



COMMENTARY

Squaring the circle? Some thoughts on the idea of sustainable development

John Robinson^{a,b,*}

^a*Sustainable Development Research Initiative (SDRI) in the Institute of Environment, Resources and Sustainability, University of British Columbia, 219-1924 West Mall, Vancouver, Canada V6T 1Z2*

^b*Department of Geography, University of British Columbia, 219-1924 West Mall, Vancouver, Canada V6T 1Z2*

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Abstract

The paper reviews how the concept of sustainable development has played out in industrialized countries since 1987. It examines the theory and practice of sustainable development in the context of three criticisms (it is vague, attracts hypocrites and fosters delusions), and argues for an approach to sustainability that is integrative, is action-oriented, goes beyond technical fixes, incorporates a recognition of the social construction of sustainable development, and engages local communities in new ways. The paper concludes with a description of an approach to sustainability that attempts to incorporate these characteristics. © 2004 Elsevier B.V. All rights reserved.

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In the foregoing story I have striven to narrate the process involved in a defeat. I thought, first, of the Bishop of Canterbury who proposed to demonstrate the existence of God; then, of the alchemists who sought the philosopher's stone; next, of the vain trisectors of the angle and squarers of the circle.

Jorge Luis Borges: *Averroës' Search*

1. Introduction

There are three classical problems in Greek mathematics that were extremely influential in the development of geometry. One of them is the problem of

squaring the circle: how to construct geometrically a square equal in area to a given circle. The problem was famous enough in ancient Greece that Aristophanes devotes an anecdote to it in the late fifth century BC, from which, apparently the popular term “circle-squarer” was derived, meaning one who attempts the impossible. The problem went on to bedevil mathematicians for over 2000 years until Lindeman proved that the circle cannot be squared in a “planar” fashion (i.e. with compass and ruler). In the meantime, however, and indeed since, the mathematical world has been flooded by attempts to solve the problem.

I introduce this story in order to make a simple analogy. The term “sustainable development” has been seen by some as amounting essentially to a contradiction in terms, between the opposing imperatives of growth and development, on the one hand,

* Tel.: +1-604-822-9188; fax: +1-604-822-9191.

E-mail address: johnr@sdri.ubc.ca (J. Robinson).

and ecological (and perhaps social and economic) sustainability on the other. These critics might indeed be said to believe that trying to achieve sustainable development amounts to trying to square the circle, in the sense of trying to achieve the impossible.

Moreover, the analogy cuts a bit deeper than that. At the heart of the problem of squaring the circle is the attempt to reconcile two incommensurable areas, which cannot be expressed in terms of each other, using the algebraic equivalent of a ruler and compass. As I will argue below, a similar problem of incommensurability lies at the root of some of the most serious criticisms of the concept of sustainable development.

This paper represents an attempt to grapple with the concept of sustainable development. It will briefly touch on the history of the concept, and the record to date of attempts to implement it. Some lessons will be derived from this historical review and one attempt to apply those lessons will be described, with a few pointers at the end about the arduous process of squaring the circle in this field. The focus throughout will be on sustainable development as it has been written about in industrialized countries.¹ It is hoped, however, that some of the analysis or conclusions may have a broader applicability.

2. Sustainable development or sustainability?

Given the large array of concerns that have been expressed about the concept of sustainable development, it is perhaps not surprising that some have found it desirable to develop alternative terminology to express some of the same concerns about the linkage between environmental and social issues. In particular, while government and private sector organizations have tended to adopt the term sustainable development, academic and NGO sources have been

¹ This paper will not engage with the literature that discusses third world perspectives on sustainability and environmentalism. For a recent overview, see [Guha and Martinez-Alier \(1997\)](#). However, the arguments presented here are consistent with the view that sustainable development approaches should move beyond a technocratic, nature-centered view and explicitly address issues of power, the distribution of wealth, and the locally grounded experience of natural and human-made processes of production.

more prone to use the term sustainability in similar contexts.

In part this reflects the more managerial and incremental approach used in the Brundtland report which first popularized the concept of sustainable development. Such an approach almost by definition is more attractive to government and business than a more radical one. However, a more fundamental reason for this tendency to divide on terminological grounds is due to a concern, on the part of NGO and academic environmentalists, that development is seen as synonymous with growth, and therefore that sustainable development means ameliorating, but not challenging, continued economic growth. On this view, the preferred term ‘sustainability’ focuses attention where it should be placed, on the ability of humans to continue to live within environmental constraints.

I will return to this underlying issue below. But for the moment I will continue to use the term sustainable development, since that is the language in terms of which much of the debate has been framed. Moreover, it carries within it the dynamic tension between poverty and environmental concern that is the most radical message of the Brundtland Commission.

3. Sustainable development: brief history of an idea

It may be useful to recall that the concept of sustainable development emerged out of particular historical context.² Along with the concept of a sustainable society ([Brown, 1981](#)), the concept of sustainable development emerged in the early and mid 1980s ([Clark and Munn, 1986](#); [IUCN/UNEP/WWF/FAO/UNESCO, 1980](#); [World Commission on Environment and Development, 1987](#)) as an attempt to bridge the gap between environmental concerns about the increasingly evident ecological consequences of human activities and socio-political concerns about human development issues. In that sense sustainable development was a logical extension of argu-

² For an earlier discussion of that history, which contrasts the sustainable development and climate change discourses, see [Cohen et al. \(1998\)](#). For more conceptual analyses of sustainable development, see [Pezzoli \(1997\)](#); [Mebratu \(1998\)](#).

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