

**DEMOCRATIZING ACCOUNTING TECHNOLOGIES:
THE POTENTIAL OF THE SUSTAINABILITY
ASSESSMENT MODEL (SAM)**

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Democratizing Accounting Technologies: The Potential of the Sustainability Assessment Model (SAM)

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Democratizing Accounting Technologies: The Potential of the Sustainability Assessment Model (SAM)

There is widespread recognition both in and outside of the accounting discipline of the need for 'accountings' that facilitate more participatory forms of decision-making and accountability. This is particularly evident in the social and environmental accounting literature, which has long sought to take pluralism seriously. Theoretically, these calls are embedded in the democratic rather than capitalist traditions of neo-liberal Western societies. This article draws on the work of ecological economist Peter Söderbaum to argue the case for a 'positional' approach to decision-modelling. It also builds on Baxter, Bebbington, Cutteridge & Harvey (2003) to illustrate how this approach could be operationalised through development of the sustainability assessment model (SAM).

Keywords: social accounting, democracy, dialogic, sustainable development, sustainability assessment models

1. Introduction

There is widespread recognition both in and outside of the accounting discipline of the need for 'accountings' that facilitate more participatory forms of decision-making and accountability (in an accounting context see, e.g., O'Leary, 1985; Morgan, 1988; Mouck, 1995; Boyce, 2000). Much of this relates to dissatisfaction with technocratic decision-making tools, as exemplified by debates surrounding the use of cost-benefit analysis (CBA) and similar techniques that date back to at least the 1920s (Adler & Posner, 2001, p. 1). Theoretically, appeals for new methods are embedded in the democratic rather than capitalist philosophic traditions of Western societies (see, e.g., Söderbaum, 1982; Baber, 1988). This is particularly evident in the sustainable development (SD) literature, with calls for tools that recognize the pluralistic nature of contemporary liberal democratic societies and that promote more critically reflective approaches.

Recently various social accounting tools have been proposed as a means of promoting democratic dialogue (see, e.g., Morgan, 1988 on redesigning accounting to facilitate 'better conversations'; Dey, 2003 and Gray, 1997 on 'silent' and 'shadow' accounts; Boyce, 2000 on creating environmental and social visibilities; Gray & Bebbington, 2001 reporting on a variety of environmental accounting initiatives). One of the most recent of these - and one that has been specifically linked to dialogic philosophy - is Baxter, Bebbington, Cutteridge & Harvey's (2003) sustainability assessment model (SAM).¹ Bebbington & Frame (2003, p. 8), for example, note that:

SAM was viewed as a mechanism by which people with competing views as to the impacts of a project could communicate their own concerns and interests to each other. It was believed that often dialogue between parties who have interests in a project becomes alienating because each cannot easily see the viewpoint of the other. SAM was viewed as providing a point of connection between various parties

¹ The SAM has been developed over the last five years from a mix of primary research, conceptual work, and applications of the principles within empirical projects in the United Kingdom and New Zealand. See Section 6 for details.

because environmental, social and economic concerns could all be articulated and accepted as being part of the same evaluation. Further, SAM provides an opportunity for technical specialists to think more broadly than their area of concern and focus. Several individuals highlighted that this aspect of SAM could be particularly helpful in the likes of consent awarding, community planning, or stakeholder engagement processes.

This article seeks to contribute to the literature on participatory accounting and to link it more specifically to democratic philosophy. It draws on the work of ecological environmentalist Peter Söderbaum to argue the case for a 'positional' approach to decision-modelling and explores the potential of the SAM to contribute to such a process. In recognition of the need to also take 'power' aspects of decision-making contexts seriously, it seeks to promote a broadly critical pluralist approach (Addis, 2001).

The paper is organized as follows. In Section 2 a brief review of the accounting literature and of related literature in other disciplines is conducted to establish the need for dialogic tools that promote democratic and reflective decision-making. Section 3 looks more closely at what is involved in reworking "calculation and democracy" (Power, 1992, p. 492), using the examples of CBA and more recent social accounting initiatives. It is argued that the newer technologies are still essentially monologic in approach, and thus vulnerable to the well-established critiques levelled at technocratic CBA. Section 4 reviews key aspects of Söderbaum's work on positional analysis and decision-modelling, as a basis for an alternative approach. In Section 5 key principles for a critical pluralist framework are developed, in keeping with the underpinnings of the critical/alternative accounting project to which this paper seeks to contribute. Section 6 outlines the SAM and illustrates its potential for helping to democratize accounting technologies, as part of a broader dialogic toolkit. Section 7 considers limitations and possible criticisms of the positional accounting concept and of SAM as a dialogic tool. Section 8 contains our concluding comments.

2. Need for dialogic accounting tools

The need for dialogic and participatory 'accountings' has been recognized for at least twenty years in the accounting discipline and has a lengthy pedigree in many other disciplines.² The shortcomings of monologic, technical approaches have become particularly evident with the rise of interest in SD.

Calls for dialogic approaches - accounting and other social sciences

O'Leary (1985) was one of the first writers to draw attention to the connection between accounting - as a "mixture of the hard-factual and the essentially disputable" (p. 91) - and democratic politics. Neo-liberal democracy, at least in principle, recognizes rights of opposition or dissent so that individuals and groups may object to policies and practices they perceive as against their interests. For O'Leary, intellectual honesty requires that accounting academics and practitioners seek to generate greater public recognition of the inherently disputable and challengeable aspects of their work. To remain silent about the fundamental contestability of

² Space considerations prevent a comprehensive account of relevant literature within and beyond accounting. Accordingly, this review is intended to be illustrative rather than exhaustive.

accounting practices "is to licence a violence upon people" through the imposition of truth-claims that impact significantly on their lives and welfares (p. 100).

Morgan (1988) urges accountants to develop a new epistemology of accounting that emphasizes the interpretive and perspectival-based nature of the discipline. He observes that the challenge:

is to develop forms of practice that emphasize how accounting statements and insights should be regarded and used as elements of a *conversation* or *dialogue*, rather than as foundational claims asserting a particular kind of objectivity or 'truth' (ibid., p. 484, emphasis in original).

Accountants should aim to provide broad-based understandings and multi-dimensional insights that can be used as platforms for action as actors construct and reconstruct their social realities.

Power (1992) observes that there is much work to be done in determining the appropriate limits of calculative technologies. Economic reason, through its ability to present itself as "merely technical" and thus divorced from social interests has the capacity "to *eclipse* other forms of knowledge and other forms of social life" (p. 477, emphasis in original). Rather than abandoning accounting, Power challenges accounting theorists to rework "the relationship between forms of calculation and democracy" (p. 492); to build on traditions of quantitative thinking that recognize the potential of a reconstituted accounting capable of incorporating democratic norms.³ In this sense, he suggests that green accounting provides a "vacant space of possibility" (p. 494). While realizing these possibilities may not be an easy task, accounting's transformative potential may be enhanced by linking with initiatives aimed at promoting new forms of corporate democracy.

Cooper (1992) points to the importance of multiplicity in accounting - one that would open up interpretation and allow for many differences - to counter the phallogocentric binary of mainstream accounting:

If the basic drive of the masculine is to unify, to stabilize and rationalize, then the feminine, in order to disrupt this, must remain multiple and diffuse... the feminine is plural, circular, concentric, without [pre-set] goals (p. 34).

Mainstream accounting "cannot *take account* of the Other" (ibid., p. 35, emphasis in original). Nor is that the call. Rather the aim is to develop possibility spaces for "thinking, and speaking that allows for openness, plurality, diversity and difference" (Tong cited in Gallhofer, 1992, p. 41). This requires spaces where people "can express their alterity" (ibid., p. 43).

Mouck (1995) charges that financial reporting has been colonized by neo-classical economics, contributing to its development as a 'totalizing' form of discourse that marginalizes other perspectives. It seeks to claim epistemological privilege on the basis of its scientific methodology. Information is treated as 'just another commodity' rather than as crucial to the healthy functioning of a pluralist democracy. This depoliticizes the public interest aspects of corporate accountability, which are identified with supposedly fixed and pre-existing wants and preferences of individuals

³ Power (1992) points to the work of Porter (1991). In this bracket, one might also include literature on assumptional analysis and dialectic advice models (Mason & Mitroff, 1981); the politicization of social indicators (Henriot, 1970; Carley, 1979); deliberation frames analysis (Haag & Kaupenjohann, 2001) and the NUSAP system for multidimensional uncertainty assessment (Funtowicz & Ravetz, 1993; van der Sluijs, Craye, Funtowicz, Kloprogge, Ravetz & Risbey, 2005). These all seek to illuminate the many sides of a decision-situation where those involved differ with respect to values and ideologies.

(cf the notion that public interest is politically constituted through a participatory process). By contrast, the long-standing liberal principle that, in a democracy, knowledge and information must be freely accessible recognizes the creative potential of discourse. Mouck (1995) cites the example of ethical investors who want information that will help them articulate their social and political concerns and open other actors and institutional practices to 're-articulation'.

Boyce (2000) addresses the issue of accounting as a social technology - "a form of social power" (p. 27). As such, accounting may perform an enabling or constraining function. Accountants may contribute to the "invisibility of bads" (p. 28), and serve an ideological function in downplaying ecological impacts or create environmental and social visibilities that facilitate discourse and debate:

[Social and environmental accounts] may serve either as a tool for broadening public discourse, debate, and decision making... or as a legitimating device to create an appearance of broader accounting and thereby facilitate the *de facto* dominance of financial and economic factors (p. 29, emphasis in original).

Boyce (2000) suggests that accounting could have a major role in developing accountability in a participatory democracy. He proposes that a useful role for social and environmental accounting would be to promote open and transparent decision-making by making visible a range of costs and benefits at various levels, and exposing the standpoints and priorities of interested parties. He cautions against models aimed at bringing 'decisive closure'. Just as SD itself is a contestable concept, social and environmental accounting should not be aimed at producing incontrovertible accounts. Societal worth would be judged not in terms of the expert production of '*the right answer*' but in the raising of questions and issues for discussion:

any form of social and environmental accounting (and much financial accounting) will produce outputs which are contestable and open to debate. The utility of such accounting is not in its representation of 'infallible truth' but in its creation of a range of environmental and social visibilities and exposure of values and priorities that become inputs to wider democratic processes of discourse and decision making (p. 53).

Rather than simple information provision, accountants need to develop accounting models and ways of presenting information that "prevent premature closure on issues" and "which infuse debate and dialogue, facilitating genuine and informed citizen participation in decision-making processes" (ibid., p. 55). In doing so, they might also help make transparent the role of power.

Calls for more dialogic approaches are not confined to accounting.⁴ Increasing numbers of academics and practitioners in other social sciences are also resisting technocratic, positivist approaches and embracing more pluralistic understandings of their disciplines. In fields such as organization studies, law, public policy, economics and education there is growing resistance to the domination of positivism and economic rationalism and calls for new, more hermeneutic understandings (see, e.g., Pildes, 1991; Day, 1998; cf Herbohn, 2005, p. 529).

Institutional structures have traditionally been dominated by a monologic approach (see, e.g., Phillips, 1997 on the monologic nature of most stakeholder engagement processes). However, growing numbers of organization, legal and policy theorists are embracing a view of firms and institutions as 'polyvocal' and 'polycentric'. Organizations and the actors within them are characterized as having multiple goals and constituencies. Traditional profit-maximizing firms

⁴ Indeed a strong case can be made that accounting is just 'catching up' in this regard.

may also seek to be socially responsible, concerned to do what is 'right'. Diversity between and within firms means that it can no longer "be assumed that everyone... shares the same objectives or that there are shared understandings" (Hutter, 2001, p. 308). These heterogeneous relationships are seen to both affect and reflect broader social patterns and institutional settings.

Recognition of the limits of technical rationality has also brought resistance to the 'scientizing' of public policy (Baber, 1988). There are increasing calls to embrace more democratic policymaking structures and interpretive techniques - "frameworks that permit those affected to debate and define their own... values" (Pildes, 1991, p. 964) and socio-political meanings:

efforts to "rationalize" public policy... fundamentally misconceive the values at stake in public decisions, as well as the role of democratic politics in determining those values... 'costs' and 'benefits' cannot be defined in a cultural vacuum... what is valued as a benefit, what about it is valued, and how that value is to be realized depend upon cultural understandings and meanings... cost-benefit analyses, even in their more sophisticated variants, cannot legitimately assign these understandings and meanings where they are controversial: only democratic politics can (ibid., p. 957).

