It has been said of E.F. (Ernst Friedrich) Schumacher that he was "undoubtedly the motive force behind the AT [alternative or appropriate technology] movement. It is not an exaggeration to say that without him there would have been no AT." Born in 1911 in Bonn and trained as an economist, Schumacher emigrated to Great Britain in 1937 only to find himself two years later interned as a farm worker in Northamptonshire. Released after three years, he worked for the London Times, briefly helped with the preparation of the Beveridge social security plan and worked for the United States Strategic Bombing Survey. In 1946 he became part of the British Control Commission and, in 1950, settled into the civil service work he would do for the next twenty years at the British National Coal Board.

In 1966, having recently spent time in India (some ten years earlier he had been in Burma), he founded the Intermediate Technology Development Group, "a small private body, half charity, half pressure group," as a means to develop, and to encourage industry to develop,
new technologies suitable for the special needs and conditions of the "developing" world. It is this organization that blossomed into the "AT movement." When he died only eleven years later in 1977, he left behind three books, a record of extraordinary influence exercised in a brief span of time, and a remarkable degree of confusion as to just what he was about.

The three books are *Small is Beautiful*, *A Guide for the Perplexed*, and the posthumous collection of essays *Good Work*. His influence in the United States can be judged from the fact that while in 1973 *Small is Beautiful* went almost unnoticed, by 1976 *Science* magazine could print a triumphant article, titled "Congress Buys *Small is Beautiful,*" about the various legislative initiatives then under way to create agencies to further Schumacher's work. These activities included programs under the Agency for International Development, the National Science Foundation, the Energy Research and Development Administration, and the creation of a National Center for Appropriate Technology in Butte, Montana. Governor Jerry Brown of California was only one of the more vocal disciples of Schumacher; proponents of AT were also to be found in big business and the World Bank, in addition to the more publicized adherents on communes.

But if the record of Schumacher's influence is striking, so too is the confusion about his work. Some aspects of his thought are so obvious that most reviewers could agree on them. That Schumacher was a critic of economists and the "science of economics" was clear, also that he had grave doubts about the desirability of unrestricted economic and technological growth. That he was proposing a theory about "intermediate technology" was likewise widely noticed. But what was the basis for his criticism of economics and technology? Just where were his solutions to the world's problems designed to lead us? On such questions, there has been no consensus.

On the critique of economics, one reviewer could say that Schumacher "reports findings which transcend that discipline and show up its limitations," while another claimed that he was just developing "one aspect of the theory of comparative costs." But are the foundations of his work to be found in economics? Again, one reviewer noted that Schumacher "practiced Buddhism" and spoke of what

some might see as the "inscrutable Buddhist style" of *A Guide for the Perplexed,* while for another Schumacher was a "syncretistic" neo-Thomist. *Christian Century* could wonder whether such religion as is to be found in Schumacher is integrated with his "socialist humanism."  

The *New Republic* tried to finesse such problems about Schumacher's startling point by ignoring the "metaphysics" and finding that the strength of *Small is Beautiful* rested on its being grounded in "long experience"; Schumacher was "practical, sensible, and eloquent." But the *Times Literary Supplement* went so far as to suggest that the truly important practical themes of the book-economic, technical, and ecological-"seem almost irrelevant" in comparison with the book's speaking "so emphatically about our need to 'seek first the Kingdom.'" Apparently others missed that message in *Small is Beautiful,* suggesting that only in the *Guide* did Schumacher "come clean" about the degree to which religion is the answer to our problems.

If the foundation of Schumacher's thinking is unclear, so apparently are his solutions to the problems he described. For example, the meaning of intermediate technology is a matter of controversy. *Science* suggested broadly that Schumacher was "cutting technology down to size," arguing that "the cure for all the ills caused by technology is [not] more of the same technology."  

But what does "the same" mean in this context? *A Newsweek* article, deliberately or not, pointed up some of the difficulties of defining when technology is different, or cut down to size. In a story about a forty-three-day, twelve-state tour of the United States-presumably not a walking tour-it said that one of Schumacher's "few- concessions to technology" is an electric wheelbarrow. "But that, says Schumacher, is appropriate technology for an elderly man with a bad back."

Was a change in technology even Schumacher's primary concern? Compare the suggestion that Schumacher "seems to shy away from"

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recognizing that the changes he proposed would require "the transcendence of the international capitalist system ... and the cultural values which are both the product and underpinning of this system ... " with Environment's evaluation of him as

a changer of cultural paradigms. He helped us to see that the proliferating paradoxes of our industrial cultures are signs of the exhaustion of their logic: of utilitarianism, materialism, technological determinism, and their anthropocentric blindness to ecological realities."

We would not, then, be surprised that, after Schumacher's death, Environment would aver that "the triumph of his ideas was in the overdeveloped world," unless we had taken to heart the 1973 judgment that Schumacher's "distinctive contribution" had to do with the role of technology in the developing world."

Perhaps it is the case that Schumacher changed his mind over time, or that the implications of his thinking became clearer. Yet there is disagreement here too. When the Guide was published, the Economist noted that Schumacher "[1]ike other priests of this cult" of ecology had turned to philosophy—not, it appears, religion, either Catholic or Buddhist. Still, a philosopher could note that "Small is Beautiful is, among other things, a philosophical book." He even derived much of the teaching of the Guide from Small is Beautiful, without having seen the Guide."

In a review of alternative technology, Witold Rybczynski has suggested that such confusion about Schumacher's work stems largely from the work itself. First of all, Small is Beautiful, being a collection of speeches and essays written over a period of time, is sometimes contradictory and confusing. This is a not uncommon charge; as the Times Literary Supplement put it, the work is "carpentered together rather crudely." More substantially, however, Rybczynski also

16. Ibid., (emphasis added).
17. Ibid., "Homily," 1108.
claims that there is a deep tension between "Schumacher-the-economist" and "Schumacher-the-moralist": "The moralist wants to change man, the economist wants to change the social system."

Rybczynski has here put his finger on an important question; had he added something about "Schumacher-the-technologist" he would have covered all the realms of Schumacher’s thought whose integration is so troublesome. In what follows I will suggest that, on one level, Schumacher’s teaching is more coherent than Rybczynski’s comment indicates. That is, the teaching about technology, centering on intermediate technology, and his economic teaching, centering on functionalism, both point to and are incomplete without the moral teaching. But it is far from clear that "Schumacher-the-moralist" always points in the same direction as "Schumacher-the-economist" and "Schumacher-the-technologist." Indeed, it is this very tension that raises some of the most telling questions about Schumacher’s work.

We begin with Schumacher’s diagnosis of the root cause of the ills of the contemporary world. Modern technology would at first glance appear to be gravely flawed for Schumacher, because it depends on "materialism," understood in two senses. A "metaphysical position of the crudest materialism" means one "for which money costs and money incomes are the ultimate criteria and determinants of human action, and the living world has no significance beyond that of a quarry for exploitation. " (S, 112) Thus, materialism refers first to an overwhelming concern with the production and consumption of goods and to the judgment that these aspects of life are the most telling indicators of the quality of life. Second, Schumacher also uses materialism to characterize the metaphysical assumptions behind modern science, the notion that nature is made up of matter in motion and is malleable to human ends. Modern technology presupposes the second sense of materialism and its ends are determined by materialism in the first sense.

