

Response

Berman's letter represents a difference of opinion that is no less valid than my own. But, perhaps, that difference is more in the shading than in the lines. Given that we both agree that the book's subtitle is a misnomer, I may, perhaps, be forgiven for not having noticed that the book, sent to me for review by *Science*, is supposed to be more about people than science.

The only point in Berman's letter with which I cannot agree, is that solar energy can be delivered at no charge to the user. Were this so, there would be no need for Perlin to have emphasized the role of so many "marketers" for whom, incidentally, I have more appreciation than Berman gives me credit.

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Social "Mentalizing" Abilities in Mental Patients

In their review article "Interacting minds—A biological basis," Chris Frith and Uta Frith postulate that so-called "mind-blindness," an inability to conceive others' mental states (or "mentalize"), is a central feature of both autism and schizophrenia and, as such, is associated with demonstrably impaired function in the medial prefrontal cortex and posterior superior temporal sulcus (*Science's* Compass, 26 Nov., p. 1692). But one also sees the opposite of this in clinical practice, individuals with social and mentalizing abilities that are strikingly spared—or heightened—especially in contrast to a gross impairment of other capacities. This is not uncommon, for example, in some demented patients, who may preserve all of their previous social insight and sensitivity until very late in their illnesses; and in individuals with Williams syndrome, who tend to show extraordinary social precocity and acuteness despite being severely impaired in other cognitive areas. One wonders whether such individuals, in contrast to the individuals discussed by the Friths, show preserved or heightened activity in the medial prefrontal cortex and superior temporal sulcus?

Oliver Sacks

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Response

In our article we tried to be more cautious than Sacks suggests. Although we believe that a problem with mentalizing is a feature of autism and schizophrenia, we are not yet convinced that this is the central feature, and we await further evidence about the impaired brain function that underlies the problem. Sacks makes the interesting point that patients can be found in whom mental-

izing is preserved when other abilities have been lost. This is further evidence for the idea that mentalizing depends on a relatively circumscribed brain system that can remain intact when other parts of the brain are damaged. Additional evidence for the independence of mentalizing from other abilities comes from a study by Francesca Happé (1) showing that mentalizing ability continues to increase in old age at a time when other abilities tend to decline.

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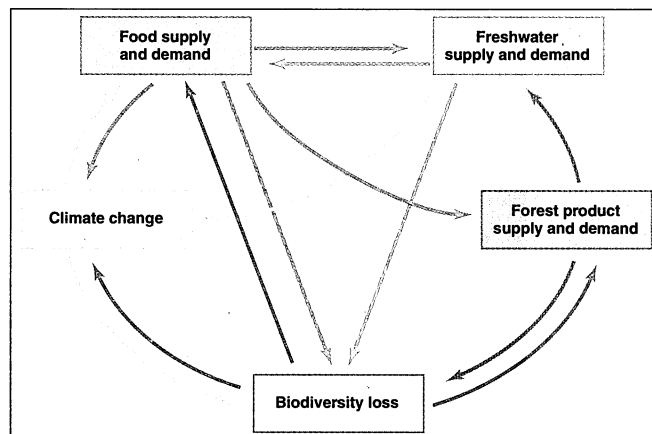
References

1. F. Happé *et al.*, *Dev. Psychol.* **34**, 358 (1998).

Biosphere Management: Some Tools of the Trade

In their Policy Forum "International ecosystem assessment" (*Science's* Compass, 22 Oct., p. 685), Edward Ayensu *et al.* point out that future human welfare requires an integrated, predictive, and adaptive approach to ecosystem management, and they identify the types of information needed to support such an approach.

In response to these imperatives, Ayensu *et al.* call for a worldwide ecosystem assessment that might cost \$5 million to \$20 million, occupy 3 to 4 years, and be repeated at 5- or 10-year intervals. This assessment would build on other international activities and would ultimately be complemented by detailed local monitoring and assessment.



The linkages between various ecosystem goods and services must be taken into account in ecosystem assessment and management.

The authors identify two requirements: a new approach to ecosystem management, and development of an information base to support that approach. However, their proposed international assessment may not be the best long-term enterprise

for meeting those needs. A more appropriate enterprise might be one that is ongoing and draws upon contributions from many more institutions and individuals.

The major obstacle to sustainable management of the biosphere is a lack of broad-based public understanding and political will. To build the necessary public understanding, biosphere management tools such as ecosystem assessment should invite the participation of numerous stakeholders. This would complicate the provision of peer review and quality control, but those functions would also be difficult to perform in the assessment proposed by Ayensu *et al.* Techniques such as the tagging of data with information about its originator could perhaps be helpful in this respect. Also helpful could be a worldwide consensus on a comprehensive conceptual architecture for ecosystem information.

Over time, ecosystem assessment at global and local scales could become a function that is routinely performed by a host of institutions as one of their normal functions. This arrangement could harness vast human and institutional resources to the assessment task, while building public understanding and political will. The assessment proposed by Ayensu *et al.* could, if properly designed, lay the groundwork for that arrangement.

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Response

We agree with Thompson's suggestion that ecosystem assessments should be ongoing and must invite the participation of numerous stakeholders. We believe, however, that an international process repeated at 5- to 10-year intervals, which would include catalytic local, national, and regional ecosystem assessments as we suggested, could be the most effective way to stimulate ongoing assessments at multiple scales. An international assessment can demonstrate the utility of the integrated approach, develop and

test methodologies that could be used at multiple scales, and build the capacity to undertake such ongoing assessments at local and national scales. Stakeholder participation does complicate the provision of quality control, but as Thompson notes, this