Technocratic experts are increasingly being challenged for not taking sufficient account of the socio-political context of risk assessment (Anderson, 1988; Gillette & Krier, 1990; Edmond & Mercer, 1998). Democratic participation - through discussion and debate - is argued to foster political legitimacy and the creation of new ideas (Jones, 1997). Dialogue allows citizens to not only express their preferences, but also informs and enriches them. Söderbaum (2004d) observes that, even in economics - often regarded as the physics of the social sciences - there are signs that technocracy is losing ground, paving the way for more pluralist and context-sensitive approaches. Concerted efforts are being made to promote new institutional frameworks and participatory tools that recognize the heterogeneity of social actors and that facilitate multi-perspectival discussion and debate.⁵ Proponents of particular positions might still seek to persuade others, but through the "ongoing political and value struggles characteristic of vibrant democracies" rather than coercive appeals to objectivity (Pildes 1991, pp. 964-965). Dialogic tools allow citizens to participate in the definition and construction of reality rather than emphasizing a 'discovered reality' (Baber, 1988, p. 176; Dodge, Ospina & Foldy, 2005).

The need for political dialogue is seen as particularly important in a sustainability context. Any idea of indicators as merely technical tools unravels completely:

the whole process of devising and using indicators is one way that debates and conflicts over what constitutes sustainable development occur. The involvement of different actors in the indicator programme is not just a matter of each actor wanting to serve their own interests or exercise power; it is at the same time about each actor trying to impose their own view of what sustainable development should be (Rydin, Holman & Wolff, 2003, p. 583).

Astleithner & Hamedinger (2003, p. 628) suggest that an explicitly social constructionist approach may help to resolve the 'implementation gap' between the dissemination of sustainability indicators and desired movements towards SD. This requires an understanding of the interrelationships between decision-making processes and political dynamics, in particular the dialectics of conflict and cooperation in specific social contexts.

⁵ For overviews of the work being done in the organizational and public policy arenas, see Calton & Payne, 2003; White, 2002; Dixon & Dogan, 2004).

Calls for dialogic approaches - the 'hard' sciences

Calls for democratization are also becoming apparent in the traditional 'hard' areas of science, as evidenced by the emergence of 'post-normal science'. Post normal science can be contrasted with Kuhn's (1970) conception of 'normal science' as the solving of well-defined disciplinary puzzles. Growing recognition of the inherent uncertainties and value laden nature of scientific practice has brought calls for a more participative and ideologically open approach (see, e.g., Funtowicz & Ravetz, 1993; Luks, 1998, 1999; Haag & Kaupenjohann, 2001). Again debates around SD have been pivotal:

There is no avoiding the policy questions of costs for whom, benefits for whom, dangers borne by whom, and when and where? In other words, whose perceptions and principles are going to prevail, whose interests are to count more, and whose less? Here scientific practice, including the prioritizing of research and dissemination of results, is necessarily entwined with wider political processes. How do we choose amongst the various particular economic and ecological outcomes that might be feasible within the framework of long-term sustainable activity? (Funtowicz, O'Connor & Ravetz cited in Luks 1999, p. 714).

Sustainability is characterized as an area where facts are uncertain, values are contested and the decision stakes are high (Funtowicz & Ravetz, 1993, p. 744). As Luks (1999, p. 716) puts it "if science wants to stay relevant, it has to mess with politics".

Normal science, underpinned by positivist philosophy, seeks "universal, objective and context-free knowledge" (Haag & Kaupenjohann, 2001, p. 53). It thus struggles to deal with the uncertainties in real-world organizational and public policy contexts. Post normal science, by contrast, is based on "assumptions of unpredictability, incomplete control, and a plurality of legitimate perspectives" (Funtowicz & Ravetz, 1993, p. 739). It is transdisciplinary, committed to methodological pluralism, participative and context-sensitive (Luks, 1999; Haag & Kaupenjohann, 2001). There is "no privileged epistemic access to complex systems that would allow for a single, objective description" (Haag & Kaupenjohann, 2001, p. 54). It recognizes the importance of values in a world where, to varying extents, people choose their futures:

post-normal issues... deal with ill-defined problems... in concrete, entangled and complex economic-ecological systems, frequently involving local-global interactions, large scales, broad scopes and a high degree of uncertainty of all kinds, notably epistemic-ethical uncertainty: The traditional opposition of 'hard' facts and 'soft' values is inverted as here decisions are found that are 'hard' in every sense, but for which the scientific inputs are irremediably 'soft'... The observation and description of post-normal issues cannot be severed from the perspective of the observer or the observer's values and norms; different perspectives, domains of phenomena of interest and decision stakes lead to differing, non-equivalent system descriptions (ibid., p. 53).

Open debate concerning such issues helps ensure the politics surrounding sustainability are brought into the open and that various actors can debate their perspectives (Funtowicz & Ravetz, 1993). "Local, variable, temporal and spatial context gains importance" (Haag & Kaupenjohann, 2001, p. 57).

Post-normal science is concerned to ensure that its methods and results are communicable to non-specialist audiences. Stakeholders from different disciplines and from lay publics participate in quality assurance processes as part of an extended peer community (Haag & Kaupenjohann,

2001). Scientists are expected to communicate epistemic uncertainties to decision-makers, to prevent their findings acquiring an aura of reality they do not deserve:

Those whose lives and livelihood depend on the solution of the problems will have a keen awareness of how the general principles are realized in their 'back yards'. They will also have 'extended facts', including anecdotes, informal surveys, and official information published by unofficial means. It may be argued that they lack theoretical knowledge and are biased by self-interest; but it can equally well be argued that the experts lack practical knowledge and have their own unselfconscious forms of bias (Funtowicz & Ravetz, 1993, p. 753).

In such an approach decision-makers, stakeholders and technical advisers are typically viewed as working together as co-investigators. As Dalal-Clayton & Sadler (2005, p. 27) explain it:

Participation by decision-makers and stakeholders is necessary to ensure that the assessment incorporates their values and addresses their concerns. Participants need to have a major say in what is assessed and in deciding questions of value. At the same time, the team undertaking the assessment has a responsibility to make sure that the assessment is technically sound and withstands scientific scrutiny... In effect, the assessment must be designed jointly by participants and technicians.

This is in marked contrast to conventional approaches where stakeholders, if they are acknowledged at all, are typically treated "as passive learners at the feet of the experts" (Luks, 1999, p. 706). Post-normal science is concerned with fostering serious and wide-ranging discussion and debate about the "kinds of communities, characters, and cultures.... we want to help create" (ibid., p. 712 citing Throgmorton).

3. Reworking calculation and democracy - the issues

Lessons from the CBA literature

CBA has been promoted as a democracy-enhancing technology. Sunstein (2002a, 2002b), for example, argues that it forces decisionmakers into conversation with objective data, that it makes decision-making more transparent, prevents undue pressure from interest groups, and increases accountability. Policymakers and consultants have promoted it as a tool for clarifying and rationalizing social choices and building consensus (Corner House, 1999). However, academics and practitioners across a wide range of disciplines have provided a powerful critique of these claims (see, e.g., Ackerman & Heinzerling, 2002; Corner House, 1999; McGarity & Shapiro, 1996; Sinden, 2004a, 2004b). Sinden (2004a, pp. 213-214), for example, argues that CBA:

flattens our most profound emotions, beliefs, and values into the dull gray of dollars and cents; it produces hopelessly indeterminate results; it clouds transparency and undermines public participation by giving controversial and uncertain predictions a false patina of scientific accuracy and objectivity.

Recent research by Herbohn (2005) suggests that these debates are also surfacing in an accounting context.

We consider that the critique of CBA contains valuable lessons for those seeking to democratize accounting technologies. For the purposes of this paper, we will explore those aspects of most relevance to the accounting for sustainability debates.⁶

Resistance to monetization

The monetization of non-economic values (e.g. placing dollar values on human life) in CBA is seen to dehumanize and devalue them; contributing to the 'commodification of everything' (Bangser, 1982; McGarity & Shapiro, 1996). All activities become socially constructed as 'economic' and regarded as 'tradeable' against each other.

In the sustainability arena attempts to force arguably incommensurable values into a common money metric are regarded as particularly counter-productive. Sinden (2004a, p. 198), for example, argues that such an approach lacks authenticity in terms of how human beings actually value diverse goods:

We would never offer a friend a cash payment to "compensate" her for canceling a lunch date, because we view friendship as simply incommensurable with money. Nor would a pet owner consider the "opportunity costs" of not eating her pet or not selling it for laboratory experiments. Similarly, many people balk at the prospect of attaching a dollar figure to the loss of an endangered species, the destruction of a pristine natural area, or the loss of a human life because they view these values as simply incommensurable with market commodities and thus not measurable along a monetary metric.

CBA confuses the preferences people have as consumers with the values they hold as citizens, and privileges the neo-classical economic view of humans as 'consumers' (Sinden, 2004b; Sagoff, 1998). Decisions regarding sustainability should arguably be the product of democratic deliberation, rather than the aggregation of consumer preferences. When alternatives have to be compared and prioritized this:

should be on the basis of a comparison not only of monetary valuations, but also of health and ecological risks; of the likely consequences on local community economics, community spirit, or the seventh generation hence; of the probable effects on centralization of political power, democracy, powers of community oversight, or feelings of fairness; of the impacts on people's connection to the land or on restoration of damaged habitat; and so on (Corner House, 1999).

Recognizing the reflexive nature of accountings and reality, critics fear narrowly economic rationalist approaches may actually contribute to environmental and social degradation and exploitation (cf Herbohn, 2005; Gibson, 1996; Hines, 1991, 1992; Lehman, 1995, 1996, 1998; Maunders & Burritt, 1991).

⁶ We focus here on the more conventional forms of CBA. We appreciate that there are 'soft' versions of CBA that take on board some of these criticisms (see, e.g., Bangser, 1982 on integrative CBA and Abramowicz, 2004 on predictive CBA) and, indeed, have drawn on some of these developments in our own work on SAM.

Subjectivity/indeterminacy of calculations

Faith in the ability to objectively describe choices and objectively enumerate and compare values is central to CBA (Pildes, 1991, p. 975). Attempts are made to achieve this using neo-classical economic valuation methodology.

Shadow prices are sometimes estimated by reference to market prices (e.g. imputing the value workers place on occupational safety and health by looking at the wage premiums they demand for risky work). In other cases, monetary values are assigned using contingent valuation methods (e.g. asking survey respondents how much they would be prepared to pay for species preservation or to reduce their risk of mortality from a particular cause; or how much they would accept as compensation for losing their 'beautiful' view).

In practice, CBA calculations face a raft of measurement and valuation difficulties. These include the offer-asking problem (economic values depend on who you allocate the property right to in contingent valuation surveys); the impact of distribution of wealth on willingness to pay and bargaining power; information asymmetries and scientific uncertainty.⁷ The results of contingent valuation methods are heavily dependent on who is identified as the interested population and how questions are framed. In calculating the value of endangered species, for example, it is not self-evident whether we should count the 'willingness to pay' of all households in a region, a country or the world (Sinden, 2004b, p. 210). Respondents might tell an interviewer "what they think she wants to hear or inflate their answer to effect a public policy for which they will not have to pay" (Heyde, 1995, p. 343). High protest rates (respondents refusing to 'buy' or 'sell') also raise questions about the legitimacy of these surveys (Sinden 2004a; Heinzerling, 2002).

CBA calculations also embody highly debatable cost and benefit estimates and judgements about appropriate discount rates. Supposedly scientific numbers "rest on multiple layers of guesses and simplifying assumptions" (Sinden, 2004a, p. 200). Sunstein's case study of the regulation of arsenic levels in drinking water assesses that the benefits of regulatory action plausibly range from zero to half a billion dollars. Heinzerling (2002, p. 2313) suggests that such studies illustrate that CBA "generates a series of numbers that are almost comically meaningless if one really understands them".

The huge uncertainties in the monetization exercise result in incorrigibly indeterminate results and open the way for opportunistic interpretations. In this sense CBA fails on its promise to deliver a 'non-political' decision-making tool.

Politics of CBA

CBA - in common with other positivist projects - tries to escape politics by ignoring or denying its own value-laden and subjective nature. It elevates one particular value - economic efficiency - above all others (McGarity & Shapiro, 1996). Political judgments also inhere in CBA in terms of the choices of *what* and *whose* costs and benefits to count and *how* to quantify them, as they do in any accounting.

⁷ There is a wealth of literature in this area. For an overview, see Adler & Posner (2001).

Sinden (2004b, p. 194) argues that this false promise of determinacy and the pretence of objectivity and scientific accuracy provides a serious threat to democratic values:

It is this false promise - the allure of numbers and scientific calculation - that renders CBA so vulnerable to manipulation and so destructive to democratic decision-making... And it is this false promise that therefore moves CBA beyond the realm of the merely ineffectual to the dangerously misleading.

