficult than others? We are proposing that pro-environmental behaviors are essentially the results of environmental dilemmas between selfish (or economic) interests and common (environmental) interests. For example, difficult behaviors, such as purchasing ecological products or restraining ones' consumption tendencies, should create more conflicts between self-interest and environmental alternatives than less difficult behaviors, such as recycling in a well-organized collection system. We present results where individuals' motivation toward the environment and social values were analyzed in relation with their responses facing hypothetical environmental dilemmas that created more or less conflicts. The discussion focuses on the importance of developing a self-determined motivation in order to deal effectively with environmental dilemmas.

The ecological self and the psychology of sustainable living

Donna M. Reist, Ontario Institute for Studies in Education of the University of Toronto.

The purpose of this web-based study ($n=357$) was to empirically validate the ecological self construct (Naess, 1988), situated within the North American cultural context, which is largely defined by materialism. The goal was to establish an empirically based conceptual framework for a psychology of sustainable living. A combination of Q and R methodologies were used to examine distinct phenomenologies of self and their association with the Inclusion of Nature in the Self Scale (Schultz, 2002), the Schwartz Value Survey (Schwartz, 1992, 1994, 1996), the Satisfaction with Life Scale (Diener, et al. 1985), a proenvironmental behaviours scale, and the Material Values Scale (Richins & Dawson, 1992). Results revealed three distinct construals of self: the ecological self and two representations of self that resemble Markus and Kitayama's (1991) interdependent and independent self-schemas. Unlike its counterparts, the ecological self was significantly

more inclusive of the natural world and was anchored on a continuum of human values emphasizing universalism and benevolence on the one hand, while rejecting power and hedonism on the other. Increased satisfaction with life and positive indicators of psychological well-being further define the ecological self as an adaptive expression of human potential which, unlike its counterparts, lacks the defining characteristics of materialists and was most likely to engage in proenvironmental behaviour.

The intersection of disciplines: NRC's cost-effective open-plan environments (COPE) project

Jennifer A. Veitch, Kate E. Charles, Guy R. Newsham, John S. Bradley, Chia-yu Shaw, Dan M. Sander, National Research Council of Canada, Institute for Research in Construction, Ottawa ON

The current trends in office design - putting everyone in smaller, open-plan spaces, with low partitions - might lead to adverse physical conditions and dissatisfaction for employees. NRC's Cost-effective Open-Plan Environments project combined the expertise of psychologists, acousticians, engineers, and architects in conducting experimental and field research, literature reviews and computer simulations over four years to address three goals:

- To develop predictive relationships between office design characteristics and physical conditions
- To develop predictive relationships between physical conditions and both environmental and job satisfaction
- To combine these results into a software tool for designers to evaluate the effects of various office design choices

Environmental and industrial/organizational psychology intersect in the study of work and workplaces. Thus, the project crossed boundaries between psychological disciplines, as well as reaching outside psychology. This unique cross-disciplinary effort enabled the team to bring strong measurement and analysis techniques to bear on understanding both the physical conditions in open-plan offices and the effects of those conditions on occupants.

REALgold: Residential Environments for Active Living in Older Adults

REALgold is an international, multidisciplinary research initiative focused on residential environments for active living in older adults. Several activities have been proposed, which might be of interest to SEP / BEING members:

- The chance to participate in a Residential Environments for Active Living in Older Adults electronic mailing list, for sharing news of opportunities and developments in this area
- A small "conference within a conference" on the latest theoretical, empirical, and methodological advances in Residential Environments for Active Living in Older Adults (n.b. see the 'Future Conferences' section of this newsletter for more details)
- The chance to explore research collaborations with individuals who bring diverse skills and expertise to topics of shared interest

Questions and correspondence regarding REALgold should be directed to the REALgold office, c/o Johanna Weber, weberj@uiuc.edu

Query from St. John's Ambulance

(submitted by Tim Rogers)

I am a volunteer St. John Ambulance instructor in Stony Plain, and have instructed our "First Aid in the Wilderness" basic course since it was created by a number of us who have been involved in outdoor emergency management.