Schumacher has various names for materialism; sometimes he calls it scientism, modern rationalism, or the "loss of the vertical dimension." (GP, 12 et passim) He traces it back to Descartes, whose "primary interest" was our becoming "masters and possessors of na-
(GP, 9) Schumacher is surely correct in asserting that modern technology is part and parcel of the new way of looking at the world that came along with modern science. He adds that insofar as it takes its direction from science, technology is based on something that "cannot produce ideas by which we should live." (S, 87) It is perhaps for this reason that technology appears to Schumacher to "develop by its own laws and principles," which contain no "self-limiting principle—in terms . . . of size, speed, or violence." (S, 146-47) The infinite task of modern science is reflected in the immoderation of modern technology. Thus, for Schumacher modern technology is best symbolized by the "satanic mills" of nuclear power plants which, along with nuclear weapons, he says, bring us to the brink of self-destruction. (S, 137)

Schumacher’s alternative, "intermediate technology," claims to be based on a very different, much superior, and decisively premodern view of man’s place and purposes in the world. "All this lyrical stuff about entering the Aquarian Age and reaching a new level of consciousness and taking the next step in evolution is nonsense.... What I'm struggling to do is to help recapture something our ancestors had."

As we shall see, it is not the case that Schumacher is interested in "recapturing" the specific legacy of technological devices of our ancestors. Rather, he wants to recapture certain non- or anti-materialistic assumptions as a guide for technological development. If technology were to be guided by a different set of assumptions about the world, it could show a "human face. Thus, while it appears that any technology has as its "primary task" the lightening of "the burden of work man has to carry in order to stay alive and develop his potential," modern technology has been "most successful in reducing or eliminating ... skillful, productive work of human hands, in touch with real materials of one kind or another." (S, 148-49) "Intermediate technology" is an attempt to show how a change back to "productive work" is possible.

While it is often thought that "smallness" is the distinguishing characteristic of Schumacher's "intermediate technology," this attribute can easily be overstated and misunderstood. For one thing, Schumacher makes clear that part of his emphasis on smallness is rhetorical: "If there were a prevailing idolatry of smallness, irrespec-

tive of subject or purpose, one would have to try to exercise influence in the opposite direction." (S, 66) Different scales are appropriate to different kinds of enterprises, and apparently we are not to reject a particular kind of organization of production merely because it is on a large scale.

Still, Schumacher favors technologies that are "small" in the sense of being labor intensive, requiring minimal capital, and having the capacity to operate independently, so as to promote decentralization. Intermediate technology is "making use of the best modern knowledge and experience, is conducive to decentralization, compatible with the laws of ecology, gentle in its use of scarce resources, and designed to serve the human person instead of making him the servant of machines." (S, 154) Instead of mass production, intermediate technology is "production by the masses," which uses "clever brains and skillful hands, and supports them with first class tools." (S, 153-54) In the Third World, intermediate technology seeks to improve productivity far above the level of the "indigenous technology," while at the same time using methods much cheaper than the "capital-intensive technology of modern industry." (S, 180) Hence the name "intermediate" technology, as it falls between the extremes of modern industry and traditional practices.

For example, Schumacher says,. given a large earth-moving job in an underdeveloped area, one can import expensive machinery or set up local production of shovels, wheelbarrows, et cetera. The latter option, which he advocates, creates the possibility of higher employment, both from doing the job itself and from the supporting industries. More employment will bring higher demand for consumer goods, which again, as much as possible, should be produced locally, hence creating even greater employment.

It is hard to tell from Schumacher's descriptions just where in practice intermediate technology diverges from "materialistic " modern technology. Rybczynski provides the following telling example:

It will be large enough for the family but small enough for the individual to run and care for. It will be constructed of the best

23. Rybczynski’s book provides much evidence for skepticism on this point. It seems that some vaunted "intermediate technologies" do not work or do not work reliably in a purely engineering sense. The success of others is to be attributed less to the technological innovation itself than to surrounding social circumstances. This last point would not necessarily trouble Schumacher, at least.
materials, by the best men to be hired, after the simplest designs that engineering can devise. But it will be so low in price that no man will be unable to own one-and enjoy with his family the blessing of hours of pleasure in God's great open spaces. . . . When . . . [it] becomes as common in Europe and Asia as it is in the United States the nations will understand each other. Rulers won't be able to make war. They won't be able to because the people won't let them.

This inspiring description of the impact of intermediate technology is actually Henry Ford talking about that bane of the modern environmentalist, the automobile. Modern technology does not always require high capital outlay. It often promotes decentralization. Like modern technology, intermediate technology seeks to increase productivity and to satisfy a demand for consumer goods. It requires us to use our best knowledge to create first class tools, i.e., more technology. Intermediate technology, like materialistic modern technology, is premised on the belief that systematic efforts on man's part can lead to dramatic improvement in the human condition. The most noteworthy difference is an animus against labor-saving machinery, which seems to suggest that for human beings to be actively engaged in work is viewed more positively by intermediate technology than by modern technology.

We might expect, then, a sustained examination of various intermediate technologies in order to show how they are superior to modern technology with respect to their ability to utilize our labor in a productive fashion. However, most of Schumacher's attention is not centered on describing the merits of this or that technology (the backhoe vs. the shovel). This lacuna is not surprising if small is not always beautiful. That is, if intermediate technology is context-sensitive, if what is "intermediate" depends on what is to be done and what resources are available, then it will be difficult to give a general description of what kinds of devices are to be encouraged. Lacking Schumacher's blessing, for example, an electric wheelbarrow might not have come first to mind as an "intermediate" technology. The right kind of intermediate technology in any given case is a matter best left to those who have the necessary expertise to develop it, even to those who have gained their expertise in large industrial organizations.

Instead of giving us an engineering review of various technologies,
most of Schumacher’s criticisms are directed back to the larger, materialistic assumptions and against the forms of economic organization that follow from them. He is particularly concerned with the failings of capitalism. Placing critical emphasis on the context in which a technology develops rather than on technological devices suggests one reason why the phrase “intermediate technology” was quickly replaced by “appropriate technology.” The natural question when faced with this phrase is, “Appropriate to what?” But that question is not so difficult to answer. Schumacher looks to the development of a technology appropriate to a decisive change in the economic system.

Schumacher begins this attack on the economic consequences of materialism by calling our attention to so-called economic approaches to solving problems of production and development. A significant question raised by Small is Beautiful, and as far as Schumacher is concerned a main bone of contention between his approach and that of professional economists and forecasters, is whether questions of economics are reducible to statistics or the findings of a “value-free” science. Schumacher is quite certain they are not, but rather that economic issues are ultimately questions about the way we should live as individuals as well as how we should organize our common life. Schumacher attempts to expose and critique the notion of the good for man that rests at the heart of classical economic thinking.