Numbers, because they appear scientific and apolitical, wield substantial power and authority in Western societies and institutions. They provide a way of masking value choices and the political nature of actions and thereby avoiding democratic processes (Corner House, 1999). They also exacerbate power imbalances "by rendering the decision-making process particularly vulnerable to manipulation by powerful monied interests" and inaccessible to lay audiences (Sinden 2004b, p. 228). Inconvenient costs may be "ignored, miscalculated, and intentionally minimized" (Corner House, 1999).

Decision-makers have the ability to filter the information stakeholders receive and to take opportunistic advantage of the multiple layers of uncertainty in CBA calculations.⁸ This is exacerbated by the general lack of public awareness concerning the contestable nature of the calculations (cf O'Leary, 1985). As such, CBA is vulnerable to being used as a form of mystification.

Distributional issues

CBA focuses on monetary totals; ignoring how costs and benefits are distributed among different groups.⁹

Disregard for equity runs counter to the core of sustainability discourse, for those who wish to promote eco-justice as well as eco-efficiency. Here there is concern not merely about "comparing apples and oranges" but situations "where 'apples' are taken away from one group of people to provide 'oranges' to another group" (Corner House, 1999; see also Mustafa, 1994 on how CBA obscures the conflicts of multiple interests).

Many costs in a sustainability context involve benefits to others (including future generations, non-Western nations, other species). Averaging costs across organizations or societies (e.g. health and safety, displacement of local communities), ignore harms to vulnerable groups. There is a need for distributional analysis that identifies costs and benefits to particular parties:

[an instrument that could] "demonstrate what the consequences of a project are on the displaced", including "landlessness, joblessness, homelessness, marginalization, mortality, loss of access to resources, and social disarticulation" (Corner House, 1999).

⁸ The OSH arena provides a good example of the ways in which information and CBA can be used as 'tools of power' (see, e.g., Abel, 1985, 1990; Carle, 1988; Frick, 1999; McGarity & Shapiro, 1996; Schroeder & Shapiro, 1984).

⁹ Some attempts have been made to incorporate distributional concerns, e.g., by factoring in a 'preference for fairness' or applying distributional weightings (Harberger, 1984; Adler & Posner, 2001). However, neo-classical economists typically consider distribution to be an 'inherently subjective' matter outside their realm.

Any social consensus embodied in market values is open to debate, with prices increasingly being questioned from a 'fair trade' viewpoint (Corner House, 1999). Standard contingent valuation methodology for non-traded goods (i.e. unweighted willingness to pay) also arguably discriminates against the less well-off, whose responses are typically framed in terms of their (in)ability to pay (Abramowicz, 2002). This is often compounded by problems of information asymmetry.

Small differences in discount rates can also yield dramatically different results, resulting in difficulties for inter-generational equity or where people come to regret their earlier decisions. Even very low discount rates attach only a very small weighting to the welfare of future generations.¹⁰

CBA thus helps more privileged groups to impose costs "on the countries, communities, and individuals with the least resources" (Ackerman & Heinzerling 2002, p. 1575). Surveys typically find that:

Wealthy communities are willing to pay more for the benefit of not having the facility in their backyards; thus, the net benefits to society as a whole will be maximized by putting the facility in a low-income area. (Note that wealthy communities do not actually have to pay for the benefit of avoiding the facility; the analysis depends only on the fact that they are willing to pay.) (ibid., p. 1574).

Corner House (1999) cites examples of the use of CBA to propose that the World Bank encourage polluting industries to migrate to less-developed countries, on the basis that the "economic logic behind dumping a load of toxic waste in the lowest wage country is impeccable" and debates over global warming where economists "claimed that the value of a statistical life of a Chinese citizen was worth only 1/15th of that of a North American".¹¹ Any notion that CBA's efficiency judgements are somehow less political than distributional issues is rejected. As Kennedy (1981, p. 420) bluntly puts it:

the notion of a "tradeoff" between the "hard" datum of efficiency and the inherently subjective, "political" datum of equity is apologetic nonsense.

Labelling costs and benefits as internal or external - and the assignment of numbers to them - is not a neutral economic activity but an inherently value-laden process tied closely to our socio-political, cultural and ideological frames of reference.

Objections to consequentialist ethics

CBA is inherently utilitarian in approach. Critics point out that economically irrational choices may sometimes be 'right' and thus inappropriate subjects for cost-benefit balancing:

¹⁰ Some analysts attempt to deal with inter-generational equity and inter-temporal choices through zero or hyperbolic discounting, to avoid giving too little weight to future costs and benefits (Frank, 2000).

¹¹ Government agencies engaging in CBA typically use valuation of life figures that are invariant across individuals (Adler & Posner, 2001). However, some CBA analysts object that it is not clear that regulators do the poor any favours 'by forcing them to spend more than they are willing to pay' (Sunstein, 2002, p. 2380).

For the common run of questions facing individuals and societies, it is possible to begin and end our judgment simply by finding out if the benefits of the contemplated act outweigh the costs... one way to show the great importance, or value, attached to an area is to say that decisions involving the area should not be determined by cost-benefit calculations. This applies... to the view many environmentalists have of decisions involving our natural environment (Kelman cited in Jutlah, 2001, p. 23).

Sinden (2004a) cites endangered species as a paradigmatic example, where animals may be regarded as having intrinsic moral standing. Rights-based objections to CBA have also been mounted on the basis of indigenous and other human rights.

Normative commitments can be integrated into CBA e.g. by giving certain impacts infinite values or allowing them to act as trump cards (Brown, 2004). However there is a fear that, in practice, such approaches will be downplayed as 'soft' and 'subjective'. This solution is also limited in that it only works where a single hard constraint is activated. In complex situations, conflict may be inevitable (e.g. a choice between saving one species or another, or saving some human lives at the cost of others).

Reliance on experts

CBA is an expert-driven process and largely inaccessible to non-specialist audiences. Ackerman & Heinzerling (2002, pp. 1577-1578) argue that, as such, it delivers less rather than more objectivity and transparency:

It requires a great deal of time and effort to attempt to unpack even the simplest cost-benefit analysis. Few community groups, for example, have access to the kind of scientific and technical expertise that would allow them to evaluate whether, intentionally or unintentionally, the authors of a cost-benefit analysis have unfairly slighted the interests of the community or some of its members. Few members of the public can participate meaningfully in the debates about the use of particular regression analyses or discount rates which are central to the cost-benefit method.

Results are typically presented in a technical language that seems beyond question or over-simplified to a few summary statistics "unadorned by explanations or caveats" (Sinden 2004a, p. 211). Either way, they convey a false impression of scientific objectivity and divert attention away from underlying values and assumptions in a way that is disabling for citizen participation:

By shifting the decision-making process from a debate about values, in which everyone feels qualified to participate, to a scientific calculus, which only certain highly trained experts can authoritatively critique, cost-benefit analysis takes control away from the citizenry and places it in the hands of an elite corps of expert economists (and those who can afford to hire them) (ibid., p. 208).

The scientific uncertainty and socio-political judgments involved in risk assessment and other aspects of CBA arguably reduce the advantage experts have over lay people. Just as non-specialists are susceptible to cognitive errors when acting as 'intuitive toxicologists' (Sunstein, 2000), experts may fail to recognize the complexity of the risk decisions people make in their

everyday lives.¹² Anderson (1988, p. 60), for example, contrasts the self-understandings of workers with the images presupposed by CBA:

The stories workers tell about themselves... contrast markedly with the picture of them which cost-benefit analysis presupposes, that of purely rational and freely acting utility-maximizing consumers. Nelkin and Brown uncover four particularly noteworthy patterns... These concern (1) factors affecting the acceptability of risk, (2) the role of notions of responsibility in informing choices about risk, (3) perceived constraints on mobility which undermine the claim that risks encountered on the market are accepted voluntarily or with what is seen as full compensation, and (4) indications that the internal conditions for fully free choices often break down. The first two patterns show how people's ethical concerns are richer than those acknowledged by cost-benefit analysis. The remaining two patterns undermine cost-benefit analysis internally, by suggesting that some of its empirical assumptions are mistaken.

Conceptualizations of risk may also vary greatly across stakeholders groups. Again, the OSH context is instructive (Hutter, 2001; Nelkin & Brown, 1984). Hutter (2001, pp. 199-230), in her case study of British Rail, points to the differences between managerial and worker conceptualizations and the role that power and stratification plays:

more senior managers tended to be office based and thus spatially removed from the everyday reality of the risks. The workforce... were directly exposed to risks but... tended to normalize or deny risks... (p. 213)... Those who did not complain explained this either in terms of accepting risk as part of the job or because they saw no point - either because they felt that nothing would be done or because they believed that the management already knew about the problem (p. 227).

Expert forums may nominally be open to public participation, but the reality is often otherwise (Gillette & Krier, 1990). For those not technically trained, CBA calculations may seem intimidating and daunting. Lacking the skills or self-confidence to 'test' calculations independently, lay people may simply accept results on faith (Sinden, 2004b, p. 219).

Experts themselves may also consciously or unconsciously bias analyses because of external influences or ideological agendas (Abramowicz, 2004; McGarity, 2002). The conceptual frameworks they bring to a situation (e.g. through their social backgrounds and education) have considerable influence on how they define and approach problems (Gillette & Krier, 1990).

'Social accounting tools' - still essentially monologic

Over the years various tools and techniques have been developed in response to calls for broader approaches in accounting. Cooper (1992, p. 31) notes the early experiments with multi-column reporting, triple-entry-bookkeeping and an increased emphasis on narrative disclosures. More recently, there has been renewed interest in using social indicators to measure performance and various experiments in full cost, triple bottom line and sustainability accounting (see, e.g., Bebbington, 1997; Bebbington & Gray, 2001; Herbohn, 2005). These have frequently been associated with attempts to introduce stakeholder engagement processes and more participative

¹² The sociology of risk literature suggests the following as important inputs into lay risk assessments: the trustworthiness of information sources and institutions; amount of control (e.g., whether risk is voluntarily assumed); technological alternatives; distribution of risks and benefits; inter-generational equity; scientific uncertainty; irreversible consequences and manmade versus natural risks (Edmond & Mercer, 1998; Gillette & Krier, 1990).

policymaking environments (Gray, Dey, Owen, Evans & Zadek, 1997; Owen, Swift & Hunt, 2001; Booth & Cocks, 1990).

However, too often these 'new' approaches remain firmly embedded in a positivist, neo-classical economic agenda. They are designed, used and applied as monologic, technocratic tools; underpinned by instrumental rather than hermeneutic rationality. As such, they are susceptible to the critiques of CBA outlined above. Sustainability is understood largely in managerialist, eco-modernist terms (Welford 1998; Everett & Neu, 2000). Money is still viewed as the most "convenient measuring rod" (Power, 1992, p. 494). Models are 'sold' by consultants as objective tools (Thomson & Bebbington, in press, p. 16). In use, they appear to be designed more to persuade readers of a pre-determined perspective rather than to facilitate discussion and debate (Luks, 1999). Calculations are displayed that appear exact and proper, allowing decision-makers to hide behind a 'scientific' analysis that ends with clear-cut answers (Söderbaum, 2004d). Moves towards the professionalization of reporting and auditing practices reinforce these 'objectifying tendencies' (Thomson & Bebbington, in press, p. 16). Decisions based on supposedly democracy-enhancing tools are still only transparent to experts who speak the language. Values and preferences are treated as exogenous rather than as socially constructed. Non-quantifiable aspects of sustainability (e.g. aesthetics, spirituality, critical habitats, culture) tend to be ignored or devalued (Boyce, 2000; Herbohn, 2005).

Stakeholder input into policy-making and report preparation has also been very limited and has done little to enhance corporate accountability or democratic dialogue (Booth & Cocks, 1990; Owen et al., 2001; Thomson & Bebbington, in press). Stakeholder processes are essentially exercises in pseudo-participation - symbolic legitimization exercises. Decision-makers set the agenda and rules of the game in ways that minimize constraints on managerial prerogative. Report recipients are expected to treat valuation processes as 'black boxes', making them vulnerable to opportunistic interpretations. Suggestions of 'rights' to information and participation are fiercely resisted (see, e.g. Brown, 1997 in a labour context). Report preparers focus on aspects of organizational performance they regard as relevant, ignoring the perspectives of others (Gray, Dey, Owen, Evans & Zadek, 1997). Reports are typically presented as objective facts designed "to tell a more or less passive audience that 'everything' is fine and to discourage further questioning of the organisation" (Thomson & Bebbington, in press, p. 15). Accounting is still too often approached as a conceptually closed system treating anything outside its "a priori defined set of parameters" as background (Haag & Kaupenjohann, 2001, p. 51).