I am currently beginning the process of developing an intermediate level program. In it, I want students to have opportunities to: 1) further practice skills acquired in the basic course; 2) expand the skills related to wilderness first aid; 3) develop awareness of the psychological impacts related to the injuries and/or physical survival threats that they may need to deal with/ counteract. For example, my experience makes me aware that a casualty who is fearful that they may be abandoned by their group resists the benefits that they should gain from the care-giver; until the care-givers counteract this fear, they are limited in their effectiveness. I'm looking for suggestions as to content that I might consider for inclusion in our course, or people that I might benefit from talking with.

We also utilize scenario training a great deal. I often find myself either reducing or considering reducing, the potential impact of any given scenario, out of the concern that students might experience a reaction greater than what we have anticipated and potentially

beyond what we might be able to manage. As an example, I am well aware that female students often become apprehensive in a scenario where they must be immobilized because of lower limb injuries AND have their eyesight restricted because of proper care of a head injury, as laid out in the staged scenario. In some cases, I intervene in the scenario and in other cases, I encourage them to work through the concerns. My challenge, then, as I work on this new course is to ensure safe and appropriate guidelines are included for the staging of scenarios. My questions are: How far is it safe to go? What should we have in place to handle reactions that are beyond what we have anticipated in planning the scenario? What should the guidelines be?

Obviously, I am floating a number of ideas with the hope that someone will respond to them, and perhaps even bring new perspectives for me to consider. I believe that I am the first of our group to consider adding a psychological component to our training, and the agenda items have therefore obviously not been defined! Any help that you might offer would be appreciated.

Please send any relevant input to: Fred Tyrrell, Senior Instructor, Tyrrell Training, (780) 968-0945, FTyrrell@telus.net

IAAP Membership

The following letter appeared on the email discussion list of UK environmental psychologists:

Dear Colleagues

The International Association of Applied Psychology (IAAP) is the oldest and largest association with individual membership in the area of applied psychology. The association and we personally as President of IAAP, and of Division 13 - the Transport and Traffic Division - would like to make a concerted effort to win you as a member of IAAP. We think that you would be uniquely suited to be a member of this important society, particularly because of your background as being a prestigious member of our scientific community. Therefore we would very much like to encourage you to also become a member of IAAP. Its membership is not expensive: it is just US\$60 per year and you receive "APPLIED PSYCHOLOGY: An International Review" free of charge.

Why should you become a member of IAAP?

1. You become a member of the oldest and largest international association for applied psychology with individual membership and participate to

make applied psychology stronger in today's world.

2. You receive the world class journal *APPLIED PSYCHOLOGY: An International Review* which has been named a Star by some observers of the journals because it has one of the most rapid growth in citation rates.
3. You receive other journals at a substantial rate decrease, i.e. all Blackwell Publishing psychology journals and many other relevant journals, for example: *The European Work and Organizational Psychologist, Journal for the Theory of Social Behaviour, Journal of Personality, Political Psychology, International Journal of Human Resource Management, Human Relations, Personnel Psychology.*
4. You become a member of an exciting group of international scholars, scientists, and practitioners who are interested in advancing applied psychology, and who want to cooperate with scientists from around the world.
5. You support IAAP's efforts internationally to help make applied psychology accepted in various countries.
6. You support IAAP's efforts with international organizations to help them to use psychological knowledge more efficiently.
7. You support cross-fertilization across the sub-disciplines of applied psychology.
8. You receive a newsletter free of charge that keeps you knowledgeable of new events in other parts of the world.
9. You pay reduced fees for the international congresses that are organized by IAAP, e.g. the International Congress of Psychology in Beijing in 2004, the International Conference for Transport and Traffic Psychology ICTTP in Nottingham 2004, and the International Conference for Applied Psychology ICAP in Athens in 2006.
10. You pay reduced membership dues for student members and members from low income countries.

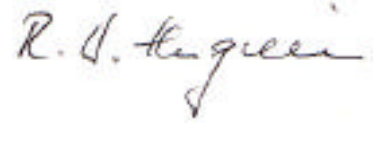
The most important issue is, however, that you are really needed in a worldwide network of likeminded researchers and practitioners. We would very much appreciate if you could become a member yourself and if you would encourage your younger researchers and graduate students to become members as well (graduate students only pay \$20). Please get in touch with us, either personally or via internet, www.iaapsy.org

Thank you very much.