Thus it is that Small is Beautiful begins with an attack upon premises of capitalism and, not so incidentally, on liberalism as well. These ways of thinking have not only failed to achieve what they promised, but those promises were flawed from the start. We wrongly think, Schumacher says, that the “problem of production’ has been solved” (S, 13), that mankind is finally capable of providing an ever-increasing plenty for all, and that the only problems that remain are in working out the details of how the goods are to be gotten to everyone. Scarcity remains a fact of life, particularly given the character of the “solution” to the problem of production that has been pursued. Schumacher argues that the liberation of selfishness makes up the

25.Ibid., 4.
26. The relationship between the discussion of technologies and the larger political criticism is nicely illustrated in Environment’s ”The Legacy of E. F. Schumacher.” While the article is illustrated with pictures of various devices that apparently stem from Schumacher’s influence, the text and the claimed “essence of his work” has to do with the political critique which, the author says, made his work ”most meaningful to me as a citizen activist.” (“Legacy,” 30.)
core of the economic approach. While the assumption is that, working within a proper system of organization, this liberation will produce the maximal public good, Schumacher believes that this liberation can produce nothing but unsatisfied desires; there is never enough.

Gandhi used to talk disparagingly of "dreaming of systems so perfect that no one will need to be good." But is it not precisely this dream which we can now implement in reality with our marvelous powers of science and technology? Why ask for virtues, which man may never acquire, when scientific rationality and technical competence are all that is needed? (S, 24)

Clearly, as far as Schumacher is concerned, to get from private interest to public gain is not so easy as liberals and capitalists assume. He presents several criticisms. The modern "solution" to the problem of production has paid insufficient attention to the question of how much is enough or at what point we would think that everyone has sufficient wealth. It is at best unrealistic, and at worst ecologically suicidal, to think that the whole world could enjoy the standard of living of the United States or Western Europe. There are limits to economic growth that have not been sufficiently appreciated. In addition, Schumacher contends, there is no evidence that this sought for, ever-increasing material prosperity, even if it could be achieved, would produce happiness or peace—indeed, quite the opposite:

If human vices such as greed and envy are systematically cultivated, the inevitable result is nothing less than a collapse of intelligence.

.. If whole societies become infected by these vices, they may indeed achieve astonishing things but they become increasingly incapable of solving the most elementary problems of everyday existence. (S, 31)

The failure to understand the problem of production correctly—misunderstanding both what is possible to achieve and what is desirable—is the result of materialism. The private enterprise system is based on faulty metaphysical premises, and has had evil consequences for the environment with its stress on growth. Therefore it is necessary to discover the elements of "an alternative system which might fit the new situation." (S, 263) Most commentators find the main expression of the alternative system in what Schumacher called "Buddhist economics," for under this rubric Schumacher lays out a
picture of how a conception of the world different from the materialistic one will produce very different goals and means to achieve them. In Buddhist economics we are called not to avoid work, but to seek creative work; not to be interested above all in material goods, but in higher callings; not merely to consume what is nonrenewable but to use what can be renewed and play a part in its renewal. (S, 53-62)

The notion of Buddhist economics has created a certain confusion in understanding Schumacher for two related reasons. On the one hand, it has been thought to be an expression of his personal commitment to Buddhism. But appearances can mislead, as the following excerpt from an interview indicates:

[O]ne of the most frequently cited chapters [of Small is Beautiful], "Buddhist Economics," almost made it appear as if he were deeply involved in Eastern religions. But wasn’t this chapter, I inquired, really more informed by the Catholic writings and thinkers he mentioned so frequently elsewhere in the book ... ?

Schumacher grinned. "Of course. But if I had called the chapter ‘Christian Economics,’ nobody would have paid any attention.”

On the other hand, because of this presumed personal commitment, many assume that this one chapter outlines Schumacher’s definitive stance towards materialism. This conclusion is premature. In the quote that follows, Schumacher makes clear that Buddhist economics is a thought experiment in overcoming materialism, by demonstrating that the "science of economics" contains debatable assumptions about the human good:

In the following chapter, we shall explore what economic laws and what definitions of the concept "economic" and "uneconomic" result when the meta-economic basis of Western materialism is abandoned and the teaching of Buddhism is put in its place. The choice of Buddhism for this purpose is purely incidental; the teachings of Christianity, Islam, or Judaism could have been used just as well as those of any other of the great Eastern traditions. (S, 52)

Whether we call the result Buddhist or Christian economics, it is important to realize that what is outlined in "Buddhist Economics" is
not yet Schumacher's "alternative system which might fit the new situation." It does not attempt to deal systematically, for example, with two key elements of the "alternative system" that are of central importance to Schumacher's practical proposals: the organization of production and ownership. It does, however, introduce us to a key aspect of Schumacher's argument. If it is the case that modern technology and capitalism are built up on a certain understanding of man's place in the world and the human good, then Schumacher will have to provide us with a comparable set of assumptions for his own alternative. For the moment, we will refer to these assumptions as "Buddhist economics," recognizing that this label "stands in" for a position that has not yet been fully articulated.

For most advocates of Schumacher, the discussions of intermediate technology and Buddhist economics exhaust *Small is Beautiful*. Indeed, Rybczynski recounts an amusing story about a press conference at which Jerry Brown seemed to indicate that he was entirely unfamiliar with the latter portions of the book where, it appears, "Schumacher-the-economist" comes to the fore. Yet we can see why Schumacher might well believe that what he has said to this point requires such a supplement.

Every problem touched upon in the preceding chapters leads to the question of "system or machinery," although, as I have argued all along, no system or machinery or economic doctrine or theory stands on its own feet: it is invariably built on a metaphysical foundation.... (S, 262)

It is apparently the problem of integrating these two parts of Schumacher's argument—the systematic and the moral/metaphysical—that leads to perceived contradictions between "Schumacher-the-economist" and "Schumacher-the-moralist." In what follows we will analyze this difficulty.

II

Technology is no longer the key to overcoming the deficiencies of the "modern experiment." Materialism must be confronted head-on

29. If one misses the centrality of functionalism, then *Small is Beautiful* appears more contradictory than it really is. Functionalism, and not the indigenous conditions of politics and culture of a given society either developed or developing, provides the political context in which the question of "appropriateness" is addressed. (Compare *Paper Heroes*, 24.)
by an alternate set of assumptions about the world and man’s place in it, a confrontation that finds its first expression in "Buddhist economics." But Buddhist economics does not answer all the questions of "system or machinery" that need to be raised if a new context for technological development is to be found. The important role played by functionalism in this quest has not been widely appreciated, despite the fact that the chapters that take up this topic are among the few specifically written for *Small is Beautiful*.

Schumacher openly borrows most of his discussion of functionalism and industrial organization from the British social theorist R.H. Tawney. To understand the foundations for Schumacher’s functionalism best, we may turn to Tawney’s *The Acquisitive Society*, where he writes that:

A function may be defined as an activity which embodies and expresses the idea of social purpose. The essence of it is that the agent does not perform it merely for personal gain or to gratify himself, but recognizes that he is responsible for its discharge to some higher authority.  

Tawney intends to take direct aim on liberalism and capitalism via an attack on property rights, suggesting that allocation of property be made dependent on the work that is done with it. As things are now,

[ownership and use are normally divorced. The greater part of modern property has been attenuated to a pecuniary lien or bond on the product of industry which carries with it a right to payment, but which is normally valued precisely because it relieves the owner from any obligation to perform a positive or constructive function. Such property may be called passive property, or property for acquisition, for exploitation, or for power, to distinguish it from the property which is actively used by its owner for the conduct of his profession or the upkeep of his household.]

As is clearly implied by this distinction, passive property leads to work that is exploitative, dangerous, and drudge-like, while active property goes along with work that is creative. The transformation of industrial labor into professional work requiring "energy and thought and the creative spirit" means that we must make distinctions involv-

ing what kind of ownership is appropriate to what kind of enterprise.  