Some academics and stakeholders defend their "modernist approaches" on the basis that economic rationalism still dominates management decision-making and public policymaking and that this is "the only way to ensure consideration of [sustainability] issues" (Herbohn, 2005, p. 529). It provides a means to fight on the terrain of 'hard' financial calculation - a language managers understand. While there are advantages in engaging in a way that resonates with people's established beliefs (Bruce, 1983), it is arguably also important to do so in a way that problematizes (e.g. by providing counter-perspectives) and to recognize the multiplicity of rationalities and discourses in modern democratic societies.

From a dialogic perspective, there is a need to develop models based on a multi-dimensional, social constructionist approach (Thomson & Bebbington 2004; Bebbington, Brown, Frame & Thomson 2005; Thomson & Bebbington, in press); to facilitate and promote public dialogue, broaden public discourse and help people see their commonalities and their differences. Such an approach recognizes that ideological perspective matters.

Thomson & Bebbington (in press) call for a more dialogically oriented social and environmental accounting that takes stakeholder engagement seriously; one that recognizes issues of concern to accountees, that provides multi-layered and multi-faceted accounts and explicitly addresses power differentials. They call for the replacement of the single lens of monologic accounting with a polyvocal citizenship perspective (cf Gray et al., 1997). This recognizes that stakeholders are likely to have different and competing perspectives and requires an accounting that can encapsulate multiple understandings:

explicit recognition of competing versions of realities and interests... would emerge. This would seem, to us, to be more valuable than creating a SER which assumes that there are always a commonality of interests in a single outcome (Thomson & Bebbington in press, p. 14).

Social accounting needs to create spaces for individual and groups to deal critically and imaginatively with problems and to participate actively in the (re)constructions of their world(s) (ibid., p. 18).

Values and assumptions are more likely to be apparent through exposure to multiple perspectives. This helps provide a means of bringing areas of consensus and conflict to light. Doing this in an open way that is 'expansive of argumentation' is more reflective of the complexity of the social world and helps to facilitate a more fairly negotiated order (O'Leary, 1985). It helps individuals and groups recognize the limit situations they seek to place on themselves and others. These will vary according to ideological predisposition (e.g. commitment to 'business as usual', shareholder wealth maximization, stakeholder values or more radical forms of emancipation - see Brown & Fraser, in press). It recognizes that the apparently neutral advice of mainstream accounting (e.g. based on a privileging of financial markets) amounts in part to acceptance of one side on deeply contested issues (O'Leary, 1985).

We recognize that proposals for democratic intervention pose significant implementation challenges. The scope for political action by affected parties in neo-liberal societies is restricted and we share the views of those arguing for more participatory forms of democracy:

To take the concept of a diverse, pluralistic society seriously, according to the participatory view, requires at least the establishing of a legitimacy and a set of institutions and arenas in which people gain at least a right of opposition and bargaining, and preferably of democratic decision making, through all areas of social life, including the corporation. It requires a recognition of politics at the level of people's routine, daily social activities (ibid., p. 98).

There is a need for dialogic entitlements (e.g. information and participation rights) and dialogic institutions, where views can be debated in a robust fashion (O'Leary, 1985; Owen et al., 2001). Though beyond the scope of this paper, the development of dialogic tools needs to be dovetailed with related work aimed at a major rethink of areas such as education, corporate governance, standard-setting and public policy.¹³ This includes exploration of the possibilities of Web-based technology (Unerman & Bennett, 2004).

We also recognize that democracy can be defined in many ways.¹⁴ In line with the writers canvassed in Section 2, at a fundamental level we consider it entails respect for different perspectives and the freedom to speak, organize and contest. It seeks to guard against monologic

¹³ For some pointers to the issues involved, see Gallhofer & Haslam (1996), Thomson & Bebbington (2004), O'Leary (1985), Booth & Cocks (1990), Bebbington et al. (2005).

¹⁴ For an overview of different approaches, see Held (1996).

attempts to limit opinions to those that are congruent with only one ideology through transparency and the participation of interested parties. Issues of accountability and access to information are key, with implications for the relations between individuals and groups across various societal arenas.

4. Söderbaum, pluralism and positional analysis

Söderbaum is an ecological economist, who has written widely on environmental management, democracy and SD (see, e.g., Söderbaum, 1982, 1987, 1993, 1999a, 2000, 2004a,b,c,d). He rejects the possibility of value-free academic discourse and argues the case for methodological pluralism so as to better reflect "the ideological diversity in a democratic society" (Söderbaum 2004b, p. 159). In this section, we focus on his critiques of technocratic decision-making and his proposals for more dialogic approaches to decision-modelling.

Söderbaum (2004d) observes that SD is a multi-dimensional concept that can be approached in many ways. It includes social, environmental and cultural dimensions in addition to monetary aspects. The issues are multi-disciplinary rather than limited to a single discipline and straddle individual, micro, meso, macro and global levels of analysis. Complexity and uncertainty are the norm.

SD is also an ideologically loaded area, where conflicts of interest and in perspective are widespread; ranging from a 'business as usual' approach, through adaptation within the present system to those seeking radical change (cf Brown & Fraser, in press). Some privilege an 'eco-efficiency' approach, while others place priority on distributional issues. Discussion of sustainability issues - in academic or practitioner fields - cannot be seen as objective and independent of actors' underlying values and assumptions:

It is increasingly understood that the problems are not just 'out there in the field' or ecosystem but also have to do with the 'mental maps' of politicians, civil servants and other actors in society (Söderbaum 2004d, p.1)

Söderbaum contends, consistent with the position taken in this paper, that this complexity, uncertainty and ideological diversity need to be taken into account in SD policy and decision-making situations. He urges a major rethink of the neo-classical economic theories and methods underlying conventional CBA, full cost accounting and similar initiatives.

Monologic CBA

NCE methods for decision-making such as CBA are based on the concept of optimization (or maximization subject to constraints). Söderbaum observes that CBA analysts are typically experts in a very traditional sense and not part of an interactive learning process. Based on neo-classical assumptions, they imply they know 'correct' prices, rules of valuation and resource allocation. They do little to encourage debate and tend to treat participation in a perfunctory manner or suggest that it is unnecessary (Söderbaum, 2004d).

CBA does not consider the interests of different stakeholders with respect to a specific decision or their different perspectives on SD issues (e.g. their viewpoints on 'fair trade'). Individuals are

treated as consumers expressing their 'willingness to pay' (sometimes 'willingness to accept') for commodities traded in actual or hypothetical markets (Söderbaum, 2004d). People who refuse to sell or to express themselves in money terms (e.g. on deontological grounds) are treated as 'protest votes'. Actors and decision-makers who share CBA ideology (e.g. its privileging of economic efficiency) benefit from its application while others suffer (Söderbaum, 2004c, p. 48)

For Söderbaum, monetary reductionism - transforming arguably incommensurable impacts to one-dimensional money equivalents - will not make impacts more visible. Such an approach does not deal adequately with scientific uncertainty or with issues such as irreversibility. Reducing impacts relating to different individuals or groups to an aggregate sum also fails to account for the ethical and distributional aspects of SD.

Where decision makers and affected stakeholders share the same views about what is 'efficient' or 'fair', it may be possible to use a standardized model. But these situations are rare in a SD context. It is more reasonable to embrace the diversity of viewpoints through adoption of a transparently pluralist approach:

If problems are complex and multi-dimensional, why should they be treated as simple?... [I]n public decision situations (and often in private situations as well) there are many decision-makers rather than one and they may differ with respect to values. This means that one has to consider more than one objective function (Söderbaum, 2004d, p. 12)

Political economic person

Söderbaum's work has its roots in institutional or political economy rather than neoclassical economics. It replaces understandings of profit-maximizing firms comprised of 'rational economic men' with those of polyvocal organizations made up of 'political economic persons'.

This approach recognizes that core values vary across organizations (e.g. that socially responsible firms differ from their profit-maximizing counterparts). Furthermore, the particular individuals who make up or engage with organizations may have ideological orientations that are more or less compatible with a particular organization's business ideology (e.g. ethical investors will have different understandings of 'ethical'). Both market and non-market relationships are of importance. One actor may exploit another according to a particular conception of social justice:

objectives and ideas about progress is a matter of debate between actors. A business company may more or less seriously consider non-monetary objectives relating to the environment or specific groups of individuals. At the level of society, more than one ideological orientation is normally considered, suggesting that ideas about efficiency and rationality will also differ ...Those who emphasize environmental values have reasons to criticize the alleged 'rationality' of many decisions in present society (Söderbaum 2004d, p. 8)

An individual or group's decision choice is regarded as rational if it coheres with their ideological orientation. Even in areas of supposed common concern (e.g. fostering efficiency), what is a rational choice for one actor may be viewed as irrational by another.

Positional analysis

Söderbaum argues that democratization requires a move to ideologically open models and multi-dimensional analysis. He proposes a positional approach to decision-modelling and analysis, aimed at 'illuminating' a situation in a way which is as many-sided as possible rather than providing a 'solution' assumed to be correct for all actors. Such an approach:

aims at seeking and sharing relevant information about the impacts of each choice in cooperation with interested parties; at facilitating public dialogue, mutual learning, and participation in the decision process; and at liberating creative thinking... Above all, positional analysis does not hide conflicting interests behind one-dimensional present values, but takes seriously the need in a democracy to illuminate such conflicts, specify the effects of different options on different groups, and ensure dialogue among the concerned groups (Corner House, 1999).

Positional analysis respects the existence of multiple stakeholders with different viewpoints. No consensus is assumed about the way a problem should be framed, the 'correct' principles of valuation, what counts as a 'cost' or 'benefit' and, thus, what amounts to an 'efficient' outcome. The expression and aggregation of different values in a uni-dimensional way is not a priority. Quite the contrary. Actors' willingness to quantify impacts in monetary terms will differ according to their ideological orientation. The relative importance they place on particular impacts will also vary. Business leaders might seek to privilege the economic over social, environmental and cultural impacts; others the reverse. Options and preferences may be influenced by the wider socio-political and insitutional contexts (e.g. legal constraints, perceived rules of the game, knowledge of alternatives).

Söderbaum urges the need for systematic treatment of both monetary and non-monetary aspects. Cautioning against monetary reductionism, he notes that changes in resource positions such as intellectual capital, health and safety, or the environment are relevant as such and not only through monetary valuation (Söderbaum, 1982, p. 393). Non-monetary balance sheets may be designed and changes observed e.g. through a positions and flows approach. Non-monetary impacts can be expressed in quantitative form or presented as visual images e.g. the state of the environment after completion of a project. A focus on democracy points to an important role for the competing narratives and arguments of different stakeholder groups (Söderbaum, 2004d, p. 10). Positional analysis also seeks to deal transparently with scientific uncertainty (e.g. reporting cost-benefit estimates in terms of ranges rather than single numbers).

Rationality is defined hermeneutically involving compatibility with actors' ideological orientation(s) rather than in instrumental terms (e.g. utility maximization). There may be a good fit between the ideological orientation of an actor and a particular alternative, or a mismatch. (Söderbaum, 2001, p. 7). Thus, an individual or group that places a high value on deontological rights might be expected to be more resistant to utilitarian approaches (cf Markovits, 1984). Those concerned with eco-justice (e.g. intra- and inter-generational equity, animal rights) will seek to interrogate the distributional impacts of projects and policies. Discounting may be resisted on the basis that it introduces bias against future generations. Contingent valuation methods based on 'willingness to pay' measures may give rise to concerns about 'ability to pay'. Actors may find - and be able to give expression to - value conflicts between their 'business' and 'weekend' positions (cf O'Dwyer, 2003). Discussion and debate among those with different ideological orientations helps to make value conflicts more transparent.

The idea of positional analysis is to illuminate issues through dialogue and technical studies rather than provide definitive answers. Reaching decisions is not a matter of maximizing an objective function "given from outside" (Söderbaum, 2004d, p. 9). Rather it is about articulating competing ideological orientations which facilitate a search for relevant alternatives. Technical studies - which include a systematic analysis of how both monetary and non-monetary impacts differ between alternatives - support and are supported by participatory activities. This involves dialogue between stakeholders and 'experts' about problems, perceptions and ideas in an interactive learning process. Appropriate ways of organizing this process depend on the type of issue and local context.

Contingency in relation to ideological orientation may be related both to different fact scenarios about the future and value priorities. A specific decision-maker will look for alternatives which best match their ideological orientation, including their attitudes to risks and uncertainties. Through dialogue, decision-makers and affected stakeholders may get closer to or further away from each other (Söderbaum, 2004d, p. 11). Positional analysis thus aims to help actors understand their commonalities and their differences.