Yours sincerely,



Prof. Dr. Michael Frese
President of the IAAP



Dr. Raphael Denis Hugenin
President of Division 13 of
IAAP

An Ecocultural Approach to the Study of Family Across Cultures

*John W. Berry, Psychology Department, Queen's
University, Kingston*

Cross-cultural psychology attempts to understand similarities and differences in human behaviour in its cultural contexts (Berry, Poortinga, Segall, & Dasen, 2002). In our current cross-cultural research on family structure and functioning across cultures (Georgas, Berry, Poortinga, Kagitcibasi & van de Vijver, 2003), we have employed an ecocultural framework to guide the research, and to examine how human behaviour is adaptive to the cultural and biological contexts in which it was nurtured, and how all three domains (behaviour, culture, and biology) are adaptive to the broad ecological and sociopolitical contexts in which they are situated. In particular, we examine the issue of how these features of group life influence, and become incorporated during development into individual behaviour. The concept of "cultural transmission" is at the core of this examination; and the role of the family in its operation is central to understanding the emergence of human behavioural diversity. This approach sets the general stage for the examination of the family as an institution that is adapted to its ecological and cultural situation, and in turn provides the main context for the ontogenetic development from infancy to adulthood, and often beyond.

Over the years, an attempt has been made to incorporate many of the foregoing ideas and issues into a working framework for cross-cultural psychological research (Berry, 1966, 1976; Berry et al, 1986; Mishra, Sinha & Berry, 1996). This ecocultural framework is a kind of map that lays out the categories of variables that need to be examined in studies seeking to understand human behavioural diversity in context. The ecocultural perspective is rooted in two basic assumptions. The first, (the "universalist" assumption) is that all human societies exhibit commonalities ("cultural universals") and that basic psychological processes are shared, species-common characteristics of all human beings on which

culture plays variations during the course of development and daily activity. The second (the "adaptation" assumption) is that behaviour is differentially developed and expressed in response to ecological and cultural contexts. This view allows for comparisons across cultures (on the basis of the common underlying process), but makes comparison worthwhile (using the surface variation as basic evidence). Not only in life sciences, like ethology, but also in the social sciences, like cultural anthropology, or sociology, there is substantial evidence that groups everywhere possess shared sociocultural attributes. This combination of underlying similarity with surface expressive variation has been given the name "universal" by Berry et al (2002) to distinguish it from "absolutism" that tends to deny cultural influence on behavioural development and expression, and from "relativism" that tends to deny the existence of common underlying psychological processes. Of course, while variations in behavioural expression can be directly observed, underlying commonalities are a theoretical construction and cannot be observed directly (Troade, 2001). Paradoxically, this search for our common humanity can only be pursued by observing our diversity. And this dual task is the essence of cross-cultural psychology (Berry, 1969, 2000; Bril, 1995).

The current version of the ecocultural framework proposes to account for human psychological diversity (both individual and group similarities and differences) by taking into account two fundamental sources of influence (Ecological and Sociopolitical), and two features of human populations that are adapted to them: cultural and biological characteristics. These population variables are transmitted to individuals by various "transmission variables" such as enculturation, socialization, genetics, and acculturation. Our understanding of both cultural and genetic transmission have been greatly advanced by recent work on culture learning and on the human genome project. The essence of both these domains is the fundamental similarity of all human beings (at a deep level), combined with variation in the expression of these shared attributes (at the surface level). Work on the process and outcomes of acculturation has also been advancing (e.g., Marin, Balls-Organista & Chung, 2001), necessitated by the dramatic increase in intercultural contact and change.

To summarise, the ecocultural framework considers human diversity (both cultural and psychological) to be a set of collective and individual adaptations to context. Within this general perspective, it views cultures as evolving adaptations to ecological and sociopolitical influences, and views individual psychological characteristics in a population as

adaptive to their cultural context. It also views (group) culture and (individual) behaviour as distinct phenomena at their own levels that need to be examined independently.

The ecocultural approach offers a "value neutral" framework for describing and interpreting similarities and differences in human behaviour across cultures. As adaptive to context, psychological phenomena can be understood "in their own terms" (as Malinowski insisted), and external evaluations can usually be avoided. This is a critical point, since it allows for the conceptualization, assessment and interpretation of culture and behaviour in non-ethnocentric ways. It explicitly rejects the idea that some cultures or behaviours are more advanced or more developed than others. Any argument about cultural or behavioural differences being ordered hierarchically requires the adoption of some absolute (usually external) standard. But who is so bold, or so wise, to assert and verify such a standard?