Private ownership is appropriate when we are talking about a craftsman owning his tools, but not when we are speaking about shareholders in factories. Similarly, collectivism or nationalization are neither always appropriate nor always inappropriate. We make such judgments according to what service is to be accomplished for the public good 33 Private ownership might for a time have been the best means of industrial organization, but it has lost its claim to be able to provide what people want in an efficient and just manner. 34 The professional orientation that needs to take its place means not only that those who do a job should have control over the property that is necessary to do it, but that they should commit themselves to certain obligations and to the means by which such obligations can be monitored publicly.

Thus, for Tawney, the beginning of change is to be found in overcoming a dogmatic adherence to the legitimacy of private ownership. On this basis, a new organization of industrial production would become possible. But his vision does not end there. A society based on rights, with its stress on individual freedom and suspicion of obligation, is founded in unreason and chance. To accept the principle of functionalism is to create a society marked by proper limits on what may and may not be done, unity of purpose and distributive justice.

The famous lines in which Piccarda explains to Dante the order of Paradise are a description of a complex and multiform society which is united by overmastering devotion to a common end. By that end all stations are assigned and all activities are valued. The parts derive their quality from their place in the system, and are so permeated by the unity which they express that they themselves are glad to be forgotten, as the ribs of an arch carry the eye from the floor from which they spring into the vault in which they meet and interlace.

Such a combination of unity and diversity is possible only to a society which subordinates its activities to the principle of purpose. For what that principle offers is not merely a standard for determin-

32. Ibid., 82.
33. Ibid., 147.
34. Ibid., 139ff.
35. Ibid., 123-28.
ing the relations of different classes and groups of producers, but a
scale of moral values.\(^3\)\(^8\)

The "moral values" Tawney seems to have in mind flow from the sub-
ordination of private interest, though Tawney does not draw out their
content systematically. For functionalism's highest purpose, Tawney
quotes Bacon: "the work of man ought to be carried on `for the glory
of God and the relief of men's estate.'"\(^3\)\(^7\)

There is a curious tension in Tawney's thinking on the question of
unity and diversity, or order and freedom. For while the submission to
the Divine will may produce the peace of the spirit, or the organiza-
tion of inanimate objects may produce the beauty of the cathedral, a
society in which human beings organize themselves with similar
thoroughness and devotion to a single end would be totalitarian.

And what is this end? Tawney may not realize just how telling his
citation of Bacon is. From Bacon's point of view, if one had to choose
between the glory of God and the relief of man's estate, the latter
would come out on top. Similarly, while Tawney is eloquently aware
that the provision of material necessities is in no way the sole or
highest purpose of human life, and indeed suggests that functional-
ism sets the economic realm in its proper, lowly place, he assumes,
with Bacon and modern "materialism" generally, that the higher
things are only built or best built on these secure material foun-
dations; to solve the economic problem is to solve the essential
human problem.

"The instinct of mankind warns it against accepting at their face
value spiritual demands which cannot justify themselves by practical
achievements:"\(^3\)\(^8\) Tawney does not seek to challenge this instinct and
the priority it implies. The rationality of the functional society resides
in its efficient productivity. A cathedral is a lasting practical achieve-
ment, but we are entitled to wonder whether the "totality" of the
functional society will be best represented by the more utilitarian
Bauhaus glass box.

When we turn back to Schumacher, the question of the relation-
ship between order and freedom is just as pressing. Schumacher in-
dicates that he is wary of central planning and all other cen-
tralizations of power. By breaking up larger organizations he is

36. Ibid., 183.
37. Ibid., 181.
38. Ibid., 160.
seeking to maintain freedom for the individual. "[F]reedom versus totalitarianism" is "the major consideration from the metaphysical point of view taken in this book." (S, 284) He is implicitly critical of many socialists for offering (like capitalism, he says) nothing "that is worthy of the sweat of free-born men." (S, 261)

Like Tawney's, Schumacher's functionalism amounts to a reorganization of the economy and production. Individual enterprises, whole industries, and large segments of the economy are to be structured so as to make them more "human," more productive, and (not so incidentally) more profitable. The key to this reorganization, again like Tawney, is a rethinking of ownership.

Schumacher seems to want to appear to take a onedogmatic view of the question of public versus private ownership; he makes clear that each has its place. But private ownership operates under a double cloud. In an essentially positive discussion of socialism, Schumacher notes that the question of kinds of ownership is really just a question of "framework" or means. Much more important are the ends that are being pursued. But it is necessary to recognize that private ownership of the means of production is severely limited in its freedom of choice of objectives, because it is compelled to be profit-seeking, and tends to take a narrow and selfish view of things. Public ownership gives complete freedom in the choice of objectives and can therefore be used for any purpose that may be chosen. While private ownership is an instrument that by itself largely determines the ends for which it can be employed, public ownership is an instrument the ends of which are undetermined and need to be consciously chosen. (S, 259)

The second dysfunction of private property stems directly from the functionalist premise. As implied in the previous quotation, Schumacher's assumption is that the purposes to which property is put should determine its status as public or private. Thus, there is no right to property. To support and explicate this point, Schumacher repeatedly quotes Tawney. Both claim that functional organization is a better guarantee of the public interest than rights. Schumacher quotes Tawney as saying that property rights are to be maintained only on "the performance of service." (S, 271)

Schumacher allows that property owners, up to a point, can decide what services are to be performed, and whether they are being performed adequately. But who these owners are varies with the size of the business enterprise in question. Small may be beautiful, but it
does not necessarily raise the questions most interesting to Schumacher. He is content that small enterprises be left under the old system of private ownership; it is only medium- and large-scale organizations that raise creative questions of reconstitution (by no means elimination).

For medium-size firms (medium seems to mean up to about 350 employees [S, 276]), Schumacher commends the example of the Scott Bader Commonwealth, a plastics and polymers firm operated under a system of collectivized ownership. The "Commonwealth" of workers and previous family owners operates under a constitution that regulates size, payscale, and business practices, including stipulations about doing no war-related work and giving half of the profits to charitable purposes. Schumacher claims that the Commonwealth has not only been a financial success, but also an example of how to "combine real democracy with efficient management" and achieve "the Christian way of life" in business. (S, 280, 282) Schumacher demurs from giving an organizational account of how the Commonwealth manages this feat, quoting approvingly a family member who offers instead a "tour of our forty-five-acre, ancient Manor House Estate" to see how it is all done. (S, 280)

The question of how to manage large-scale enterprises is perhaps the most difficult one when it comes to striking a balance between order and freedom. Indeed, it is in this context that Schumacher attempts a general account of how economic life may be organized. As it turns out, despite talk of smallness, large-scale economic units are "here to stay" according to Schumacher, but one needs to break them down into smaller, semi-independent units "within large organization." (S, 242)

Schumacher's old employer, the British National Coal Board, is cited as a successful example of a large-scale yet decentralized structure, with specialized, smaller "quasi-firms" not only for various types of mining, but for all the areas of supply and distribution that are connected with mining. Schumacher likens this kind of organization to a man holding helium balloons; each balloon has its own lift, but they are gathered together in a group by a man who "stands beneath them" but is nevertheless "holding all the strings firmly." (S, 245) Since rational organization requires the meshing of managerial and entrepreneurial skills, or order and freedom, we want to know more about just who will be "holding the strings" so firmly, preventing each balloon from going off on its own.