Benefits of a positional analysis approach

There is increasing recognition that it is a mistake for corporate decision-makers to ignore the viewpoints of stakeholders (Livesey, 2001). However, even where attention is paid to wider perspectives, this is still often performed within a stakeholder-management framework. In agency theory, for example, non-shareholder constituencies are regarded as 'political costs'.

Positional analysis provides a way to explicitly incorporate the views of different actors on a more equal footing – a many-sided analysis that is underpinned by democratic rather than neo-classical theory. Decisions can be regarded as a matching process between the multidimensional profiles of alternatives and the ideological positions of decisionmakers (Söderbaum, 1987). Differences in perspective are brought to the fore rather than hidden:

Positional analysis... aims at an illumination of the many sides of a decision-situation. The information base should be useful to politicians or other decision makers who differ with respect to values and ideologies [cf decision-makers trying] to impose their image of the problem upon other actors (Söderbaum, 1982, p. 391-392).

It seeks illumination rather than scientific solutions. Compared to traditional CBA, this approach is more transparent, comprehensive and accountable to a wider cross-section of society and thus more in keeping with democratic values (Söderbaum, 2000). It also helps to demonstrate that *all* approaches to decision-making have ideological content (Söderbaum, 1982).

Positional analysis is open ended with respect to its approach to values. The conclusions are contingent in relation to the contested ideologies of stakeholders. Neutral experts who point to optimal solutions are replaced by analysts who admit to the inherently value-laden nature of all academic discourse. Social actors with differing ideological positions are included in the process. This makes individual and groups dialogically accountable to each other and limits the opportunities for knowledge imposition by any particular group. In controversial arenas such as SD, such an approach is more compatible with the norms of democracy (Söderbaum, 1982, p. 399, 2004a,b,c,d).

Through feedback, positional analysis also allows for the monitoring of impacts of selected alternatives and thus an improved information base for reflection and subsequent decisions (Söderbaum, 2004d, p. 9).

Institutional and Social Change

Söderbaum (1992a, 1999a, 2001, 2004b) emphasizes the importance of ideological pluralism and competing schemes of interpretation - e.g. in education, academia, public policy, the mass media - as a condition for new thinking in areas such as SD.

Coming from a social constructionist perspective, he stresses that the future is open-ended - "a matter of political dialogue, negotiations and struggle" (Söderbaum, 2001, p. 2). Interaction and dialogue among actors is a key requirement for learning, reflection and social change. Different sets of actors linked in social networks compete with each other for "ideological hegemony", for example, by introducing and embedding ideas through various institutional arenas (ibid., p. 9).

Ideological pluralism - by stimulating imagination and creativity - plays an important role in the construction of preferences and social change. New frameworks may change actors' understandings. In a sustainability context, for example, ideas of a 'company' and 'organizational performance' may change as result of increased familiarity with competing ideological perspectives via positional analysis. Increasing numbers of stakeholders may extend their interpretations of organizational performance beyond the capital markets and profits for shareholders (Söderbaum, 2000).

Power

Söderbaum raises the difficulty of dealing with power, although this aspect of his work is less developed. He observes that, in addition to ideological preferences, vested interests may explain why actors adopt certain perspectives. Some individuals and groups "are probably very happy with... neoclassical economics because it rationalizes or legitimizes their present modes of thinking and patterns of behavior" (Söderbaum, 1993, p. 394). It is important to be mindful of these power aspects. For example, decision processes may be manipulated by focusing only a few very similar alternatives (Söderbaum, 2004, p. 50). Marginal changes within the scope of a single ideological orientation do nothing to address the wide range of perspectives on SD issues (cf Brown & Fraser, in press).

Söderbaum (1982, p. 396) observes that "some interests are institutionally well-organized with considerable power while others are not". He suggests that difficulties can be counteracted by involving interested parties at early stages of the decision-modelling process. Or by the analyst trying to identify in a technical manner the different interests related to an issue (e.g. drawing attention to viewpoints not represented 'at the table'). Söderbaum's preference is for participatory processes. He highlights the need to guard against those who regard citizens who think for themselves (cf respect the judgments of experts handed down from 'on high') as enemies (Söderbaum, 1992b, p. 299).

We consider the power aspects of Söderbaum's work could be developed drawing on more radical forms of political economy (see Gray, Owen & Adams 1996, pp. 47-50) and the concept of critical pluralism (for our starting thoughts in this area, see Bebbington et al., 2005).

5. Framework for a critical dialogic approach

On the basis of the lessons that can be learned from CBA critiques and Söderbaum's work, we propose the following principles as the basis for a critical dialogic approach to accounting. In Table 1 we also summarize what we consider to be the major characteristics distinguishing monologic and dialogic accounting approaches.

Principles for a critical dialogic approach

Recognize multiple ideological orientations

Dialogic approaches to accounting recognize that people with different values, perspectives and assumptions want to 'account' differently - for different things and in different ways (Morgan, 1988). They seek to enable the expression of different perspectives and to encourage individuals and groups to 'talk' to each other across perspectival borders:

To be useful to the political... process, analysis should be able to sum up the expected effects of a proposed policy on relevant groups and their attitudes towards it (Mustafa 1994, p. 16).

This requires the establishment of a broad stakeholder base, including recognition of those not powerful enough to command a 'seat at the table'.

While those taking a 'business as usual' approach to sustainability might focus on eco-efficiency; a concern for eco-justice will require serious attention to distributional issues (cf the privileging of efficiency as a meta-value in CBA). This might, for example, involve unpacking the class aspects related to OHS risks (Abel, 1985, 1990). Similarly utilitarians, egalitarians, libertarians and liberals might all seek to approach sustainability issues in different ways (Markovits, 1984).

For dialogic literary theorists, a good novel is one that represents "all the social and ideological voices of its era... all the era's languages that have any claim to being significant" (Bakhtin, 1981, p. 411). We suggest that a good dialogic accounting tool should do same.¹⁵

¹⁵ Cf Power (1992, p. 487) suggesting that "the real issue is not that [accounting] rules may be arbitrary; everyone knows this. It is that everyone faces the same rules on equal terms".

Allow people to monetize to extent they are comfortable.

As with the critics of CBA, we suggest that impacts should not be "pressed together" into a single number in a search for an optimal solution meaningful for *all* members of society (Corner House, 1999). Rather we seek illumination of the contested terrain of sustainability - a "more transparent tussle over tough political choices" (ibid.). This recognises that "number assignment" always involves "strong value and reality assumptions" (Churchman 1971, p. 31) and the validity of a plurality of perspectives in societies with democratic traditions.

Dialogic accounting should provide a range of quantitative and qualitative data so individuals and groups can see diverse effects for themselves, and make their own judgments about monetization, incommensurability and the extent to which they are prepared to make trade-offs.

Be open about the subjective and contestable nature of calculations

Social actors should be invited to participate in an open, transparent discussion. This requires intellectual honesty in terms of both the 'hard-factual' and 'inherently contestable' aspects of different accountings (O'Leary, 1985). It also requires actors to face up to subjectivity as an important part of the dialogic process:

subjectivity and predictive inaccuracy are not problems, but elements to promote and engage the process itself. A satisfactory decision at the end... is not the only goal of the process. As a forum in which the public, proponents and regulators deliberate... the creation of discourse around the pertinent issues at stake is also an important result (Wilkins, 2003, p. 402).

Dialogics is based on a social constructionist epistemology. It recognizes that there is nothing 'out there' that comes indelibly-labelled as a cost or a benefit. As humans, we choose what to include in our calculus, whose perspective to take and apply our own value weightings. However, this process always occurs in a socio-political context. Preferences are regarded as endogenous, arising in social exchange and involving debate over ends as well as means.

If actors are serious about dialogic exchanges, they need to be prepared to be transparent about the values and assumptions on which their accountings are based, so that others can challenge and reconstruct them.

While there is a need to recognize that there is no neutral measurement point, it is also important to be wary of opportunistic interpretation. The aim of dialogic accounting is to reflect the complexity of the world, not encourage "blatant propaganda" (O'Leary 1985, p. 100).

Accessibility for non-experts

Stakeholders needs to be able to trust information they are provided with. We suggest that this is best achieved through the development of extended peer community quality assurance processes such as those proposed in post-normal science.

Information should be provided in multi-layered ways - in a form that is accessible to non-specialists and in a technical form necessary for independent validation (Rose-Ackerman, 1988, pp. 358-359).

In monologic approaches, numbers are used - explicitly or implicitly - to exclude people from the political process. Stakeholders require assistance to help them develop the skills to debate with experts. There is also a need to facilitate the development of critically reflective practitioners able to dialogue across a range of disciplinary and ideological perspectives. To this end, experts themselves need to cultivate greater theoretical self-awareness of the values and assumptions underpinning their models. With Söderbaum (2004b), we think that intellectual pluralism safeguards against excessively partial analysis.

Positional analysts should be held accountable if they have not illuminated issues in a multi-perspectival way, although responsibility for decisions still rests with decision-makers (Söderbaum, 2004c, p. 49).

Provide a dialogic toolkit

Multi-perspectival approaches to accounting will require the development of a toolkit of interdisciplinary techniques and tools to facilitate conversation:

Economic analysis has to be undertaken along with other forms of knowledge such as social analysis, cultural analysis, environmental analysis, all expressed in their own idioms. Economic values are not at the top of a hierarchy of values, nor is economic analysis at the top of a hierarchy of knowledges, nor is it first among equals. Different forms of information must make up the knowledge base on which decisions are made... (Corner House, 1999).

The dialogic (re)construction of the world will involve a combination of quantitative, qualitative, narrative and visual methodologies that help to illuminate multiple perspectives. It needs to recognize that numbers are not everyone's first - or preferred - language but also allow forms of border crossing across perspectives.

Supported by effective participatory processes

Democratic participation in the decision-making process is needed to enable people to describe and take account of costs and benefits in their own ways (Anderson, 1988, p. 65).

Lessons learned in participatory contexts both in and outside of accounting suggest a need to involve stakeholders early in the process and to develop procedural rules to establish a more even playing field for the expression of diverse views (see, e.g., Owen et al., 2001; Jones, 1997). Dialogic entitlements - e.g. legislative rights to information and participation - are also important to expand the range of voices that can be heard in organizational and societal discourse.

Dialogic tools are valued more as a basis for generating discussion than for their potential to provide a final determinative calculation:

[A dialogic tool] is not a rule or formula which would make the decision or predetermine the choice for the decisionmaker. Rather, it . . . is a framework and a set of procedures to help organize the available information, display trade-offs, and point out uncertainties... (National Academy of Sciences Report, cited in Bangser, 1982, p. 375).

They help to demonstrate why decisions in complex, controversial and uncertain areas are 'genuinely difficult' (cf Sunstein, 2002).

Pay attention to power dynamics

Attention to the power dynamics inherent in any accounting situation is vital to ensure minority 'others' are not silenced by having their perspectives defined out of technical models. There is a need for approaches that recognize the need for marginalised interests, not just those with vested power, to be registered (Mustafa, 1994, p. 21). Collective action is important given the difficulties individuals *qua* individuals experience in questioning decisions or providing resistance in isolation.

Oppositional analysis might be used to shed light on 'new facts' or deconstruct the analyses of others. According to this approach, statistics become 'weapons' with radical democratic potential:

It seems a tame thing to drop so suddenly from talk of revolutions to talk of statistics. But I believe in statistics just as firmly as I believe in revolutions. And what is more, I believe statistics are good stuff to start a revolution with (Eastman cited in Linder 1994, p. 99).

CBA as a 'gun' has been turned on its users - as a way of highlighting contradictions and generating resistance. Grassroots groups have contested the way CBA values land, forests, fisheries and livelihoods, its reliance on unaccountable experts and its neglect of equity issues:

Technocrats... conducting a CBA... had attempted to commensurate...Yavapai land with other land, and with money. This... ran counter to the Yavapai's sense that their land was sacred and not like other land being offered them... They resisted translation of their concerns into the language of neoclassical economics: "Our way of life will be destroyed. Why don't you just say that?" Making Yavapai organizationally relevant through CBA... proved antithetical to Yavapai self-understanding... In order to gain support for their point that CBA-style thinking was itself a problem, Yavapai activists often employed analogies, asking their interlocutors, for example, "how much money would you accept for your children?" (Corner House, 1999).

They have also sought to 'blow up' contingent valuation methodologies by refusing to measure non-traded goods (e.g. species preservations) in monetary terms or by placing infinite values on them (Sinden, 2004a,b). In some cases, they have employed a concurrent reliance on and distrust of technical and scientific discourse (Tillery, 2003).