Finally, the Sociopolitical context brings about contact among cultures, so that individuals have to adapt to more than one context. When many cultural contexts are involved (as in situations of culture contact and acculturation), psychological phenomena can be viewed as attempts to deal simultaneously with two (sometimes inconsistent, sometimes conflicting) cultural contexts. These attempts at understanding people in their multiple contexts is an important alternative to the more usual pathologizing of colonized or immigrant cultures and peoples. Of course, these intercultural settings need to be approached with the same non-ethnocentric perspective as cross-cultural ones.

Recent work (Georgas & Berry, 1995; Georgas, van de Vijver & Berry, 2004) has further extended this interest in ecological antecedents of behaviour. A first study sought to discover ecological and social indicators that might allow societies to be clustered according to their similarities and differences on six dimensions: ecology, education, economy, mass communications, population, and religion. The second study further examined ecosocial indicators across cultures, and then sought evidence of their relationships with a number of psychological variables (such as values and subjective well-being). Results showed that many of the indicators came together to form a single economic dimension (termed "Affluence"), and this was distinct from "Religion" in the pattern of relationships with the psychological variables. Specifically, across cultures, a high placement on Affluence (along with Protestant Religion) was associated with more emphasis on individualism, utilitarianism, and personal well-being. In contrast, for other religions, together with low

Affluence, there was an emphasis on power, loyalty, and hierarchy values.

As a cultural institution, the family may be seen as adaptive to ecocultural context and as a vehicle for cultural transmission (Berry, 1976; Georgas, 1988). The family thus occupies a central place in the ecocultural approach, serving to link background contexts to individual behavioural development. There exists a broad ecological dimension running from hunting and gathering to agricultural interactions with the environment. Associated with the latter extreme are sedentary lifestyle, high population density, high sociocultural stratification, polygamy, extended families, and socialization emphases on compliance; associated with the former extreme are a nomadic lifestyle, low population density, low stratification, monogamy, nuclear families, and practices emphasizing assertion. Societies that range along this ecological dimension also vary concomitantly on these other ecological and cultural variables.

When this ecological dimension is extended to include contemporary industrial and post-industrial societies, a curvilinear pattern becomes apparent (Berry, 2002). With the increasing high density of cities, we observe a reduction in pressures toward compliance as a result of loss of community cohesion, and the anonymity afforded by these large cities. There is also a reduction in the frequency of extended families, and a parallel increase in proportion of nuclear families, which is accompanied by a further reduction in pressures toward compliance.

The sociopolitical context has played an important role in shaping both cultural and transmission features of the framework. Particularly, the colonization of Asia by Indian and Chinese societies, and of Africa and the Americas by European societies has brought about societal changes that have altered cultural patterns, including family arrangements and emphases in cultural transmission. Colonization introduced new religions and forms of education (particularly formal schooling) in most of these societies. And telemedia continue to promote change from outside by portraying alternative lifestyles and consumer goods. Their impact has led to an apparent increase in nuclear families, and monogamous marriage in previously polygamous societies with extended families. Associated changes, such as delayed marriage, fewer children, and increased divorce rates, have also been assigned to acculturative influences, mainly emanating from contemporary Western domination of the "Majority World". Changes in transmission have also been discerned, including increased pressures toward "assertion" and a decline in "compliance" during socialization. The present research project on

family structure and function is, in part, designed to verify these apparent changes.

