

# **Toward a Methodological Critique of Sustainable Development**

**Merle Jacob, Doctoral Candidate  
University of Gothenberg, Sweden**

A Summary and Critical Review Prepared by:

Annie R. Pearce

School of Civil & Environmental Engineering  
Georgia Institute of Technology

**Objective of the Paper:** “...to visualize sustainable development (SD) as a conceptual framework for the development process.”

**Mindset:** to understand Jacob’s criteria for analyzing conceptual frameworks, and to analyze his criticisms of Brundtland sustainable development.

**Principal Points:** see outline to follow...

**Message:** The author is trying to demonstrate that sustainable development as described in the Brundtland report has some methodological flaws. He uses various examples from the report to demonstrate those flaws, and suggests ways that the concept of sustainable development could be improved by attempting to fit it more closely to the conceptual framework presented, and by examining the hardcore or set of “givens” which underlie the propositions. I find the analysis to be quite convincing, and will be interested to see the rest of this ongoing study as it is completed. I agree that Brundtland sustainability has some pretty serious flaws, among them the idea that growth is needed to achieve sustainability. I also think the theoretical framework presented in this paper is a useful model for creating new prescriptive models of sustainability (class discussion).

**Potential Improvements:** I think that overall the paper is rather unreadable unless you’re a philosopher. Readability could be greatly improved by providing examples along with the definitions of basic components of the theoretical framework (i.e., hardcore, processors, etc.). While the author does a pretty good job in analyzing the Brundtland concept of growth, his second major example (the distribution of waste from industrialized to developing countries) is quite weak in comparison. Stan Carpenter called this example a “straw man,” referring to the fact that its flaws are blatantly obvious compared to the more rigorous examples in the paper. Secondly, it’s not clear where the theoretical framework is coming from, either. I’d like to either see better citation of references, or else a more in-depth discussion of the framework itself. Finally, the flow of the paper from one level of example to another is quite poor. It’s not clear how the paper is meant to be organized - the transition from examples of inconsistencies to implications for policy research is especially weak.

**Originality of Work:** Good - Jacob provides a good look at some of the underlying beliefs which lead to the seemingly contradictory propositions of the Brundtland report. While other authors have identified some of the same contradictions, as far as I've read no one has traced them back to the fundamental "givens" of the whole WCED committee.

**Overall Impression of Work:** Hard to digest, but a worthwhile article to wade through. Jacob presents a good theoretical framework against which to judge somewhat nebulous but nonetheless popular ideas such as sustainable development, and his criticisms of SD with respect to the framework seem to be quite well-founded. I hope the references he cites provide a more thorough description of the theoretical framework, so that I can get a better idea of how to use it in my own work.

## I. Background

- A. Two perspectives toward policy:
  - 1. No change until the evidence is clearer
  - 2. Change now or lose the opportunity to do so
- B. What changes are being proposed?
  - 1. Technoeconomic utility -> sustainability
  - 2. Sustainability: "Nature" should provide the norms for development
  - 3. Atomistic reductionism -> connectivism (web) between:
    - a. biosphere
    - b. noosphere (sociosphere + technosphere)
- C. Basic premise: if we can understand how the noosphere interacts with the biosphere, we can use that understanding to enhance human development through respect for and management of biogeochemical cycles.
- D. Frames of reference for sustainability:
  - 1. Two general frames:
    - a. Anthropocentrism (mainstream)
    - b. Non-anthropocentrism (e.g., deep ecology)
  - 2. Which frame of reference you choose impacts your views regarding
    - a. Environmental ethics
    - b. Socioeconomic development

## II. The Theoretical Framework

- A. Two main components:
  - 1. Hardcore: guides the generation, interpretation and communication of knowledge within the framework
    - a. Metaphysical ethic for morally interpreting reality

- b. Normative propositions which provide practical guidelines
    - c. Validity domain: area where framework is known to apply
  - 2. Processors:
    - a. Mechanisms used to solve problems set by hardcore
    - b. Three classes:
      - (1) Predictive
      - (2) Explanatory
      - (3) Descriptive
    - c. Two processor states:
      - (1) Static: causal relationships among elements are unchanging
      - (2) Dynamic: causal relationships change with time, etc.
    - d. A successful processor must:
      - (1) be able to recognize and eliminate undesirable input features
      - (2) generate outputs which meet the hardcore's normative criteria
- B. Metatheoretical criteria for success of the framework:
  - 1. Problem is clearly formulated within the framework
    - a. Everyone must agree on basic definitions
    - b. Ambiguity makes it tough to select the correct processor
  - 2. Base concepts must have consistent meaning over space and time
    - a. Good definitions of each concept and construct
    - b. Clearly stated boundaries for the validity domain
- C. Rules for creating definitions:
  - 1. Definitions should be stated positively and should not be circular
  - 2. Constructs/concepts should be defined objectively and operationally
  - 3. Definitions should not be factual propositions; should be empirically irrefutable
- D. Potential errors in processor reasoning:
  - 1. Preference for the familiar
  - 2. Incompleteness due to omission or to amassing only evidence which supports initial hypothesis and ignoring evidence which refutes it
  - 3. Use of logically unrelated arguments
  - 4. Oversimplification
  - 5. Lack of controls for confounding factors
  - 6. Imperfect analogies

### III. The Meaning of [Brundtland] Sustainable Development

- A. WCED Definition: "a process of change in which the exploitation of resources,

the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.”

