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# The Politics of Behavioural Change for Environmental Health Promotion in Developing Countries

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## Abstract

Behavioural change remains a popular intervention strategy for environmental health promotion in developing countries. This article explores the question of why behavioural change interventions continue to be widely used as an intervention strategy in developing countries and highlights the political implications of this approach. It suggests that framing interventions within a mainstream environmental health science paradigm serves to perpetuate a behavioural intervention approach while foreclosing other options. It also serves to perpetuate sexist representations of poor African women; absolves decision makers from addressing broader socio-political concerns (such as poverty and inequality) that are key to addressing environmental health concerns in developing countries; and sets up an expert model for environmental health and behavioural health scientists to thrive.

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## Keywords

- *behavioural change*
- *environmental health*
- *interventions*
- *politics*

## Introduction

BEHAVIOURAL change, infused by elements of health psychology and health education, remains a widely used prevention strategy for environmental health promotion in developing countries. Behavioural interventions are not homogenous of course and differ in their scale, message, health outcome and communication strategy. However, in their simplest form, the philosophy behind such strategies is that through the communication of environmental risk, individuals will review their current behaviours and change them according to the advice given. Behavioural change, in turn, will reduce their exposures to environmental hazards and, consequently, improve not only their own, but their families' health. Examples of behavioural interventions include hand washing, domestic and food hygiene campaigns to prevent diarrhoeal disease; nutrition education to prevent malnourishment; insecticide-treated bed nets for malaria control; and improved ventilation practices to reduce wood-smoke exposure.

Given that the high disease burden(s) associated with infectious diseases in developing countries are largely attributable to large-scale poverty and lack of access to basic services such as water (affecting 1.3 billion worldwide), sanitation (2.4 billion) and modern energy (3 billion) (Gordon, Mackay, & Rehfuess, 2004); it seems counterintuitive that behavioural change that places the emphasis on individual action is viewed as a viable intervention option. Despite strong evidence of the limited effectiveness of behavioural interventions in environmental health in developing countries (Cave & Curtis, 1999; Loevinsohn, 1990), and a radical critique of individualized behavioural change in developed countries for over three decades (see Crawford, 1977; Rodmell & Watt, 1986), behavioural interventions remain popular in developing countries.

A recent example of the pervasiveness of behavioural change can be found in the typhoid outbreak identified on 22 August 2005 in the resource-poor town of Delmas, South Africa. At the time of writing, 594 cases of typhoid were confirmed with five mortalities. Over 3000 people were treated for diarrhoeal disease (South African Department of Health, 2005a). The town's water supplies had become contaminated by human faeces. In the absence of adequate sanitation, residents defecate and urinate in buckets, which are typically disposed of into open fields or the surrounding environment. A team of scientists were brought in to isolate the source of the outbreak and

one community borehole was found to be contaminated with the *Salmonella typhi* bacterium (South African Department of Health, 2005b). The State responded by setting up temporary healthcare facilities to deal with the ill, provided temporary clean water points for residents to source their water supplies and launched a vigorous behavioural campaign to educate residents about typhoid and promote safe behaviours such as safe disposal of faeces and hand washing to stop individual infection and spread to others. According to a press release by the South African Department of Health:

To date, we have noted a satisfactory decrease on the daily intake of patients suffering from diarrhoea. This can be attributed to an effective awareness campaigns (*sic*) carried out by our health promotions workers and environmental officers in the community of Delmas. (South African Department of Health, 2005b)

Delmas residents mobilized in protest. Their rationale: clean water, flush sanitation and healthcare facilities—all of which were grossly inadequate in Delmas—are a basic human right and enshrined in the South African constitution (News24.com, 2005). Their representatives argued that the outbreak was a symptom of the slow service delivery to the poor in post-Apartheid South Africa and speaks to issues far broader than the typhoid problem. The protests coincided with pockets of protests elsewhere in the country against the State's slow service delivery in impoverished areas in South Africa. Residents vandalized the mobile water points and the State alluded to an overtly party political force instigating violent protests among poor South Africans and, implicitly, in contrast to their own seemingly 'apolitical' actions based on scientific neutrality.