Selected References

- Berry, J. W. (1976). *Human ecology and cognitive style: Comparative studies in cultural and psychological adaptation*. New York: Sage/Halsted/Wiley.
- Berry, J. W. (1994). Ecology of individualism and collectivism. In U. Kim, H. C. Triandis, C. Kagitcibasi, S.-C. Choi, & G. Yoon (Eds.), *Individualism and collectivism* (pp. 77-84). Newbury Park, CA: Sage.
- Berry, J. W. (2001). Contextual studies of cognitive adaptation. In J. M. Collis & S. Messick (Eds.), *Intelligence and personality: Bridging the gap in theory and measurement* (pp. 319-333). Mahwah, NJ: Lawrence Erlbaum.
- Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (2002). *Cross-cultural psychology: Research and applications* (2nd ed.). New York: Cambridge University Press.
- Berry, J. W., Van de Koppel, J. M. H., Sénéchal, C., Annis, R. C., Bahuchet, S., Cavalli-Sforza, L. L., & Witkin, H. A. (1986). *On the edge of the forest: Cultural adaptation and cognitive development in Central Africa*. Lisse: Swets and Zeitlinger.
- Georgas, J., & Berry, J. W. (1995). An ecocultural taxonomy for cross-cultural psychology. *Cross-Cultural Research*, 29, 121-157.
- Georgas, J., Berry, J.W, Poortinga, Y., Kagitcibasi, C., & van de Vijver, F. (2003). Culture, family, and psychological functioning. Paper presented at European Congress of Psychology, Vienna. [to appear as book of same title, Cambridge University Press, 2004].
- Georgas, J., van de Vijver, F., & Berry, J.W. (2004). The ecocultural framework, ecosocial indices and psychological variables in cross-cultural research. *Journal of Cross-Cultural Psychology*, 35, 74-96.
- Troade, B. (2001). Le modèle écocultural: Un cadre pour la psychologie comparative. *International Journal of Psychology*, 36, 53-64.

The COPE project: Building a Better Workstation

The following article is reprinted from *Construction Innovation*, Vol. 8, No. 4, December 2003. *Construction Innovation* is the quarterly newsletter of the National Research Council of Canada's Institute for Research in Construction (NRC/IRC). NRC/IRC performs research on the building envelope, fire risk management, urban infrastructure and the indoor environment. IRC also provides a construction product evaluation service and assists in the development of the national building codes. More information on the COPE project can be found at <http://irc.nrc-cnrc.gc.ca/ie/cope/>. Specific questions can be directed to Dr. Guy Newsham at (613) 993-9607, fax (613) 954-3733, or e-mail guy.newsham@nrc-cnrc.gc.ca.

SEP members Jennifer Veitch and Kate Charles also worked on this project.

The single most common workplace in North America is the open-plan office. People who work in this type of office spend more waking hours in this environment than in any other, and there is abundant evidence that they do not generally enjoy the experience. The success of Dilbert™ is one manifestation of this malaise.

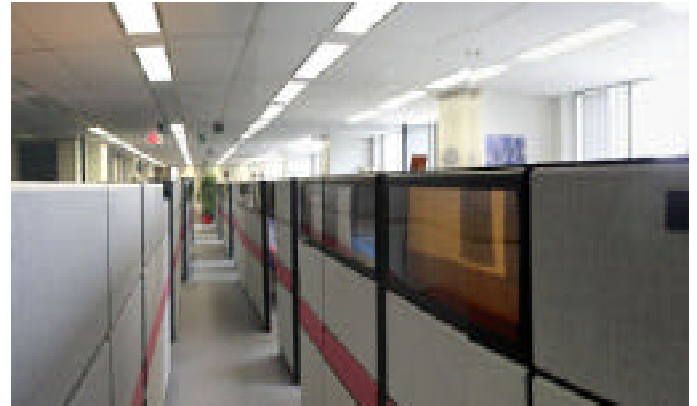
With this in mind, IRC and its consortium partners (see sidebar) initiated the Cost-effective Open-Plan Environments (COPE) project, which examined the effect of office design choices on the workplace environment, and the effect of that environment on occupant satisfaction. Researchers used laboratory studies in mock-up offices, a field study, computer simulation and literature reviews to investigate the effects.

The four-year project produced a body of knowledge that can help designers make more appropriate choices for open-plan office layouts. The results can be summarized by three broad conclusions:

1. **Indoor environments matter.** There is a significant link between environmental satisfaction and job satisfaction. The review of the literature points to a significant relationship between job satisfaction and measures related to organizational productivity.
2. **Good design can improve open-plan office environments.** In the acoustics domain, most office workers desire speech privacy. Increasing ceiling absorption, adding masking noise, increasing workstation size and increasing partition height all improve speech privacy. With respect to lighting and daylighting conditions: both are improved with lower partition heights and lighter coloured surfaces. Systems that offer individuals dimming control of their lighting also

improve satisfaction. Similarly, mechanical systems that provide individual control over temperature and airflow are beneficial to occupants. In whatever way ventilation is delivered, the literature shows that outside airflow rates of lower than 10 l/s/person are associated with reduced occupant satisfaction.