Part of Schumacher's ability to defend his structural arrangements at this level of organization as satisfactorily meeting the demands of
both order and freedom depends on a deliberate attempt to blur the distinction between the two. Schumacher acknowledges that, speaking *abstractly*, there is a tension between the triplets "freedom, market economy, private ownership" and "totalitarianism, planning, collectivized ownership," but he asserts that these various options may in *practice* be mixed and matched in any permutation, e.g., freedom, planning, and collectivized ownership or totalitarianism, market economy, and private ownership. He "leaves it to the reader's diligence" to find historical cases of such hybrids. This task, if successful, would serve to make us aware of the dangers of "conceptual frameworks" that are not derived from reality. (S, 283-84) The human "reality" has a special character for Schumacher:

We come back to our starting point: all real human problems arise from the *antinomy* of order and freedom. Antinomy means a contradiction between two laws; a conflict of authority; opposition between laws or principles that appear to be founded equally in reason.

Excellent! This is real life, full of antinomies and bigger than logic. (S, 250)

Paul Kuntz has called this kind of argument a "deliberate pattern of both-and rather than either-or...." He argues that for Schumacher opposites are not necessarily contradictories. To take opposites into account together appears to be the way by which Schumacher seeks "the maintenance of balance" and "the ancient principle of Greek philosophy . . . 'Neither of those extremes is desirable and a middle way has to be found.'" as Schumacher and Kuntz raise a question of great importance and difficulty. Is the mean to be found by combination of opposites, as the "both-and" reasoning implies? Despite the classical attribution, this "both-and" reasoning is certainly not at work in Aristotle's understanding of the mean that constitutes virtue; courage is not foolhardiness and cowardice combined. It may be more true of Aristotelian politics, where moderate regimes combine characteristics of extreme regimes, e.g., polity’s relationship to democracy and oligarchy. On the other hand, polity is not achieved merely by combining demagogues with the arrogant rich. How does one know which combinations will produce "balance," and what the character of the resulting regime will be?
In both virtue and politics it seems fair to say that the mean is found less by combination of or derivation from extremes that from some kind of knowledge of a standard that transcends the extremes, e.g., a knowledge of human excellence or a knowledge of the purposes of political association. As has already been intimated in the discussion of "Buddhist economics," Schumacher sees that such knowledge has an important place. But does it combine with "both-and" reasoning to result in moderation?

Doubt arises when it is seen, for example, that he praises Mao Tse-Tung as an example of someone who derives his conceptual frameworks from reality. Mao has provided the "best formulation of the necessary interplay of theory and practice" that Schumacher knows of. (S, 253) This interplay teaches, for example, that university students must return to the countryside to work in compensation for their educations. We are entitled to wonder just what kind of freedom Schumacher is interested in preserving—even what kind of order he wants to maintain—in light of his fulsome praise of this and other practices of the Cultural Revolution (GW, 101-3), which seems to have combined the "opposites" of despotism and license without having found the mean.

It may be argued that Schumacher’s moderation stems from his acknowledgement that the world is not made up of pure types, and that, therefore, labels such as "totalitarian" and "free market" are misleading and put artificial constraints on the thinking we need to do to address important practical problems of development. We should seek what works rather than some elusive ideological purity, as Mao is said to have done, however inaccurately, by Schumacher.

This outlook begs vital political questions. A regime that combines full-blooded totalitarianism, planning, and collectivised ownership would have a very different idea of what works, i.e., what goals are being successfully accomplished, than one that combined freedom, market economy, and private ownership. Both regimes could be immoderate, although their vices would probably be very different. Further, the example of Nazi Germany suffices to remind us that moderation is not necessarily the result of combining totalitarianism with some elements of private ownership and a market economy. 

We may doubt, then, that moderation is the necessary result of the "both-and" reasoning pointed out by Kuntz.

But the problem with this part of Schumacher's argument goes deeper. There is an abstraction in Schumacher's very warning us away from abstraction. These discussions of "system or machinery" are intended to point us in the direction of the necessary foundations for something that looks like "Buddhist economics." Can we really think that the creation of such a regime would be as simple as listing the permutations of a set of six words in groups of three on paper? Can we then merely "plug in" Buddhist economics to any of these variations? Surely, it takes more to make a constitution. Schumacher's formalistic treatment of the competing requirements of order and freedom has the effect of making us believe that options in the political world are as unlimited as the natural world is limited: just mix and match. This argument amounts to the creation of an "ideal" that is even more rarified than the kind Schumacher criticizes when he tells us not to expect to find pure types in practice.

The task of combining order and freedom in specific institutions requires that we ask questions like "Freedom from what?" or "Freedom to do what?" or "Orderliness to what end?" Can we see how the machinery Schumacher places before us fits with his ends?

Having thus to some degree obscured the important issue of "freedom vs. totalitarianism" he sought himself to raise, Schumacher proceeds to discuss the particulars of the ownership and organization of large-scale firms. The task of decision-making is to be accomplished by a scheme of functional representation, in which, outside of the realm of government and bureaucracy, "all legitimate interests can find expression and exercise influence." (S, 270) Schumacher outlines a "truly `mixed economy" in which "Social Councils . . . integrate large-scale business enterprises as closely as possible with their social surroundings." (S, 284, 289) These Councils would be 50 percent shareholders in local industries and should be formed locally along broadly fixed lines without political electioneering and without the assistance of any governmental authority, as follows: one-quarter of the council members to be nominated by the local trade unions; one-quarter, by the local employer's organizations; one-quarter, by local professional associations; and one-quarter to be drawn from local residents in a manner similar to that employed for the selection of persons for jury service. (S, 289)
of making sure that the various functional elements in the community are represented, although it limits the scope of what constitutes a "legitimate interest." Under normal circumstances, Schumacher says, the Councils are to operate without the interference of local government, and indeed government will not have, acting by itself, the authority to overrule them; the "Social Council would have legally defined but otherwise unrestricted rights and powers of action." (S, 289) These Councils will also have a significant "power of the purse" in their ability to dispose of, for public purposes, their 50 percent of the profits of the firms that they regulate (there would then be no corporate income tax). Usually they are not to interfere with the actual management of these firms, nor are the firms to be managed by civil servants. Here, along with the fact that the publicly held shares would not even normally be voted, we find Schumacher's concession to the "entrepreneurial." If, however, the Social Council felt that management practices were against the public good, it would apply to a special court in order to have its voting rights activated—Schumacher's orderliness. (S, 287-88)

At first glance we seem to be a long way from the totalitarian element in Tawney's functionalism. While we should not underestimate the fact that private property and all that goes with it exist only at the sufferance of the powers that define what a "small" enterprise is, there is yet a further problem that makes this assessment uncertain. This problem involves just that relationship between Schumacher's functionalism and "Buddhist economics" that has repeatedly come to our attention.

Given Schumacher's treatment of the dysfunctions of private ownership, we can see that there is an ambiguity with regard to the reason for which private property is allowed at all. Are small enterprises private to encourage production to stay small, that is to say, out of a recognition of the attractiveness of private property, as we might expect from the emphasis on independence and the decentralizing tendencies of "intermediate technology"? Or are they suffered to remain private because when all is said and done they are not expected or encouraged to play much part in economic life, as we would expect from the critique of private property?