The Delmas example highlighted two very different approaches to addressing the typhoid problem. The residents used an equity/human rights perspective to frame their calls for improvements in their living standards. The State used an environmental health science paradigm that focused on the specific disease to frame their response to the situation. Through a risk assessment process, the State together with a team of scientists identified the source of outbreak (contaminated well), the route of exposure (drinking water) and the disease outcome (typhoid). Once sufficient risk was established, the State intervened at the source (by providing temporary clean water supplies), at the level of the person (behavioural intervention) and at the secondary level (by providing temporary

healthcare facilities to treat the disease). This text-book-like approach seemed logical, scientific and well intentioned. In contrast to the overtly political sentiments and actions from the residents, the State's response was constructed as politically neutral and for the good of the health of the poor. However, after the temporary facilities are removed, the state-enduring intervention legacy remains the behavioural campaign pitched at the individual level. I will argue in this article, that the behavioural intervention approach is inherently political.<sup>1</sup>

Although authors are often quick to point out that behaviour change alone will yield modest health benefits (Favin, Yacoob, & Bendahmane, 1999) and should be complemented by social, policy and structural interventions; it remains to be seen how prevention interventions, particularly those under the guise of health promotion, have moved beyond individual behavioural change for environmental health promotion in developing countries. In the Delmas example, despite the State's temporary intervention at the structural level, the two-pronged assumption that: (1) parts of the environmental problem (and solution) are attributable to individual behaviours and; (2) that individuals need to be 'educated' about their health in order to effect behavioural change remained firmly intact.

The aim of this article is to explore the question of why behavioural change has remained popular as an intervention strategy for environmental health in developing countries and to highlight the political implications of this approach. This article is certainly not the first to critique behavioural change in developing countries (Banerji, 2004) but is one of the few, if any, to do this in the field of environmental health in developing countries where behavioural strategies have continued relatively un-critiqued. Before proceeding, however, it is important to highlight the two characteristics that have been used to justify and, in some cases, to perpetuate the existence of behavioural interventions for environmental health promotion in developing countries.

## Characteristics of behavioural interventions

### *The domestication of environmental hazards*

Behavioural interventions typically focus on one or more disease outcomes and are conceptualized, implemented and evaluated from within an

Environmental Health Science (EHS) paradigm. Through claims of neutrality and empiricism, EHS is constructed as politically neutral and encapsulates a number of research methodologies and scientific disciplines (toxicology, environmental epidemiology, biology and so forth) that attempt to describe and, importantly, determine cause-effect relationships between exposure to environmental hazards and disease. EHS is underpinned by two rational processes: risk assessment and risk control.

Risk assessment involves identifying and establishing links between the following: a *source* of one or more pollutants (for example, industry, agriculture, transport or household activities), a *pathway of exposure* (air, water, soil or food), how humans are *exposed* to a pollutant (through time-activity patterns, for example) and *disease outcomes* associated with exposure (Bailar & Bailar, 2001). Risk control attempts to address or minimize the impact of environmental hazards on health. When framed within this model, interventions are directed at one or more of the above levels (Howze, Baldwin, & Kegler, 2004).

Within the risk control process, addressing the *source* of the pollution is viewed as the ultimate strategy in addressing environmental risks. By conceptualizing what a *source* of environmental pollution is and, importantly, where a source is located, this provides the starting point for both the risk control and assessment process. However, the source of environmental pollution is conceptualized differently in developed versus developing countries. Environmental risks in developed countries, often referred to as 'modern' risks, tend to be conceptualized as ambient (outdoors) in nature and are traced to sources such as industrialization, urbanization and transport patterns. In developing countries, however, sources of environmental hazards are often, but not always, traced to within the *home* and are referred to as 'traditional' risks related to under-development and a lack of access to basic services (Ezzati, Lopez, Rogers, Vanderhoorn, & Murray, 2002; Smith, Corvalan, & Kjellstrom, 1999). Thus, the source of traditional hazards in developing countries—indoor air pollution due to indoor cooking fires, water and sanitation, waste management and vector control—occur within the home or, by the very least, within the home environment.

The home is also constructed as both the site where the pollution is located as well as where exposure (where humans come into contact with the pollution)

occurs. This is informed by the EHS concept of 'place makes poison' (Smith, 2002)—that is the closer a person is and the more time a person spends in contact with the pollution, the higher the risk. The fact that poor women spend considerable amounts of time within their homes engaged in domestic duties (e.g. cooking and cleaning) that forces them to come into contact with environmental hazards (e.g. cooking fires, contaminated water and food) means that they are at greater risk. Furthermore, young children less than five years old are constructed as bearing the brunt of the environmental burden in developing countries. This is because they tend to follow their caregivers around and are thereby exposed to the same concentrations of pollution as their mothers, but the impact is more pronounced because of their underdeveloped physiology (for example, immune, digestive and respiratory systems) and exploratory natures (for example, increased hand to mouth activity) (Moya, Bearer, & Etzel, 2004). The 'children as not little adults' discourse has pervaded EHS discourse in recent times.