IS THIS THE PERFECT PARTITION DESIGN?



WITH THE WINDOWS TO THE RIGHT, THE USE OF TRANSPARENT PANELS MAKES THE PARTITION LOW ENOUGH FOR DAYLIGHTING PURPOSES AND HIGH ENOUGH FOR SPEECH PRIVACY. HOWEVER, AFTER INSTALLATION THESE TRANSPARENT PANELS ARE OFTEN COVERED WITH POSTERS OR COATS BY OCCUPANTS SEEKING VISUAL PRIVACY. NOTE: TO REALLY IMPROVE DAYLIGHT PENETRATION INTO THE SECOND ROW OF CUBICLES FROM THE WINDOW, THE UPPER PANELS OF THE PARTITIONS TO THE LEFT SHOULD ALSO BE TRANSPARENT.

3. **To be successful, design must be holistic.** The above discussion regarding partition height shows that there are conflicts in some design choices: high partitions are good for speech privacy but bad for daylight access and lighting distribution. Which of these factors is actually most important will vary according to the situation. There is no perfect solution (see photo), but full consideration of the most important factors in each workplace can improve the chances of a good compromise. A successful office design should consider all aspects of the environment so that solving one problem doesn't create another.

Software tool

As part of the project, researchers developed an online software tool that can assist in evaluating the effects of various choices to help find designs that are truly cost-effective—i.e., designs that are likely to create a satisfactory environment at a reasonable cost.

Users can make various choices concerning the design of workstations and the surrounding office space. They can also input the costs of these choices, indicating first- and life-cycle costs. The software calculates physical effects and can compare them to specified criteria; it also indicates which features of

the design might be positive or negative with respect to occupant satisfaction. These calculations are supplemented by abundant text advice.

COPE partners: [Public Works and Government Services Canada](#), Building Technology Transfer Forum, [USG Corporation](#), [Ontario Realty Corporation](#), [British Columbia Building Corporation](#), [Steelcase Inc.](#), [Natural Resources Canada](#)

© 2003, Her Majesty in right of Canada. National Research Council of Canada, Ottawa, Ontario.

Building Science Insight

Seminar Series - 2004

BSI 2004, which will draw on the findings of the COPE project, will address how open-plan office design factors—acoustics, privacy, lighting, ventilation and temperature—affect the workplace environment and occupant satisfaction with this environment. As well, the seminar series will include information on the linkages between workplace satisfaction, job satisfaction and organizational productivity. It will also discuss ergonomics issues relevant to open-plan offices.

If you would like more information about this seminar, please contact Monique Myre at (613) 993-0435, fax (613) 952-7673, or e-mail

monique.myre@nrc-cnrc.gc.ca.

Recent Publications

The latest issue of the Journal of Environmental Psychology – Vol. 23, No. 4, Dec 2003 – contains articles on willingness to reduce car use; internalised motivation for environmentally responsible behaviour; chemical sensitivity scale; environmental appraisal inventory; face of the city; neighborhood mapping; children's pointing accuracy; cognitive maps of the world; shoppers' psychological needs; household and neighborhood crowding.

The previous issue of the Journal of Environmental Psychology – Vol. 23, No. 3, Sept 2003 – contains articles on environmentally friendly consumer behaviour; influences on pro-environmental behaviour; environmental beliefs and water conservation; place attachment; sense of place in rural towns; evaluative judgments of environments; cross-cultural perceptions of crowding; fear in public places; redefining social and environmental relations.

The latest issue of Environment and Behavior – Vol. 36, No. 1, Jan 2004 – contains articles on visibility and quiet in national parks; methods for eliciting environmental perceptions; neighborhood evaluations; household energy use; ecological consumerism; volunteering in nongovernmental organisations; children's environmental visions.

The previous issue of Environment and Behavior – Vol. 35, No. 6, Nov 2003 – contains articles on noise and school children's cognitive processes; restorative effects of roadside vegetation; reducing littering behaviour; environmental worldview and behaviour; recycling behaviour in China; global warming and US crime rates; enhancing zoo visitors' experiences; environmental appraisal of hospital waiting areas.