Similar ambiguities characterize the treatment of medium and large enterprises. Following the Scott Bader model, Schumacher transforms the medium-sized business into a community in which all participate and benefit. This seems a worthy, but rather formal goal. Does he assume that these various medium-sized communities would all pursue the same ends in the same way? Would Schumacher favor
as much a "commonwealth" that constituted itself only around production of war materials as much as he favors Scott Bader? Or does Schumacher make the dubious assumption that such a participatory system and the communalization of property inherently tends to the "Christian," the public-spirited, and the peaceful?

The same problems pervade his account of the Social Councils. Schumacher does not even begin to specify what sort of issues would rightly permit their interference in corporate management: would they include gross malfeasance, local pollution, pollution outside the region, a defense contract, doing business in South Africa, doing business with the Soviet Union, an unpopular labor contract, failure to live up to a "Christian way of life," or failure to promote alternative technologies?

Perhaps this decision is deliberately left to the local conscience in order to provide a check against excessive centralization, particularly in the British context, which Schumacher is for the most part assuming. But what would the Social Council of Cambridge, Massachusetts, accomplish as compared with the one in Orange County, California? Would businesses be free to move to locations they perceived as less hostile? Would the court that determines the legitimacy of interference itself be local, regional, or national, or bound by precedent at any of these levels?

Similar questions could be posed about the Social Council's public expenditures. Should they go to roads, relief, the arts, or all of the above? None of these questions is necessarily impossible to answer, but within the context of functionalism alone we cannot be certain of Schumacher's expectations about the debates that will take place on these issues and their results. Is he assuming that the "machinery" of new forms of ownership alone is enough to produce the desired orderly, just, and public-spirited outcome that eludes capitalist economic organization? Or has he gone so far in promoting the cause of freedom as to produce a climate that has perhaps even more opportunity for the expression of narrow interests than exists at present?

The answers to these questions are not so evident as we might wish. Having taken to heart Gandhi's dictum about "dreaming of systems so perfect that no one will need to be good," Schumacher it seems wants to avoid the first error. Endorsing the anti-rights position of functionalism and intending that normally the individual will conform his actions to the dictates of a higher authority suggest that he does not intend to fall into the second. But how will he avoid both errors?

Does Buddhist economics' ability to set standards for what constitutes a good life blunt the horns of this dilemma? Yes and no. It is
clear that people could act in conformity with its dictates within the framework Schumacher has laid out. But it is just as clear that the framework does not require them so to act. By refusing to dream of a system so perfect that people do not need to be good, he has created one in which it is eminently possible for them to be bad. So we are left to wonder about the relative importance of the system and the individuals’ comportment. After all, there have been decent people within the capitalist “system” - E. F. Schumacher among them.

In terms of the balance between order and freedom, this continuing tension in Schumacher’s thinking recreates the problem in Tawney’s. While the mechanisms seem to allow a certain free play and diversity, the overarching goals are such as to create a strong push toward conformity and order.

In sum, the incoherence in the arguments about ownership and how changes in ownership will address the failings of capitalism point to the necessity of a clearly articulated standard, or body of questions, against or in light of which one could make the necessary accommodations between order and freedom according to the end or ends to be achieved by both. Evidently functionalism cannot be the final word if we are to be able to reconcile the divergent directions of Schumacher’s picture of a new order of things. The question of what he takes to be the public good, or the ends that should be served by technology or an economic system, returns to the fore; we need something more than the provisional “Buddhist economics.” Let us delve deeper into what Schumacher would call his “metaphysical” principles.

III

The need to think our way back to what our ancestors had and to recognize the mistaken premises of the modern technological project is, according to Schumacher, clearly evident from the threat of ecological disaster and an increasingly alienated humanity. Schumacher proclaims that “the modern experiment has failed.” (GP, 139) We can no longer accept the authority of modern science in answering the important questions facing us about how we should be leading our lives and what goals mankind should set for itself. But where are we then to look for guidance? To change technology alone is, as we have seen, not enough for Schumacher; we have to change the understanding upon which technology is developed. Likewise, functionalism as “system or machinery” is not enough; to achieve Schumacher’s goals it needs to be completed by an explicit account of the
goods it is to seek. Nor is "Buddhist economics" the last word; Schumacher intends that, as a thought experiment in overcoming materialism, it should have important lessons to teach, but it is not his complete formulation of the principles of action which are to guide our lives.

Schumacher claims in Small is Beautiful that our guiding principle should be "permanence." (S, 33) Permanence means the recognition of the quantitative limits to growth; we should not seek ever-expanding material satisfaction. This argument is not simply, and perhaps not even mainly, based on a belief in limited resources. It comes from a view of things that, while Schumacher in explicating it has frequent recourse to the "Christian tradition," is really in accord with "all genuine traditions of mankind." (S, 296) Schumacher calls it "wisdom" or "traditional wisdom." Although Paul Kuntz has shown very well that most of what is said in the Guide is already foreshadowed in Small is Beautiful, we turn to the Guide for Schumacher's "systematic" presentation of traditional wisdom.

While this Guide deals with the most serious question, what is the good life, it approaches its subject in a bewildering way. The book begins with a critique of the dogmatism of modern science and materialism, for their narrow view of what constitutes the human reality; "Our task is to look at the world and see it whole." (GP, 15) The Cartesian-inspired philosophy that is the dominant strain of our time has led to the loss of the "vertical dimension," or the belief that there is a rational, meaningful hierarchical organization of the world.

But to bolster his case against modern thought, Schumacher is anything but "hierarchical." In good democratic form, one finds Gurdjieff and Ouspensky side by side with Aquinas, Dante cited along with Edgar Cayce, and, in three only slightly atypical pages, quotations from Plato, Philo, Plotinus, the Theologia Germanica, Paracelsus, Swami Ramdas, Azid ibn Muhammad al-Nasafi, and the Tao Te Ching. (GP, 63-65) Since Schumacher takes these citations from A Treasury of Traditional Wisdom, there is no reason to believe he is expert in all of these thinkers. Rather, he is following in the footsteps of Coomaraswamy, Guenon, Schoun, and other orientalist scholars who find an essential, if mystical, conformity of the world’s religions, sometimes called "perennial philosophy." Modern philosophy may have its dogmatic aspect, but Schumacher takes for granted the legitimacy of this approach to wisdom.

Traditional wisdom speaks of a world which is organized hierarchically with man in an important but, as Schumacher repeatedly
only hints, by no means dominant position in the hierarchy. The hierarchy is formed of "levels of Being" (mineral, plant, animal, human), with each upward level incorporating but transcending in an "ontological discontinuity" the level previous to it. Man is distinguished by possessing not only the matter, life, and consciousness of the previous levels, but also self-awareness (i.e., the possibility of enlightenment). (GP, 15-25)

This self-awareness, along with a faith that is "not in conflict with reason, nor . . . a substitute for reason," is the key to man's ability properly to live in and understand the world. (GP, 45) Schumacher takes some pains to describe the four kinds of knowledge that he sees as necessary for this right living: knowledge of the inner self, knowledge of the inner self of others, knowledge of self as seen by others, knowledge of the outer appearance of others (i.e., sensory knowledge). (GP, 62-63) Each kind of knowledge has its own place in the fourfold hierarchy and in our understanding of that hierarchy. But all four seem to revolve around

the central teaching of the great religions, which, in many different languages and modes of expression, urge man to open himself to the "pure ego" or "Self" or "Emptiness" or "Divine Power" that dwells within him . . . to transcend consciousness by self-awareness. Only by liberating oneself from the thralldom of the senses and the thinking function ... can this "awakening" be accomplished. (GP, 79)

To gain our true selves, and thereby insight into the true character of the whole of which we are a part, we have to transcend the contingent and particular aspects of character that we tend to think of as our "self" and enter into a mystical communion with the whole.