The distinction between traditional and modern hazards is further conceptualized as part of a historical process that depicts the progress of industrialized societies away from traditional ways of living. Thus, as societies develop economically and household incomes grow, environmental hazards tend to be moved out of the home and into the ambient environment. According to Smith, for example, 'this historical process can be seen as a sequential housekeeping effort. First, societies push [environmental] problems out of the house into the community and then out of the community into the wider global environment' (2000, p. 96).

### *Individualism*

Behavioural interventions are also characterized by an individualist paradigm (Baggot, 2000) that suggests that *individuals* need to take some responsibility in protecting themselves from hazards. Behavioural interventions are informed by the notion that individuals cannot rely solely on slow economic and development processes in developing countries to achieve better health but should take it upon themselves to improve their health. According to Elder, for example, who writes on behavioural change and public health in developing countries, 'in the new public health order, both societies and individuals have to take responsibility for health, rather than waiting for changes to be made for them' (2000, p. 4). Similarly, Aboud notes,

without intending to lay blame, it is fair to say that everyone has room for improvement in their health behaviours ... in developing countries, we try to encourage adults to immunize children, use family planning, drink clean water, use latrines, start infants on weaning foods at 6 months, and avoid risky sex. In industrialized countries, concerted efforts abound to change eating, drinking, smoking, and exercise behaviours. (1998, p. 210)

Individualism is also underpinned by the notion that individuals have the right to know of environmental hazards that affect their health in order to protect themselves. According to a popular publication, for example, '*Facts for life* aims to make life-saving knowledge easily available to everyone. It presents the most important facts that people have *the right to know* to prevent child deaths and diseases and to protect women during pregnancy and childbirth' (UNICEF, 2002, p. iv, emphasis added). These facts are usually western, biomedical facts aimed at educating the poor on how unhealthy their environments are. In addition, a key tenet of individualism is to prevent harm to others from our actions. The recent emphasis on children's environmental health—particularly the 'children as not little adults' discourse described earlier—further facilitates a focus on individual behaviours with the motivation that one's (selfish) behaviours can impact on others. A key motivating message in the Delmas behavioural campaign, for example, was that just one individual, through poor hygiene practices, can re-contaminate water supplies and inflict typhoid on the rest of the population. It is therefore each individual's moral duty to engage in hygienic practices so as not to harm others, particularly children.

In short, behavioural change interventions are:

- constructed as scientific and politically neutral;
- framed within EHS, which views sources of environmental pollution in developing countries as largely within the home;
- informed by the notion that women are vulnerable to environmental insults because of the amounts of time they spend fulfilling household chores within the home. Children are particularly vulnerable because they follow their mothers around within the home, because of their exploratory natures and because of their physiological susceptibility;
- underpinned by an individualist paradigm that suggests that individuals need to take responsibility for their own health, individuals have the right

to know of how environmental hazards affect health and individuals have the responsibility to prevent harm to others particularly children who are more vulnerable to environmental hazards.

### **The politics of behavioural interventions in developing countries**

EHS, particularly the risk assessment process, has become a powerful paradigm to describe and quantify the environmental health burden in developing countries. Contrary to its claims of being apolitical, however, the EHS process is inherently political: 'Whoever controls the definition of risk controls the rational solution to the problem at hand. If risk is defined one way, then one option will rise to the top as the most cost-effective, or the safest or the best' (Slovic, 1999, p. 689). If environmental risk is defined and bound to within the home in developing countries as EHS suggests, then human behaviours become an appealing focal point for interventions.

Even when interventions are technical (non-behavioural) in nature, such as improved pit latrines or improved cooking stoves, the fact that they are implemented within the home makes human behaviour an appealing area to focus on. Indeed, the lack of success of large-scale technical interventions during the 1970s and 1980s is often attributed to their lack of focus on human behaviour (Favin et al., 1999). Framing interventions within an EHS paradigm makes it very difficult to move beyond the home environment in thinking about interventions and, by implication, human behaviours within the home. Consequently, I believe that the domestication of environmental risk in developing countries not only serves to facilitate a behavioural/individualist approach to intervention design, but has a number of political implications.