The Canadian Journal of Police and Security Services is a new journal that seeks to publish behavioural science research related to police, military, correctional, and other security services. For more information, see: <http://www.police-securityjournal.ca/default.htm>

The Journal of Social Issues – Vol. 59, No. 3, 2003 – focuses on the residential context of health – topics include housing and mental health, housing as health capital, health factors for renters and owner-occupiers, health consequences of shared housing, poverty housing and health in the US, time-use data, housing policy and health, and the residence in the social ecology of stress and restoration.

Future Conferences

International Conference on New Media Research Networks: 26-27 March 2004, Charlottetown, PE
This conference forms part of the Arts-Netlantic Initiative (see www.artsnetlantic.ca). Behavioural research on response to immersion theatres of children and teachers, as well as studies of artist and audience response to new media artwork will be presented. The work is being conducted at three sites: Charlottetown, Moncton, and Fredericton with Annabel J. Cohen, John Tivendell, and Janet Stoppard as Principal Investigators respectively working. The team is unified through regular videoconferences. The project is funded primarily by Heritage Canada, Canada Culture On-Line Program. The parent project is the Institute for Interdisciplinary Research in Culture, Multimedia, Technology, and Cognition, a Canada Foundation for Innovation Initiative. All are welcome to attend the conference. For more information contact acohen@upe.ca.

International Sustainable Development Research Conference: 29-30 March 2004, Manchester, UK

For further information, see:
<http://www.erpenvironment.org> or contact Elaine White at +44 (0)1274 530408,
elaine@erpenv.demon.co.uk

Canadian Psychological Association (CPA) 65th Annual Convention: 10-12 June 2004, St. John's, Newfoundland.

For further information, see:
<http://www.cpa.ca/convention.htm>

EDRA 35: Design with Spirit: 2-6 June 2004, Albuquerque, New Mexico
Featuring keynote speaker Dr. David Stuart, anthropologist and Associate Provost of the University of New Mexico, speaking on "The Fall of Chacoan Culture and the Spirit of Community".
For further information, see:
<http://www.edra.org> or contact 405-330-4863,
edra@telepath.com

REALgold meeting within a conference – Residential Environments for Active Living in Older Adults: 2-6 June 2004, Albuquerque, New Mexico
Featuring the latest theoretical, empirical and methodological advances in this area, and held within the rubric of the June 2-6, 2004 International Conference of the Environmental Design Research Association (EDRA) in Albuquerque, New Mexico (see above).

The Natural City: 23-25 June 2004, Toronto, ON
Organised by the Division of the Environment and Institute for Environmental Studies, University of Toronto, and the World Society for Ekistics. The keynote speaker will be Robert F. Kennedy Jr, renowned defender of the environment.
For further information, see:
<http://www.utoronto.ca/divenv/NaturalCity> or contact
natural.city@utoronto.ca

18th IAPS Conference – Evaluation in Progress: Strategies for environmental research and implementation: 7-10 July, 2004, Vienna, Austria.
For further information, see:
<http://info.tuwien.ac.at/iaps2004>

American Psychological Association (APA) Annual Convention: 28 July – 1 Aug, Honolulu, Hawaii
For further information, see:
<http://www.apa.org/convention>

Open Space: People Space: An International Conference on Inclusive Environments: 27-29 October, 2004, Edinburgh, Scotland.
Hosted by OPENspace: research centre for inclusive access to outdoor environments. The programme will include contributions from an international array of experts covering the major themes of the conference: children and young people; disability and social inclusion; health and restorative environments; tourism and leisure. Key speakers already confirmed include Mark Treib, architect and modernist landscape historian, Jan Gehl, urban designer and public open space expert, Judy Ling Wong, Black Environment Network, Ken Worpole, urban policy expert, and Nilda Cosco, educational psychologist.
For further information, see:
<http://www.openspace.eca.ac.uk> or contact
openspace@eca.ac.uk, +44-131-221-6177.

Submissions

Submissions – including notices of upcoming events, calls for papers, commentaries, short articles, book reviews, recent publications, teaching, research and practitioner news – are all welcome. Send submissions to Kate Charles (see contact details on p.1).

Membership

Membership of the section is only \$5/yr and includes three newsletters and access to the new section email discussion list. To join, CPA members can contact Sylvia Spallin: cpamemb@cpa.ca. Non-CPA members can become associate members through the Behaviour-Environment Interest News Group (BEING) – contact Mark Sandilands: marksan@telusplanet.net.