Having gained enlightenment, we are in the best position to understand and deal with the sorts of problems we have to face in this world. We see, Schumacher argues, that we face two kinds of problems: convergent and divergent. Convergent problems are those that are susceptible to scientific or technical solution; they deal with the manipulation of matter alone. Divergent problems are those that involve the antinomies of human life. They cannot be solved in the formulaic way that convergent problems can be; they must be transcended by the introduction of a higher principle. (GP, 121ff.) The antinomy between order and freedom, for example, may be transcendable by brotherhood, love, or compassion. (GP, 126) It is the tension created by the antinomies of divergent problems that can lead us to higher levels of thought and action.
The knowledge of man's place in the world that Schumacher has outlined allows him to present a picture of the "true progress of a human being." We have three tasks. The first is to learn to find "temporary happiness in receiving direction from outside," that is, from society or tradition. The second task is to begin to become "self-directed" by weighing this outside knowledge and making what is good in it one's own. The third task is doubtless the most difficult: the overcoming of self-direction by the subordination of ego. Having done so one "has gained freedom, or, one might say, one is then God-directed." (GP, 135)

It seems a long way from technology and functionalism to this unapologetically mystical position. Yet we have seen how what Schumacher wants to achieve through both intermediate or alternative technology, and functionalism depends on some such moral teaching. Schumacher is saying that economic and technological practices will not change unless removed from their materialistic context and placed within the "God-directed" sphere of traditional wisdom. But if we pay heed to the tasks of "true progress," why need we be concerned about the economic and technical realm at all? The most Schumacher can say is that materialistic modern technology and capitalism block our access to the truth by misdirecting our attentions. This claim is by no means trivial. But books like the Guide, created and distributed through all the capacities of profit orientation and "large" technology, can apparently serve to call our attention to the timeless truths of traditional wisdom. Indeed, Schumacher and those modern scholars whom he follows down the paths of "perennial philosophy," seem to have been able to overcome the misdirections of materialism without the need for revolutionary transformations of society.

The very timelessness of traditional wisdom would seem to suggest that the contingent historical circumstances in which wisdom might appear again are only of passing interest. Thus, in the Guide the fact that the belief that everything is 'politics' and that radical rearrangement of the 'system' will suffice to save civilization is no longer held with the same fanaticism as it was" is cited as a sign of increased maturity of humanity. (GP, 138)

Perhaps the continuing tension between the need of functionalism and intermediate technology for traditional wisdom and the independence of traditional wisdom from technical and economic contexts is an indication that we face one of Schumacher's antinomies and a divergent problem. While the higher calling of "God-direction" may
help put our material requirements in their proper place, it could still be true that those same requirements, which make “materialism” an ever-present threat, could always be a source of tension with spiritual life. But then, according to Schumacher, what would be the way of transcending this problem?

We might think that to transcend this worldly problem requires ultimately another; different world—a not uncommon teaching of "traditional wisdom." But nowhere does Schumacher suggest that our goal in life is to achieve salvation, the intimation of salvation, or any other "other worldly" end. Indeed, a transcendent or transmundane realm, while hinted at throughout the *Guide*, plays no role whatsoever in Schumacher's description of human ends. Kuntz puts it this way, speaking of *Small is Beautiful*:

One might suppose that since Schumacher professes Christianity and defends tradition that his concept of hierarchy is the Neo-Platonic model of the dependence of all lower levels on the higher and ultimately on the One, whence all has come, as rays from the sun. Schumacher does use the metaphor of finding a centre, but the theology of the dominant tradition of the omnipotent and omniscient Creator is not and could not be his central belief.

I suggest that rather than turn to another world, Schumacher tries to transcend the tension between the material and the spiritual through the notion of "productive work." Traditional wisdom, he says, teaches that work is the center of life (GW, 118), hence a major purpose of all Schumacher's practical proposals is to maximize the amount of time used for "actually producing things," and also to maximize the number of people involved in production. He regards in his schemes the necessity of putting old people and children to work as a great advantage. (S, 152) The need to be engaged in work closes the door to the leisure that makes possible a life of unnecessary consumption. On the other hand, productive work itself can be "sanctified"; perhaps Schumacher has in mind Gandhi at his spinning wheel.

There are problems with this interpretation, however. We might have thought, along with the editor of *A Treasury of Traditional Wisdom*, that the deepest enlightenment to be gained from the study of the teachings of sages might well be a matter of much study and contemplation. Such contemplation would seem to require leisure, as is
clearly argued, for example, in the "traditional wisdom" of Aristotle. We are reminded of the fact that throughout history, wisdom has been the province of the few, not the many. But there are two reasons why Schumacher believes, with his rationalist enemies, that it is possible to change this situation so as to have both productive work and mass enlightenment.

In the first place, one sees why leisure and contemplation are not necessarily important if Schumacher’s use of the phrase "traditional wisdom" is understood properly. For while he is respectful of the difficulties of gaining true enlightenment, it is still the case that he believes he can tell us "all Ye know on earth and all ye need to know" in the 140 pages of the Guide, if not a single line of poetry. That is to say, despite Schumacher’s claim in the Guide to be writing philosophy, he is actually engaged in something quite different. The philosopher claims only to love or search for wisdom, not to have it, while Schumacher is claiming that all the wisdom or truth human beings need can already be found, in sufficiently unambiguous form to be broadly useful, in the "genuine traditions" of mankind. For him, it is enough for something to be false that "no sages or holy men in our or in anybody else’s history" believed it. (S, 108-9) The unexamined authority of the scientist is replaced by the unexamined authority of the sage.

This attitude towards wisdom is of a piece with his concern for work. While he speaks of the importance of spiritual "inner work," Schumacher is less interested in this inner process than in its results. His presentation in the Guide seems to suggest that it is enough to exhort people to "overcome the self" to get them to do it. The very title of the book, and its claim to allow us to see the world whole, prevents us from assuming that Schumacher’s intention is to spark interest such that we will search ourselves into more profound matters. He is looking for the authoritative inculcation of such sound doctrine as will best support sound work.