While there are a number of enabling aspects of Otherness and of keeping "the Other... in the margins" (Cooper 1992, p. 35-36; Gallhofer 1992, p. 41), anti-reports on their own have limitations from a dialogic perspective (Puxty, 1991). Some combination of insider and outsider forms of engagement arguably provides the most effective form of praxis for those with social change agendas (Bebbington et al., 2005).

Recognize the transformative potential of accounting

Accounting, like law and other social science disciplines, forms:

part of a web of sociopolitical structures that are constitutive - and reconstitutive - of our community... [it] can interact in... complex and subtle ways with public and private understandings, norms, and ideals (Pildes, 1991, p. 937-938).

As such, it participates in the creation of social understandings and the "formation and transformation of selves, communities, practices, and institutions" (Savage, 1996, p. 342-343).

Dialogic accounting aims to raise people's consciousness; to encourage them to become more reflective (at individual, meso and macro levels) and to facilitate better talk across groups with different perspectives. It promotes the idea of discussion, deliberation, mutual understanding and dialectic learning in pluralistic environments rather than proceeding according to a definite, pre-conceived algorithm. It seeks to facilitate horizontal dialogue, involving the exchange and discussion of a range of diverse situated perspectives; a process:

whereby people's unexamined preferences can be scrutinized and... revised, abandoned, or retained with a deeper meaning than existed initially (Galsto, 1994, p. 361).

Accountings are open and bidirectional rather than fixed and unidirectional. This assists in bringing the limiting beliefs and assumptions of *all* actors into consciousness and allows them to contest each other's limit situations. Dialogics thus facilitates reflection on and (re)construction of preferences as actors are exposed to new ideas. Monologic dialogue, by contrast, only contemplates students changing *their* mind.

Dialogics is not about replacing one form of monologism with another. Rao & Pasmore (1989, p. 233) contrast the hermeneutic understanding of the researcher as "interpretive colleague" with the researcher as "hero of social change" approach implicit in much organizational change literature:

Social change becomes a process in which the researcher does something to members of a client system and the interpretive process is vulgarized into the marketing of meanings, a question of 'functionally' managing culture to advance organizational purposes and an issue of proactively 'managing' legitimacy such that organizational members feel committed to the nature and direction of change... In the Hermeneutic viewpoint, the researcher and members of the social system are partners in the project of critical discourse. Expertise and moral advocacy are not the prerogative of the researcher but are equally the rights of members. Accordingly, the researcher and members have dual roles: they are partners in conversation but also contestants in the definition of moral truths. Indeed, the price of partnership is the right to contest moral claims.

Similar critiques have been levelled at the tendency of some critical theorists to engage in knowledge imposition. Arrogantly trying to rescue people from their 'false consciousness' with 'new right answers' amounts to another form of oppression:

If we lose patience with the slow, dialogic exploration of the collective practices in which we are embedded, and leap toward an imperial, imperative style of doing theory, we risk *repeating* within our own theories the very "interpretive violence" that our theories seek to move us beyond (White, 1992, p. 856, emphasis in original).

There are no guarantees that conflicts of interest will be resolved. Indeed, in line with its commitment to democratic values, dialogics may help to surface conflict:

Deliberative rhetoric, then, becomes a tool not for pushing one's own beliefs or for seeking consensus, but rather for "persuading audiences to voice *their* opinions" (Hart 2001, p. 208, emphasis in original).

The aim is not necessarily to seek agreement but rather a richer appreciation of complex issues.

Civil conversations should be unpredictable and take on directions and a momentum of their own (Bloche 1996, p. 297). Dialogic tools should be viewed as reflexive rather than purely technical innovations; "trampolines for constant enquiry" (McAuley, 2003, p. 267).

6. The Sustainable Assessment Model (SAM)

Sustainability technologies have developed alongside the wider sustainability discourse over the last ten years or so. This is an area of widespread perceived need, with the quest for relevant tools ranging from least to most developed nations, through public and private entities, large and small. The range of assessment methods currently available stretches from highly technocratic tools to far less prescriptive participatory methods (for recent reviews, see Leipziger, 2003; Dalal-Clayton & Sadler, 2004, 2005). In this section we outline the SAM as developed in the United Kingdom and modified for use in New Zealand. Experiences in the United Kingdom and New Zealand are then used as the basis for reflecting on the potential of the SAM to democratize accounting technologies.

Structure of UK Sustainability Assessment Model (SAM)

SAM was originally designed by BP in the United Kingdom (in conjunction with the University of Aberdeen and Genesis Oil and Gas Consultants) as a full cost accounting process to evaluate the extent to which infrastructure projects supported SD. The model as used in the oil and gas sector has been described in detail elsewhere (Baxter, Bebbington, Cutteridge & Harvey, 2002; Baxter et al., 2003; Baxter, Bebbington & Cutteridge, 2004; Bebbington & McGregor, 2005). It has also been developed on other United Kingdom projects (energy generation from landfill, forestry, social housing and aquaculture; see Baxter et al., 2003, Bebbington & Macgregor, 2005). SAM has four steps:

- Identifying main controllable activities and project definition
- Identifying project activities' life-cycle and defined boundaries (e.g. in the oil sector, exploration drilling, platform design, installation, production and decommissioning)
- Collecting data for internal and external (resource use, environmental and social) project costs
- Monetizing the activities in each category.

These steps are shown as a process map (Figure 1) and result in a project-specific SAM signature (Figure 2) which indicates changes in economic, environmental and social capital categories resulting from the project. This involves a 'cradle to grave' analysis. Impacts are quantified in physical terms and then monetized using various methods. With oil and gas field exploration, natural resource capital is transformed into economic benefits (for the firm extracting oil and gas and its suppliers) and social benefits (mobility, heating, and products produced from oil and gas).

At the same time, social costs (e.g. the social costs of mobility, including road deaths and congestion costs) and environmental costs (e.g. global warming impacts from combustion of fossil fuel) also occur. SAM seeks to model the changes in these capitals.

Monetization has proved the most difficult and contentious aspect of the process, for both technical and philosophical reasons. Gray (1994) notes that damage to critical natural-capital is irreversible and, therefore, by definition incompatible with sustainability. Some individuals and groups are highly resistant to monetization (cf Herbohn, 2005). They view assigning monetary values to the environment as reductionism at its worst - both artificial and disrespectful. Far from serving sustainability, they fear monetization will be used to justify trade-offs at the expense of the environment (Maunders & Burritt, 1991). To seek to remedy the problem by adding more of the very thing (economic calculative rationality) that caused the problem appears misguided. Similar perspectives are also apparent in the social capital area, for example, occupational safety and health issues (Brown & Butcher, 2005).

SAMs are not intended to produce a definitive answer to be handed down from 'on high', but rather to provide a starting point for discussion and decision-making processes that can vary widely dependent on stakeholder preferences. Bebbington & Gray (2001) suggest that the process of working with an organization to provide an account of sustainability may prove more useful than the account itself. In this sense, SAM is seen as a mechanism to explore the possibilities and challenges of sustainability, that is, it possesses dialogic and transformative potential (cf Heiskanen, 2000).

SAM identifies and measures the impacts of the project. These are examined under four headings: financial, resource use, environmental and social impacts. Data is drawn from specific project activities (e.g. hours worked, numbers employed, barrels of oil produced, volumes of water used, materials used, waste produced, and financial performance estimates). This is either used directly in the model or indirectly to impute the economic, resource use, environmental or social impacts. Again, some argue that this monetization process is symptomatic of the neo-classical approach that has been a root cause of the sustainability crisis. As with CBA, there is the difficulty (we would argue impossibility) of obtaining a single uncontested figure. The main approaches to monetization (see, e.g., Bebbington, Gray, Hibbitt & Kirk, 2001, pp. 63-67) may yield significantly different measures of externalities. To date, damage cost estimates have been used (in the main) in SAM to monetize externalities in the environmental category. The main categories for SAM are:

- **Financial flows** The economic benefits that accrue from the project to the economic entity and its stakeholders (e.g. shareholders, employees, suppliers, Government).
- **Resource usages** This category is designed to capture the values of resources used to the extent that payments made (and captured under economic flows) do not fully account for their use (Ekins, 2001). Estimating environmental change arising from resource use based on economic rent calculations is possible (e.g. net price approach, present value approach, or user cost methods) but remains an area of contention between neo-classical and ecological economics perspectives (Ekins, Simon, Deutsch, Folke & De Groot, 2003).
- **Environmental impacts** These arise primarily from environmental damage incurred through economic activities and are categorised as:
 - damage cost estimates from emissions;

- depreciation of properties arising from noise, odour and visual nuisance;
 - land area unavailable for use due to project; and
 - damage costs that arise from wastes created.
- **Social impacts** This captures both positive and negative aspects of:
 - Impact of indirect employment created by the project offset by deaths and accidents arising during employment above the entity paid costs;
 - Contributions to creating a socially sustainable society; and
 - Perceived benefits of products or other outputs of the project.

To determine the contribution to a socially sustainable society, the UK SAM drew on the UK Government's Strategy on Sustainable Development (DETR, 1999), though since superseded (DEFRA, 2005) with headline indicators identified in SAM for explicit social orientations not captured elsewhere in SAM.

Social impact is often highly dependent on the products, and for petroleum was taken as mobility, heating, and petrochemical-based products with values derived for mobility and the principles applied to all products. Mobility costs are reflected in terms of resource use and pollution impact from combusting oil and gas and its economic value by reference to the price of crude. The value that society places on mobility in excess of crude price must be captured including adverse consequences. Social impacts therefore combine positive factors relating to the value assigned to mobility countered by a monetized impact of congestion and road accidents.

These social elements involve the least certain methods for estimating cost and benefit, yet it is these social issues that dominate public policy discussions on sustainability. The transformative process of a project is described by the signature which, in the case shown, results in financial and social benefits obtained at the expense of environmental and resource usage.

SAM, as presented, offers a useful way of understanding project impacts and it appears to capture tacit knowledge relating to SD profiles though this knowledge has rarely been made explicit. While SAM separates the modelling of SD impacts and an evaluation of a project's contribution to sustainability, these two elements are not entirely separable. Decisions about what elements to account for require assumptions about what is believed to be sustainable. The extent to which the capital sub-categories can be combined depends on beliefs concerning the substitutability of capitals (e.g. natural capital against human capital). There is a spectrum of views on this, with proponents of 'weak' sustainability advocating a far higher level of substitutability than proponents of 'strong' forms. It is usually assumed that critical capital cannot be substituted (Ekins et al., 2003). In this case, a project could not be deemed to be sustainable if it resulted in loss of critical capital. However, it is not always self-evident what critical capital is (e.g. whether a stable climatic system is critical natural capital or what is critical social capital). This highlights Söderbaum's arguments about the importance of ideological orientation, discussed in Section 4.

SAM also facilitates debate around permitting substitution between elements within a capital sub-category but not to allow substitution between capital sub-categories. In this case a project could be declared sustainable if every sub-category had a net positive impact and if there was no loss in critical capital (however defined). Under such a decision rule one could tolerate, for example, road deaths, given the benefits that arise from mobility. Such a principle could be extended to argue that no negative moves in capital could be accepted if a project was to be described as a sustainable project. The application of substitution criteria is a value-based decision that can be

undertaken after modelling flows in the signature form (but requires careful scoping to ensure all potentially relevant variables are identified).

SAM also considers possible remediation and restoration options for a sustainable project (e.g. air emission impacts of energy usage could be mitigated by planting trees to offset carbon emissions). In this case the SAM signature would change in that a negative impact would be reduced. Overall the economic bar on the signature would remain the same with the split of the bar being affected by any remediation activities that involved the organization outlaying money. Further discussion on all these aspects is given by Bebbington (in press).

Dialogic potential to promote stakeholder understanding: SAM in New Zealand

The model has been used in New Zealand with pilot studies for Christchurch City Council (CCC) which provides services to over 300,000 people in New Zealand's largest South Island city. In 2000, CCC announced they wanted Christchurch to be "an international leader and showcase of sustainability" and had initiatives emerging based on this philosophy (Park, 2000). Local government in New Zealand must promote the social, economic, environmental and cultural wellbeing of their communities and report "identified effects that any activity within the group of activities has had on the social, economic, environmental, or cultural well-being of the community" (Local Government Act 2002, Schedule 10.3.15D). Case studies of SAMs included a resource centre, organic waste composting, community gardens, long-term transport strategy, and social housing stock (Cavanagh, Lennox & Frame, in press). Discussions on SAM have also taken place with the Federation of Māori Authorities, Te Runanga o Ngai Tahu and with Housing New Zealand. Earlier presentations with a range of stakeholders on SAM were discussed elsewhere (Bebbington & Frame, 2003). To date, progress has been mixed. While there is considerable interest in SAM, there are two distinct areas of concern:

- process issues are perceived as less relevant than construction of the SAM
- scepticism about whether the time investment required to understand SD is sufficiently beneficial (see also Frame & Taylor, 2005).