In choosing at what level environmental health interventions are pitched, important attributions of blame are usually made. Lupton (1993) distinguishes between those 'posing a risk' and 'those at risk'. Within the modern risk discourse, those seen as 'posing a risk' are usually large industrial polluters and those seen as 'at risk' are individuals who make up the public. The individual is subjectively positioned as having very little control over environmental exposures and the response is usually one of anger directed at government agencies and polluters. The 'enemy' is usually seen as 'out there', easily identified and control measures, through regulatory

standards and policies, are directed at the source or at the very least at the pathway of exposure.

In developing countries, however, because the source of pollution is placed in the home, those 'at risk' and 'posing a risk' become blurred. When a biomass cooking fire is lit indoors to cook with and people are exposed to unhealthy levels of particulates and gaseous pollutants, who is considered to be 'at risk' and who is considered as 'posing a risk'? When people dispose of their faeces into the field, which contaminates the water supply and people drink the water, who is considered 'at risk' and who is 'posing a risk'? Within mainstream EHS discourse with the strong focus on cause and effect, little space exists to be both 'posing a risk' as well as 'at risk'. Consequently, poor people, more specifically, black females are implicitly blamed for environmental ill-health. It positions mothers as those 'posing a risk' and their children as those 'at risk'.

While both mothers and their young children are constructed as victims of environmental health hazards, mothers are also portrayed as those 'who should know better' and protect their children who are more vulnerable to environmental hazards. Mothers are positioned as poor, ignorant women who should, as a moral imperative, be educated and empowered to make healthy decisions about their families' health. This entrenches representations of the poor nurturing mother, who is responsible for her own and, importantly, her children's health. It also fits in within broader representations of African women as oppressed but, because of their essential qualities of being 'natural carers and nurturers', they should be the logical focus of health interventions. In addition, the notion that nobody is going to improve the health and lives of the women and children, especially the State or husbands/partners, they are motivated to do this on their own. Women's burdens are inverted and used as a motivation for them to change the way they think and behave.

The behavioural approach fits in with broader development discourses of psychosocial intervention that encourages the poor to change the way they think in order to progress. Thus, if individuals change their attitudes and behaviours, they will become healthier and thereby progress. An individualistic, lifestyles approach that implicitly attributes blame (and remedy) on individuals also serves to absolve decision-makers from addressing what are arguably the true, yet far more complicated, *sources* of environmental pollutants in developing countries, that is, poverty due to large-scale inequality.

Individualism fails to take into account inequality, structural disadvantage and poverty. A plethora of recent literature continues to highlight the link between inequality, poverty and health over and above the traditional domains and comfort zones of mainstream EHS (Global Forum for Health Research, 2000; People's Health Movement, 2004). Shifting the onus to the lifestyles of the poor not only perpetuates the status quo but maintains the illusion that governments, implementation agencies and practitioners are doing something about environmental health concerns. This, however, does not operate at the level of ill-intentioned individuals who mobilize to promote behavioural approaches. It operates through the domestication of environmental health concerns through EHS that foreclose many 'upstream' or equity intervention options. Because the source of environmental risk is not framed as 'inequality' or 'poverty' but 'poor sanitation' or 'cooking fires', this makes framing interventions that attempt to address these very difficult from within an EHS paradigm.

The individual's 'right to know' principle is usually directly translated into the individual's 'right to know of biomedical knowledge' discourse. Individuals are not (and cannot be) educated how to mobilize in protest against inequality from an EHS perspective. Instead, they are educated about the typhoid bacterium, how it affects the gastro-intestinal tract and which protective behaviours individuals should engage in. They are educated about acute respiratory infections and how wood-smoke affects the lungs. As highlighted earlier, because behavioural interventions are constructed as having the ability to operate independent of (inefficient or non-existent) health systems, behavioural interventions are justified as for the good of the poor in light of the fact that nobody else is going to do it for them. More importantly, they are constructed as providing high-quality information (known to the West) that the poor need to learn in order to become healthy and progress.