In the second place, the conjunction of spiritual enlightenment and material labor is made possible by Schumacher’s tacit acceptance of key elements of the modern technological project that he claims to be rejecting. In a remarkable concluding passage in the Guide, Schumacher points to the deep affinity between his own thought and the premises of modern technology:

[A] "turning around," a metanoia ... leads to seeing the world in a new light, namely, as a place where the things modern man con-
sinuously talks about and has always failed to accomplish can actually be done. The generosity of the Earth allows us to feed all mankind; we know enough about ecology to keep Earth a healthy place; there is enough room on Earth, and there are enough materials, so that everybody can have adequate shelter; we are quite competent enough to produce sufficient supplies of necessities so that no one need live in misery. (GP, 139-40, emphasis added)

This passage does not promise an automated utopia where human beings need only work for the joy of work or merely to "express themselves." It could be said that this passage moderates the message of modern materialism by speaking only of the prevention of "misery," provision of "adequate shelter," et cetera, and neither encouraging greed nor promising an ever-improving standard of living for all. But such a reading assumes that traditional wisdom can tell us once and for all how long we should live and of what we should die, how many calories we should have and from what kinds of food, and what kinds of homes we should live in. If this is the case, then Schumacher has misled us about transcending the antinomy between order and freedom: he would have clearly chosen order.

But it seems unlikely that he would make such a naive (though not uncommon) argument about what traditional wisdom teaches about needs, even though by avoiding it he falls into another difficulty. For if needs are to some extent relative to what can be done, and if, as we know is the case, Schumacher accepts the need for further technological development in order to accomplish what "modern man continually talks about," then his quarrel with the goals of materialism is slight indeed. The Bacon scholar Benjamin Farrington has described the heart of the technological project in a fashion which makes Schumacher's affinity with it evident:

In challenging men with such earnestness to win power over nature in order to improve the conditions of human life he [Bacon] kindled a new conscience in mankind.... Neither ancient Greek philosopher nor medieval Schoolman had in mind the possibility of a drastic improvement in the conditions of human life. Philosophy before Francis Bacon was too often a school of resignation. . . . Bacon's ambition was to reconstitute man's knowledge of nature in order to apply it to the relief of man's estate.

A closer comparison of this passage with Schumacher’s promise shows just how much he has absorbed of the ethos of modern technology. First, it is characteristic of modernity to believe that providing food, shelter, health, and so on are "problems" that have "solutions." It is all the more remarkable that the solutions promised by Schumacher are implicitly global solutions.

Second, while it is clear that Schumacher believes that we will all have to be engaged in productive work to meet his goals, that work will have been transformed to the extent that his promises are fulfilled. That is, the guarantee of food, shelter, and health removes from our labor at least the "knife’s edge" of necessity. We will be freed from the fear that the failure of our personal labor will bring disaster to us, even if in the broader scheme our work remains somehow necessary to the whole. Thus far, at least, we will have relieved our estate—and in comparison with the lives of most human beings in most times, this is quite far indeed.

Third, as regards the work required to maintain the needs of society as a whole, we should remember that Schumacher is not describing a relatively simple economy, but a complex and technologically sophisticated one. Large-scale enterprises are here to stay; they may even be necessary to make first-class tools. Think of the industrial "infra-structure" behind Schumacher’s own electric wheelbarrow, or behind a first-class shovel. It is amazing what technological wonders are behind the humble pencil that sketches out the preliminary plan for a new alternative technology, or the postal system that gets the plan to those who need it in a timely fashion. In comparison to the technological devices (to speak of "technology" only in the most obvious sense) called for by these "small" things, the absence of "large" nuclear power plants would hardly be a decisive indication that Schumacher had managed to cut technology "down to size."

Finally, the picture painted by these three points together is of a world much closer to the "new conscience" of the modern project than to the "resignation" of premodern thought to the extent that any constraints on our activities proposed by Schumacher are understood to come from our own choices and our own will. That is, even if Schumacher’s world were to come about just as he describes it, people would always know that the materialistic way of life rejected in Schumacher’s work was possible for them. If they accept "less" according to the standards of capitalism and liberalism, it is because that is what they want. Schumacher, along with the proponents of modern
technology, believes that we can simply mold our natural, economic, and political circumstances to fit our will. There are no ineluctable human problems, and no causes for resignation.

We seem to have come full circle in Schumacher’s thought, having returned to his initial emphasis on technology in order to understand how to reconcile his spiritual message with his stress on “system or machinery.” Schumacher’s claim to be able to accomplish the promises of the modern project he seemed to have rejected must have a crucial impact on our reading of the place of his picture of true human progress in his broader teaching. To this point it has been unclear why “Schumacher-the-moralist” needs “Schumacher-the-economist” and “Schumacher-the-technologist.” But now we see that the abiding concern for improvement of the material conditions of life represented by the latter two avatars, a concern that duplicates the fondest hopes of Descartes or Bacon, is not just the means to the ultimate goal of spiritual renewal, but the goal itself.

It is no coincidence that these worldly goals replace in Schumacher’s traditional wisdom the transcendent hopes that are in fact a part of so many religious traditions. For it is just in such hopes that these traditions have some of their most profound and irreconcilable differences and cannot be made into that happy amalgam of Schumacher’s “perennial philosophy” approach. In Schumacher’s substitution we recognize an important moment in the larger modern political project, which attempts to “de-fang” religious differences precisely by encouraging the common interest in worldly comforts, which is an end that, it is thought, all can agree on. But this concern is part and parcel of the materialism that, we had thought, Schumacher wanted to shun above all things.

One is tempted to say at this point that Schumacher has failed in his radical conservatism, i.e., in his attempt to return to an older tradition as a decisive alternative to present modes of thought, and that his work is just another working out of the premises of modern, technologically oriented thought. But at least this assertion needs to be rounded out by a final look at Schumacher’s own concern about the role of order and freedom as it applies to his picture of the world as he would like it to be.

We have seen how intermediate technology is defined less by its engineering attributes than by the antimaterialistic assumptions upon which it claims to build. Thus, Schumacher hopes to present us with a truly radical critique of the goals of capitalism and liberalism. In so doing, he properly stresses that the important questions of life are
questions of ends. Yet the "wisdom" he supplies to answer these questions implies that agreement among all men on ends is both possible and necessary. It has been suggested that this wisdom is not the decisive alternative to modernity that Schumacher sets out to find. But in addition, the agreement it calls for will have a decisive effect on the balance between order and freedom in Schumacher's understanding of the more "human" world to be created as the context for a more "humane" technology.

Given the uniformity of ends, the only realm of diversity left concerns means. But what kind of freedom is it that is confined to means only? It is just the advantage of functionalism over capitalism that, once there is a clear idea of the whole, it is possible to create the relevant division of society into functions and to decide what functions serve society. In this way, the supposed unreason that is a consequence of private property is avoided. Thus, questions of means that were once left to individuals become in this new context susceptible to management. The stage is set for a global society in which at the very least there is a presumption in favor of the organization of all aspects of life—an organization based on the edifying sayings of the wise and/or the satisfaction for all of a supposed "basic" need. Schumacher's disdain for liberalism's failure to improve human beings and capitalism's encouragement of greed and private regard- ingness suggests that he accepts these consequences.

Traditional wisdom's effect in Schumacher's thinking is to bring us back to Tawney's "totalitarian" vision of a society built up with the same orderliness as the spheres of Dante's heaven. But when paradise is in this world, purchased with the coin of technological development and based on the overcoming of nature, will the result be as happy as what we find in Paradiso? The "problem" of the unreason of the private realm is more closely connected with the freedom Schumacher espouses than he would like to admit. His own choices suggest that that freedom is likely also to be fragile in the face of a clamor for the benefits promised by technological development. Schumacher is not only unable to confront adequately the goals of the modern technological project, but in the guise of premodern "traditional wisdom" he adopts them as his own in such a way as to endanger that in which he claims to believe.

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