Both concerns stem from short-term, positivist approaches to accounting technologies rather than long-term social constructionist approaches. We have also encountered expectations and concerns that SAM may be used as window-dressing to legitimize predetermined answers.

By taking a ratio of the various capitals, it is possible to convert the signature data into a single indicator, termed the SAM_i, to measure the extent to which the project is 'sustainable' (Bebbington & Macgregor, 2005). In the literature and in the New Zealand studies, this has not been viewed as helpful with the overall concept of such indicators described as trivialising and unhelpful in practice. A single indicator can arguably never capture the diversity of values and perspectives present in any sustainability issue (Luks, 1999, p. 714).

Dalal-Clayton & Sadler (2005, p. 29) view the quest for a single indicator of SD as a laudable though impossible goal, but one that could have its place:

High-level decision-makers—government ministers, foundation executives, heads of corporations—routinely ask for a small number of indices that are easy to understand and use in decision-making. Many concerned with sustainable development voice their desire for a single indicator to compete with the enormous political power of the Gross Domestic Product, a single number that provides information about the total market value of production and services in a country as a single number.

But many are skeptical that a single number could assess something as complex as sustainable development. Most indicator experts believe that searching for a single indicator of sustainable development is something like the quest for the unicorn. It is a myth to think that one number—even one that vastly improved on the GDP as a proxy for overall national well-being—could have any real functional value as a policy tool. But many also acknowledge that the attempt to create an index of sustainable development may be useful because it would force a concerted effort to present the complexity of sustainable development more simply. Even a modestly successful effort by presenting a handful of aggregated indices could introduce a generation of policy and decision-makers to the goals of sustainable development.

Dalal-Clayton & Sadler (2005, p. 150), review the use of SAM and state that it "is likely to be limited by the availability of quantitative data".

Democratizing accounting technology: political and cultural considerations

An appreciation of different perspectives on SD - even among individuals with seemingly similar goals - came early to those involved in the design of the UK SAM:

When the three parties to the collaboration sat down together and we tried to get a list of what we believed the most important aspects of sustainable development were about we ended up with three entirely separate and virtually mutually exclusive lists... It was an indication that somehow we had to look for something that did not just encompass our own values and priorities... The framework that we have chosen, for good or bad, is the UK government strategy for sustainable development. Now that framework has limitations but what it does represent is some view from the UK Government about what it believes the social priorities are with regard to to sustainable development (Bebbington, 2001, p. 60).

In SAM NZ (and in related work on scenarios), we have encouraged different individuals and groups to talk openly about what sustainability means to them and to make their value systems explicit. By comparing how different stakeholders explain and illustrate their perspectives, we have sought to promote critical self-reflection and ongoing discussion and interaction; to help actors "to more clearly articulate who 'stands for' what kind of sustainability" (Bebbington, Gray & Thomson, 1994, p. 4). Our aim has been to allow groups with strongly felt value commitments to express themselves more authentically rather than assuming they can enter some kind of neutral discourse. We see this as crucial in facilitating dialogic learning and interaction in polyvocal environments.

We also aim to allow for more explicit incorporation of qualitative assessments, and distributive impacts. The UK SAM provides for an 'elements checklist' and we are exploring ways of expanding this along the lines of Söderbaum's qualitative balance sheet. Other possibilities being investigated include non-monetary quantifications in terms of stocks and flows models (e.g. in OSH and other employee-related areas). In all this, there is recognition of the need to be transparent about uncertainties, value judgements, assumptions and calculation methods. We are, e.g., exploring the application of the Numeral Unit Spread Assessment Pedigree (NUSAP) as a way of reporting uncertainties (van der Sluijs, Craye, Funtowicz, Kloprogge, Ravetz, & Risbey, 2005). This can be used to assess not only the more conventional aspects of scientific uncertainty but also social dimensions, such as controversy, problem framing, value-laden assumptions and stakeholder views.

We also envisage groups with different ideological orientations constructing their own SAMs. Separate SAMs rather than synthesis into a 'unified' account leaves groups with the ability to exchange SAMs as a way of explaining and justifying different courses of action and allowing stakeholders to interrogate each others' ways of knowing. We see this as important to protect against monologism and to encourage managers to move beyond eco-modernist 'business as usual' approaches.

While SAM is contributing to increased stakeholder dialogue, the extent to which it is a genuinely democratizing accounting technology is much less certain. One concern with implementation is the extent to which entities are willing to devote time and energy into the lengthy processes involved in approaches that require more than cursory forms of participation. This is related back to short-term interests about opportunity costs and a lack of incentives to pursue sustainability within management structures. An observed stumbling block has been openness about values and an implicit awareness of the inherently political nature of undertaking SAMs. In some cases this is perceived by stakeholders as inhibiting their involvement and can best be summarized as a conflict between *homo oeconomicus* and *homo politicus* as described by Faber, Petersen & Schiller (2002). Strong tensions have also emerged between those working with SAM from a distinct 'positivist/reductionist' perspective and those more comfortable with a clear 'social constructionist' *modus operandi*. In our view, the value of SAM is only fully realized by embracing a social constructionist model as discussed in earlier sections.

Of particular relevance in New Zealand is the possibility of SAM being used to facilitate dialogue over bicultural issues arising from the Treaty of Waitangi, the contested agreement between European colonialist authorities and indigenous Māori (Belich, 1996, 2001). Such issues could be considered in terms of the flow of cultural capital (cf the UK model, where these were treated as iconic items outside the monetized values of capital that make up the current set of capitals). As such they could be incorporated in the social leg of SAM, developed as a separate leg or appear as 'bubble' items on the outside of the signature.¹⁶ In discussion with Māori groups, it has been suggested that SAM could enable different decision-rules to be applied to specific situations (e.g. weak/strong sustainability; or European/Māori epistemologies).

Māori traditions and practice illustrate a model of accountability characterized by public discussion; more of a nexus than a hierarchical tree as evident in the practice of the *hui* (gathering for discussion) and the operation of the *marae* (local meeting house). Jacobs (2000) suggests that concepts of accountability are strongly linked to customs, organizational structures (particularly *hapu*, and *iwi*) and principles of leadership in Māori society. He notes that:

Gallhofer et al. (1996) claim that these structures and customs lead to a different model of accountability placing a stronger emphasis on concepts of collective accountability rather than the individual concepts of accountability which characterise Western thinking. Gallhofer et al. (1996) also maintain that the Māori cultural values promote a far broader accountability perspective, embracing a holistic concern for nature and the environment. However, this holistic concern is a two-way process, being concerned with accounting *to* the environment just as much as accounting *for* the environment (ibid., p. 376, emphasis in original).

¹⁶ The notion of 'bubbles' could itself be seen as trivializing, and we are currently rethinking ways to incorporate systematic qualitative data as part of the SAM. This aspect is particularly important if stakeholders are to be provided with more options in terms of their willingness to monetize.

Leading on from this, is the possibility of SAM contributing to cross-cultural issues including:

- Creating new visibilities e.g. SAM might contribute an assessment of the contribution of *not* removing timber, i.e., monetization of the national benefit of 'idle' resources (cf Herbohn, 2005).
- Resource allocation and distribution e.g. reporting back through *iwi* (tribal) structures to *hapu* (community). Decision-makers could be required to account for the cultural impact of these decisions; not just the economic benefits.
- Sensitisation to cultural assumptions e.g. 'high value' issues to Māori but not to Pakeha (European), different perspectives within cultural groups.
- Exposing inconsistencies in approach e.g. dominant cultures extracting economic value from resources then later wishing to 'preserve' them.
- Articulation of power locations by exposing cultural assumptions dominating particular decisions.

The possibility that SAM could contribute to sustainability in this way and to wider issues of cross-cultural resource use is a particularly profound one in the New Zealand context as, inter alia, inter-generational approaches and stewardship of natural resources are significant components of Māori culture and distinct points of difference when operating in a European discourse (Loomis, 2000; Durie, 1988, 2000). If SAM were used in this way then it would be accounting through a dialogic lens for issues directed more to *homo politicus*. As such this could expose greater understanding of why engagement with sustainability issues in contemporary decision-making is not achieving greater traction.

Other democratizing accounting tools

We view SAM as one possible approach to democratizing accounting technology - as part of a broader dialogic toolkit. Scenarios of future states are also being used to facilitate more informed discussions about sustainability issues (Frame, Molisa, Taylor, Toia & Wong, 2005) and these are also posited as examples of dialogic accounting processes. Other examples include exploration of the 'good faith bargaining' concept in New Zealand labour relations and adaptations of triple bottom line reporting initiatives (Davenport & Brown, 2002; Brown & Butcher, 2005). We are also exploring ideological orientations through the use of narrative and visual methodologies.

In line with the critical pluralist ethos, we would encourage individuals and groups to use and adapt SAM together with other dialogic tools across a wide variety of arenas and institutions, pursuing both co-operative and oppositionary forms of talk as they see fit (Bebbington et al., 2005).

7. Limitations of positional accounting and of SAM as a dialogic tool

SAM has considerable dialogic potential, as an accounting tool developed from an explicitly social constructionist epistemological base. SAM's developers are transparent about the contestable nature of accounting calculations. They openly recognize that different individuals or groups have different ideological orientations that affect their views about how to judge whether a project is sustainable. As outlined in Section 5, we consider that SAM as part of a broader set of participatory tools can:

- encourage individuals and groups to critically reflect on the '(un)sustainability' of organizational practices;
- help social actors recognize the socially constructed nature of their understandings;
- expose the 'hidden commitments' (values and assumptions) of traditional decision-making models;
- promote rational decision-making (in a means-ends sense within a particular value perspective and hermeneutically across different value perspectives);
- facilitate stakeholder dialogue and accountability (e.g. by providing new measures of organizational performance, requiring decision-makers to be more transparent about the rationales for their decisions); and
- help to make decision-making more open and transparent and guard against the imposition of a new 'hidden curriculum' (Thomson & Bebbington, in press).

It can facilitate analysis of SD issues at various levels - from the micro level of individual subject positions to meso and, possibly, macro and global levels. It can also accommodate different time scales (short, medium, long-term, inter-generational). It is both future oriented and also useful for ex post evaluation and can be applied to explore SD issues across a range of entities (e.g. products, species, eco-systems).

However we also recognize that there are a number of barriers to be overcome in order for the SAM to be developed into an effective dialogic tool. These include:

- Technical barriers and implementation issues. There will be difficulties in obtaining data to provide a 'full' account of SD impacts. As discussed in Section 3, scientific uncertainty complicates valuation methodology and risk assessments, exacerbated by the need to factor in ideological considerations (including issues of conscious and unconscious bias). There is much to learn about the ways that 'experts as facilitators' can most effectively present information (e.g. of decision alternatives) so as to promote dialogic interaction and learning. Positional analysis may thus require significant investments of time and resources, especially in the early stages. However, as with the establishment of any other area, we expect these would dissipate over time.
- Socio-political barriers. Experiments with new accounting models typically rely heavily on the advocacy of key individuals (Bebbington, 1998). Social and environmental accounting initiatives have often met with resistance from both managers and the accounting profession (Hopwood, 1985, Bebbington & Gray, 2001; Larrinaga-Gonzalez & Bebbington, 2001; Gray,

2004; Herbohn, 2005; Birkin, Edwards & Woodward, 2005). This is consistent with feedback in other disciplines where there are concerns that information on sustainability impacts can cause 'trouble' for managers and lead to increased stakeholder demands (Livesey, 2001; Abel, 1985). Decision-makers also often object to participatory approaches on the basis that they are unduly time-consuming and costly (Jones, 1997).¹⁷ They have fiercely resisted dialogic entitlements in the form of legislated information and participatory rights (e.g. see Brown, 1997 in the labour context). By moving beyond stakeholders bound by 'business as usual' constraints - e.g. engaging social movements - we hope to stimulate broader interest in initiatives such as SAM. However, we appreciate that this brings difficulties of its own.