Behavioural change interventions thereby set up an expert model that positions both environmental health and western behavioural sciences (including but not limited to health psychology) in positions of power in developing countries. I have already highlighted how EHS serves to confine health problems to the domestic environment and, more specifically, to human behaviours. A focus on health-related behaviour opens the space for western health psychology models, communicators, practitioners and

scientists to thrive. Published environmental health behavioural change studies, textbooks and best practice guides are infused by elements of models such as the health belief model, social learning theory, the theory of reasoned action and so forth (see Aboud, 1998; Graeff, Elder, & Mills Booth, 1993). Even when the models are not explicitly outlined, the plethora of 'knowledge, attitudes and practices' surveys in developing countries—that imply a link between how people think about their health and the relationship with their behaviours—is testament of the power of western health psychology models. Methodological reviews of published studies explicitly identify the inclusion of a western behavioural model as one of the criteria of a successful intervention. Behavioural change interventions, therefore, serve to maintain an expert model that maintains power within EHS and health psychology in developing countries.

Much has been written about ethics and social responsibility within the field of environmental health. Most of the literature, however, deals with a critique *for* the discipline (to service the needs of EHS) rather than *of* the discipline (that critiques the ideological basis of the discipline) (Nettleton & Bunton, 1995). Much of the environmental health literature supports the ideological foundations of EHS as a scientific discipline that has a social responsibility to the 'subjects' it studies. More importantly, EHS is constructed as having a social responsibility to use the findings of epidemiological studies to participate in intervention studies and policy making (Lavery, Upshur, Sharp, & Hofman, 2003; Sharp, 2003; Weed & McKeown, 2003). On the contrary, I have attempted to argue here, that when framed within an EHS paradigm, interventions in developing countries lean predictably towards the level of the individual while foreclosing others. I do believe that the high disease burden attributable to environmental hazards is real and that mainstream EHS does have political value in highlighting the environmental health burden in developing countries (through processes such as risk assessment). I am not convinced, however, that EHS paradigm is the best way to frame intervention efforts.

The behavioural approach in developing countries is in contrast to historical efforts that occurred in the developed world such as the sanitary reforms that occurred in England when environmental hazards and infectious disease dominated the health agenda. McKinlay and Marceau (2000) in their article on 'upstream' tobacco control policies eloquently

describe the story of John Snow, the father of modern epidemiology and EHS. In 1855, John Snow provided scientific evidence that cholera outbreaks in London during the early 1850s were communicated through contaminated water supplies. Through careful observation he found that the cholera mortality rate was eight times higher among households whose water was supplied from one water company (the Southwark and Vauxhall Water Company) compared to another (the Lambeth Company). According to McKinlay and Marceau (2000), John Snow had several courses of action available to him after making these findings. He could have: (1) initiated a behavioural change campaign (to educate people living in households supplied with the polluted water about the health effects to boil water before consumption, improve hand washing and improve domestic hygiene); (2) he could have attempted to convince the polluting water company to change the source from which they were supplying their water (they were sourcing water from the Thames river downstream from where sewerage was entering the river); or (3) he could have presented his scientific results at professional conferences and maintained his status as a leading environmental scientist of the day. Instead, John Snow removed the handle from the polluted water pump. Beyond his contribution to EHS, John Snow's enduring legacy stems from his symbolic actions that not only addressed the cholera outbreak, but contributed, in part, to the sanitary reforms in England (McKinlay & Marceau, 2000).

### Concluding remarks

Exactly 150 years on and the population of Delmas, South Africa, and indeed much of the developing world, are faced with a similar situation that faced John Snow. Yet the official response is very different, educate for behavioural change. I am not completely against behavioural change interventions in developing countries and, indeed, there are notable examples of the effectiveness of this approach in reducing disease in developing countries. I have, however, attempted to show why behavioural change remains so pervasive in developing countries when framed within an EHS paradigm and how this forecloses other intervention options.

It has been argued that EHS cannot, on its own, change inequality in the world. It can humbly describe the ill-health effects of poor living conditions and become involved in interventions designed

to reduce impact of environments on health. My question is not whether or not EHS can change the world; but how is it implicated in keeping the world as it is? This question should be central in deciding on how we spend our time and energy on environmental health risks in the developing world. It is hoped that this article will stimulate further debate on the future role and politics not only of behaviour change, but of prevention interventions when framed within an EHS paradigm in developing countries.

### Note

1. I take the view that all actions are political and not necessarily limited to the sphere of party politics. Actions become political when they function to perpetuate certain taken-for-granted assumptions about the world while foreclosing certain others.

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## Author biography

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