

COMMENTS

One More Externality Article

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While most readers of the *Journal of Environmental Economics and Management* probably feel that the point of diminishing returns has long been reached, I feel compelled to add one more contribution to the interesting debate between Freeman [3], Baumol and Oates [1], and Bird [2] on the relevance of the distinction between undepletable and depletable externalities as defined in the Baumol and Oates textbook. Although Freeman agrees with Baumol and Oates that the concepts are distinct, they disagree about the implications of the distinction on the need for compensation payments. Bird attempts to resolve the dispute by questioning the relevance of the two concepts. He writes: "... the relevant distinction is not that between depletable and undepletable externalities. Rather it is between transferable and non-transferable externalities..." [2, p. 3].

I beg to differ. The relevant distinction *is* between depletable and undepletable externalities, providing that these concepts are redefined to encompass relevant (and interesting) externality issues. Bird's distinction is deficient on this score since it ignores externalities caused by congestion (e.g., the crowded beach). Since congestion-related externalities are the source of much of the contentiousness surrounding present-day environmental debate, they are too important to ignore.³ Unfortunately, the Freeman and Baumol–Oates distinction between depletable and undepletable externalities is also deficient since, under their definitions, or, more precisely, the way they use their definitions, the distinction also ignores congestion-related externalities.

A common problem with all the participants in the debate is that they interchangeably use the word "externality" to mean a *condition* and a physical thing. They all adopt the Baumol–Oates definition of an externality: "An externality is present whenever some individual's (say A's) utility or production relationships include real (that is, nonmonetary) variables, whose values are chosen by others (persons, corporations, governments) without particular attention to A's welfare" [1, p. 17]. "Externality," so defined, is a condition—not a thing. However, when providing examples of either an undepletable or a depletable externality, Baumol–Oates, Freeman, and Bird speak of *things*, particularly *bad* things such as smoke, air pollution, acid rain, and garbage. If these things are in finite supply such that an amount "consumed" by one person means that there is less available to

¹ While Wally Oates was a most helpful critic, I absolve him from blame for the final product.

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³ By now, owners of polluting factories recognize that polluting factories are bad. The "good guys" and "bad guys" are not so easily identified with congestion-type issues such as coastal development or mineral exploration in wilderness areas.

affect other persons, then these things are termed depletable. Otherwise, they are undepletable.

Congestion, however, is unlike any of the above items used to illustrate depletable or undepletable externalities in that it cannot be parceled out in different amounts among various consumers. Indeed, it is not like any (bad) thing that can be "consumed." Rather, congestion deprives one of consumption: in particular, the consumption of the beneficial services of the environment. Moreover, unlike the situation common to the illustrations, with congestion it is difficult to separate the polluters from the injured parties. All parties contribute to the externality problem. For these reasons, congestion-related externalities are neither "depletable" nor "undepletable" as these two words are being used by the participants in the debate.

I believe it would be preferable to stick with the concept of externality as a condition and focus, instead on those factors that cause the condition. Using the concepts first put forward by Mohring and Boyd [4], these factors can be placed in one of two groups: those that cause the condition through "direct interaction" and those that cause the condition through "asset utilization." In this framework, asset utilization means asset "depletability" (to use Bird's term) and refers not to the using up of some pollutant in finite supply, such as garbage, but rather to the using up of some desirable, but unpriced, asset such as a public beach or highway. Direct interaction, on the other hand, refers to externality conditions caused by the pollutants mentioned above, regardless of whether they are in finite supply.

One way of characterizing the debate is to note that it concerns different views of the direct interaction model, while ignoring the asset utilization model. Baumol-Oates, Bird, and Freeman all assume two classes of actors. One class generates bad substances that affect the other class. The models differ only with respect to whether the production of substances has a finite upper bound and whether an injured party can shift the injury to another party. Interestingly, if the models merged the two classes into one such that all parties shared the roles of injured party and polluter, the resulting models would then take on the characteristics of the Mohring-Boyd asset utilization model. In fact, it is not especially difficult to construct a model that encompasses both direct interaction and asset utilization effects simultaneously—a model of the external unhappiness caused by sitting on a crowded beach (asset utilization) next to a noisy neighbor with a blaring radio (direct interaction). Mathematically, such a model has the characteristics of the Baumol-Oates "mixed" model, which was only briefly discussed in their text.

If "depletability" is equated to asset utilization, then the distinction between undepletable and depletable externalities can be maintained. I believe that this step should be taken, for only under these revised definitions will the analyses encompass the full range of externality problems.

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