B. Theoretical Framework of Sustainability:

1. Hardcore:

a. Metaphysical ethic:

- (1) Old: maximize present utility
- (2) New (SD): maximize continuity of system over time

b. Normative propositions:

- (1) Progress in economic and social development should enhance, not degrade, the resource base
- (2) Interventions designed to meet (1) should not compromise the ability of future generations to meet their own needs

c. Operational objectives:

- (1) Reviving growth
- (2) Changing the quality of growth
- (3) Meeting essential needs for jobs, energy, water, and sanitation
- (4) Ensuring a sustainable level of population
- (5) Conserving and enhancing the resource base
- (6) Reorienting technology and managing risk
- (7) Merging the environment and economics in decision making
- (8) Reorienting international economic relations
- (9) Making development more participatory

2. Processors: see examples in section IV.

C. Critiques of the WCED definition:

1. It's operational, but the operations themselves are undefined, e.g.,
  - a. “more than just growth—it is about different growth”
  - b. lack of definitions for terms such as participation, conservation, etc.
2. Multiple interpretations are permitted
3. Fails to provide a clear demarcation between itself and the conventional development that it is intended to replace
4. Examples:
  - a. Objective (9): Making development more participatory
    - (1) What exactly is meant by “participatory”?
    - (2) What is the linkage between participation and SD, anyway?
    - (3) What should be the scope of participation?

- (4) How to compare cross-national levels of participation?
- (5) An operational definition is needed...
- b. Normative proposition 2: don't compromise future generations...
  - (1) Up to what point should a high weighting be accorded to adverse environmental impacts?
  - (2) Predictive processors require a well-developed information base (which we don't have for environmental complexity)
  - (3) Everything must be rationalized in terms of its benefits to humans

IV. Some Examples of Inconsistency in [Brundtland] Sustainable Development  
(Case 1: Growth as a Solution to Environmental Degradation)

A. The Brundtland argument:

- 1. Poverty is responsible for environmental degradation because “those who are poor and hungry will often destroy their immediate environment to survive.”
- 2. Therefore, to eliminate poverty, the solution is growth...

B. Problems:

- 1. Growth as a solution is in direct conflict with other parts of the report which proposes that many growth-related activities are harmful in industrialized countries, and stand to be even more so in developing countries who may not have the technology or economic resources to protect the environment.
- 2. Growth does not necessarily result in evenly-distributed wealth
- 3. Thirty years of empirical evidence has shown the growth-first hypothesis to be untenable
- 4. The growth-first approach directly conflicts with the assertions of some WCED participants, who claim that without restoring human rights and removing the elite from power in developing countries, any resulting wealth will not be redistributed.

C. Reduced to its essence, the Brundtland statement means: “although growth will not reduce poverty, it is important to pursue growth anyway.” (Jacob)

D. Reason: the growth-first hypothesis is one of the fundamental normative propositions of SD.

E. To force the current framework to apply, you have to either:

- 1. keep adjusting the hypothesis and supporting logic
- 2. ignore critical evidence
- 3. drastically limit the validity domain (rule out most developing nations)

- F. Suggestions:
1. Replace flawed assumptions (e.g., growth at grassroots rather than national level)
  2. Redefine economic growth to mean an improvement in human welfare rather than increasing production or consumption (almost entirely new framework)
- V. Implications for Policy Research  
(Case 2: Use of “Low Quality” Processors for Implementing SD)
- A. Proposed Solution (World Bank): Ship wastes from heavily populated countries where people have long lifespans (developed countries) to countries where population is small and people have shorter lifespans (generally, developing countries).
- B. Rationale:
1. People in developing countries can take on these wastes to earn income from developed countries who need a sink for their wastes
  2. People in developing countries have a shorter lifespan, so they will be unlikely to live long enough anyway to die from the potential toxic effects (Jeez!)
- C. Problems:
1. Assuming that disposal in developing countries is cheaper glosses over the fact that these countries have no infrastructure to handle the waste, and ignores the fact that in order to not endanger future generations, they would have to develop one.
  2. Rationale 2. completely ignores those people who would die as a result of nonstochastic toxicity from immediate exposures, a number which would probably be quite significant given Problem 1, no infrastructure for safely handling waste.
  3. The hypothesis that risk tolerance in a given society is directly proportional to its average life expectancy and infant mortality is untested.
  4. What happens if economic growth in developing countries resulting from this “solution” leads to longer lifespans and reduced infant mortality?
  5. Given that this strategy continually advocates redistribution of pollution via redistribution of dollars, the distributions of pollution and dollars will tend to approach equilibrium, at which point the solution will no longer work.
  6. This approach completely overlooks the potential for natural redistribution of wastes via natural effects such as wind and water currents, which tends to confound efforts for containment within national boundaries
  7. The whole approach seems in my opinion to ignore ethical considerations!
- D. Suggestions:

1. Reform the organizational structure of institutions which propose SD solutions, to allow opportunity to catch metatheoretical and methodological conflicts
2. Encourage interdisciplinary cooperation for developing solutions
3. Never assume limited readership of any document!! ;-)

## VI. Conclusions

### A. Brundtland sustainable development has several strengths:

1. It placed the linkage between environment and development at the top of the global agenda
2. It has stimulated an important body of work on sustainability

### B. Its weaknesses can be overcome by:

1. Modifying some of its hypotheses (using extant knowledge)
2. Working toward changing the current growth-oriented ideology of the world
3. Reforming existing development institutions like the World Bank to be consistent with the revised framework.