New accountings are not enough on their own. Providing new 'facts' does not necessarily allow users to effectively respond; mere possession of information is of limited use (Carle, 1988). Some stakeholders, even if they are interested in dialogic accounting in principle, will find it difficult to get listened to (see, e.g., Nelkin & Brown, 1984 on workers' sense of political powerlessness). Voluntarist initiatives rely on management being prepared to permit 'voice'. Knowledge and power differentials mean there is significant potential for the managerialist capture of SAM. SAMs must be linked with the ability to act upon them. There is a need to ensure affected stakeholders are not excluded (or that they can respond via the use of 'silent' and 'anti-reports' - Gray, 1997; Dey, 2003; Bebbington et al., 2005). Subaltern groups will need assistance to ensure they are in a position to 'challenge the figures'. Otherwise there is a risk that SAM will become 'just another form of mystification'. Resistance to multiplicity and dialogic accountability is likely to come from those seeking to determine 'right answers' and impose them on others (cf Cooper, 1992). Positional analysis requires a willingness to engage in openly normative analyses and for actors to be transparent about their 'situatedness'. Some may be reluctant to admit that they have 'ideological orientations'.¹⁸ If engagement is not sufficiently plural, there is the danger that the participatory processes will be dominated by a relatively narrow range of interests (Gillette & Krier, 1990; Cupps, 1977). A focus on communities and 'local values' can also open the way for oppression of minorities (Corner House, 1999).

Given the newness of dialogic approaches, there is also a need for people to have their imaginations stimulated e.g. in terms of what a sustainable society and new forms of accounting might look like (Gray, 2002). Assuming demand for dialogic accounting is problematic. Thomson & Bebbington (in press, p. 17), for example, note that the lack of an active and reflective readership is a problem and that stakeholders may need education about the value of social and environmental reports. Even where stakeholders are politically aware (e.g. Herbohn, 2005), they may not appreciate the potential for more ideologically sensitive accountings. Policymakers and others trained in technocratic paradigms are still likely to expect definitive answers.

¹⁷ Jones (1997, p. 30) observes that whether participation contributes to or detracts from 'efficient' decision-making is highly context specific. She notes that focusing narrowly on time or costs may obscure the hidden costs of failing to involve the public. While it may be tempting to treat participation lightly on the basis that citizens appear quiet or apathetic in the proposal phases, it does not follow that they will not retaliate against decisions at the implementation stage (ibid., p. 22).

¹⁸ This is particularly so given the pejorative sense in which the term 'ideology' has often been used. Herbohn's (2005) study suggests that groups such as conservationists and NGOs might be more transparent about the 'value loaded' nature of their positions than managerial groups.

We are currently engaged in a variety of work aimed at dealing with these barriers. This includes the use of scenarios and futures work (for the purposes of '(en)visioning' future worlds - see Frame et al., 2005), identifying and documenting different philosophical frames and their 'real world' implications for assessing SD impacts (Brown & Fraser, in press) and theorizing academic-practitioner engagements (Bebbington et al., 2005). We are also looking closely at earlier experiments with industrial and economic democracy for lessons about designing effective participatory approaches. We are also conscious of the importance of pursuing inter-disciplinary alliances and strategies that help alternative accountings to flourish (Corner House, 1999). Thus this paper should be seen very firmly as a report on part of a wider 'work in progress'.

8. Concluding comments

While sustainability issues have highlighted the need for the democratization of accounting technologies, practical developments to date have been less than encouraging (Bebbington & Gray, 2001; Herbohn, 2005). This paper has focused largely on the speculative use of the SAM in a pluralistic setting. While such 'imaginings' are an important first step in any new form of accounting (Gray, 2002), the application of SAM in actual settings still needs to be examined more thoroughly. We are currently engaged in projects exploring the SAM's potential in a wide variety of polyvocal contexts, including local government, labour relations and multi-cultural deliberations. Preliminary results suggest that SAM does help social actors to engage in reflective dialogue about complex issues surrounding sustainability and that it helps them to think about issues in different ways. This work is being dovetailed with related work developing other dialogic tools (e.g. scenarios and futures work), outlining competing philosophical perspectives in social and environmental accounting and theorizing academic-practitioner engagements. It also builds on earlier work by Thomson & Bebbington (2004, in press) on dialogic education and by Brown on the development of dialogic institutions in the employment arena (see, e.g., Brown, 1997, 2000; Davenport & Brown, 2002). Collectively, we hope this work will help to provide practical assistance to those interested in promoting more open, critical and participatory forms of accounting that lead to a more informed and engaged citizenry.

Table 1: Monologic and Dialogic Approaches to Accounting

	Monologic (e.g. CBA)	Dialogic (e.g. SAM)
Epistemological Assumptions	Positivist - knowledge is objective and value-free	Social constructionist - knowledge is situated and value-laden
Research Approach	Dominated by neo-classical economics - ideologically closed and individualistic	Interdisciplinary - ideologically open and holistic
View of Human Beings	Rational economic man – self-interested utility maximizers – focus on individuals as consumers	Political economic person – focus on individuals and collectivities as actors with many roles and relations and guided by ideological orientation ¹⁹

¹⁹ See Söderbaum (1993, 1999a, 2000).

View of Organizations	Focus on profit-maximizing firms – shareholder centric.	Political economic organizations – polyvocal. Many actors have stake in policies and activities of firm (e.g. shareholders, employees, customers, suppliers, local communities). Conflicts and convergences exist within and between different stakeholder categories.
Actors' goals and preferences	Taken as exogenous and given	Endogenous - shaped and negotiated through social interaction
Social Relations	Focus on impersonal market relationships	Focus on individuals as citizens and actors in democratic society – members of various networks - markets part of politics
Institutional Frameworks	Strong separation of public and private	Public-private boundaries less clearcut – emphasis on importance of institutional pluralism and dialogue
Analytical Approach	Ideologically closed models (e.g. CBA) – typically formulated in mathematical terms – fixed valuation rules. Analyst tries to find 'optimal' alternative (Söderbaum 2004d)	Ideologically open (e.g. positional analysis) - no-one 'best solution' – responsive to perspective/evaluative criteria of stakeholders
Level of Analysis	Highly aggregated, one-dimensional	Disaggregated, multi-dimensional and open-ended
Disciplinary Approach	Single discipline, underpinned by neo-classical economics, privileges technical experts	Inter-, multi- and transdisciplinary; polyvocal experts, lay input
Rationality	Technical-instrumental - emphasizes successful prediction and agreement over ends	Hermeneutic-communicative - debate over means and ends
Information Sets	Well-defined	Flexible - depend on social, political, economic and cultural context
Quality Assurance Processes	Closed system - certified disciplinary experts, professional capture	Extended peer communities - transdisciplinary, multi-paradigmatic, stakeholder input
Purpose	Technical answers to pre-given goals	Medium of reflection, discussion, debate and dialogue, participatory democracy
Role of Experts	Provide scientific knowledge to decision-makers - methodological monism - reluctant to admit academic controversy	Facilitate debate/dialogue among stakeholders - wide-ranging deliberation - recognises plurality of expert knowledges - open about uncertainty and ambiguity - idea of 'one right answer' regarded with skepticism and as incompatible with democracy.
Values and Ethics	Homogenizing - presupposed - cultural assimilation	Heterogeneous - recognizes diversity and pluralism

Figure 1: SAM Elements (from Baxter et al 2003)

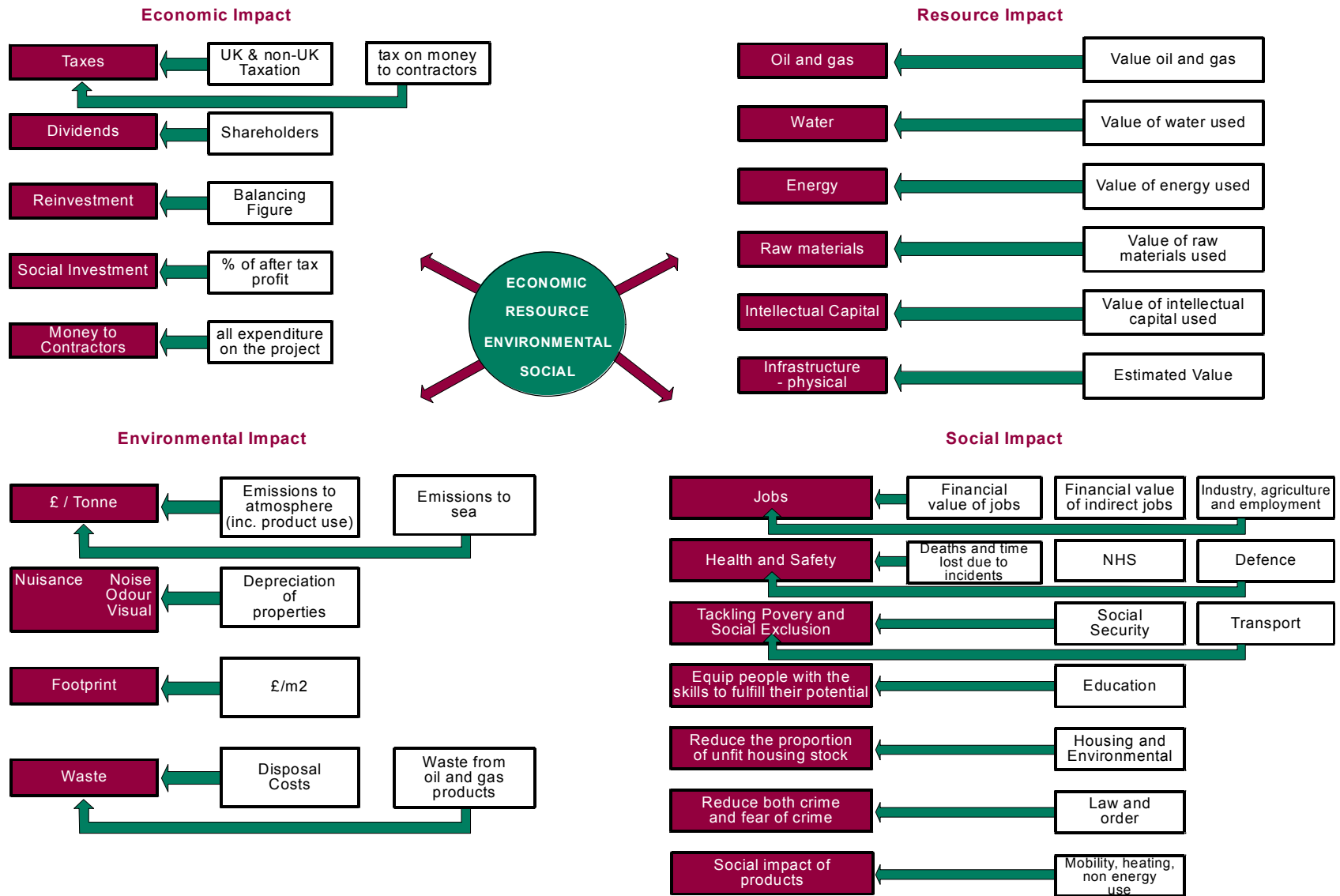
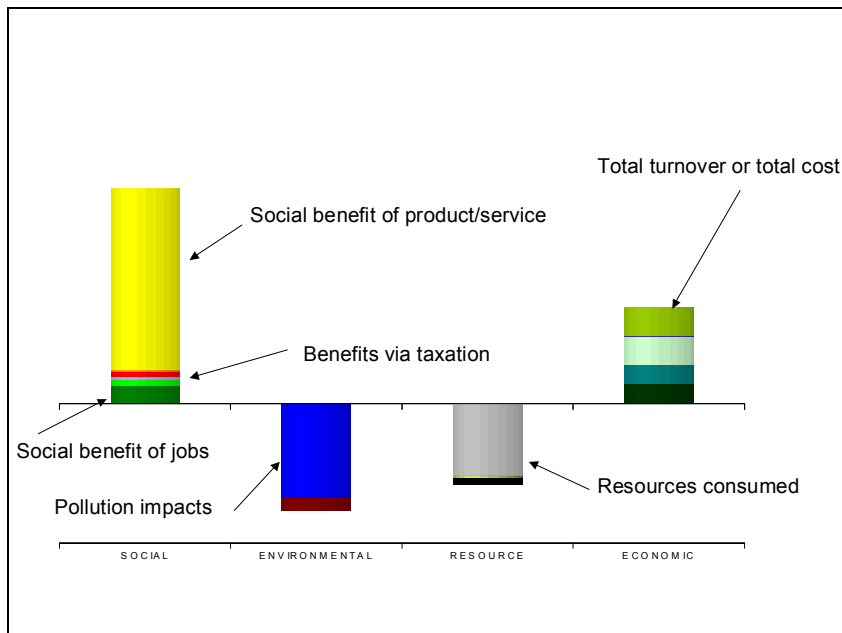


Figure 2: Components of SAM signature



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