



# The Mantle of Science

## By Murray N. Rothbard

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In our proper condemnation of scientism in the study of man, we should not make the mistake of dismissing *science* as well. For if we do so, we credit scientism too highly and accept at face value its claim to be the one and only scientific method. If scientism is, as we believe it to be, an improper method, then it cannot be truly scientific. Science, after all, means *scientia*, correct knowledge; it is older and wiser than the positivist-pragmatist attempt to monopolize the term.

Scientism is the profoundly unscientific attempt to transfer uncritically the methodology of the physical sciences to the study of human action. Both fields of inquiry must, it is true, be studied by the use of reason—the mind's identification of reality. But then it becomes crucially important, in reason, not to neglect the critical attribute of human action: that, alone in nature, human beings possess a rational consciousness. Stones, molecules, planets cannot *choose* their courses; their behavior is strictly and mechanically determined for them. Only human beings possess free will and consciousness: for they are conscious, and they can, and indeed must, choose their course of action.<sup>1</sup> To ignore this primordial fact about the nature of man—to ignore his volition, his free will—is to misconstrue the facts of reality and therefore to be profoundly and radically unscientific.

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<sup>1</sup>Human action, therefore, does not occur apart from cause; a human being must choose at any given moment, although the contents of the choice are *self*-determined.

Man's necessity to choose means that, at any given time, he is acting to bring about some end in the immediate or distant future, that is, that he has purposes. The steps that he takes to achieve his ends are his *means*. Man is born with no innate knowledge of what ends to choose or how to use which means to attain them. Having no inborn knowledge of how to survive and prosper, he must learn what ends and means to adopt, and he is liable to make errors along the way. But only his reasoning mind can show him his goals and how to attain them.

We have already begun to build the first blocks of the many-storied edifice of the true sciences of man—and they are all grounded on the fact of man's volition.<sup>2</sup> On the formal fact that man uses means to attain ends we ground the science of *praxeology*, or economics; *psychology* is the study of how and why man chooses the contents of his ends; *technology* tells what concrete means will lead to various ends; and *ethics* employs all the data of the various sciences to guide man toward the ends he should seek to attain, and therefore, by imputation, toward his proper means. None of these disciplines can make any sense whatever on scientific premises. If men are like stones, if they are not purposive beings and do not strive for ends, then there is no economics, no psychology, no ethics, no technology, no science of man whatever.

### ***The Problem of Free Will***

Before proceeding further, we must pause to consider the validity of free will, for it is curious that the determinist dogma has so often been accepted as the uniquely scientific position. And while many philosophers have demonstrated the existence of free will, the concept has all too rarely been applied to the "social sciences."

In the first place, each human being knows universally from introspection that he chooses. The positivists and behaviorists may scoff at introspection all they wish, but it remains true that the introspective knowledge of a conscious man that he is conscious and acts is a fact of reality. What, indeed, do the determinists have to offer to set against introspective fact? Only a poor and misleading analogy from the physical sciences. It is true that all mindless matter is determined and purposeless. But it is highly inappropriate, and moreover question-begging, simply and uncritically to apply the model of physics to man.

Why, indeed, should we accept determinism in nature? The reason we say that things are determined is that every existing thing must have a *specific* existence. Having a *specific* existence, it must have certain definite, definable, delimitable attributes, that is, every thing must have a *specific nature*. Every being, then, can act or behave only in accordance with its nature, and any two beings can interact only in accord with their respective natures. Therefore, the actions of every being are caused by, determined by, its nature.<sup>3</sup>

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<sup>2</sup>The sciences which deal with the functioning of man's automatic organs—physiology, anatomy, and so on—may be included in the physical sciences, for they are not based on man's will—although even here, psychosomatic medicine traces definite causal relations stemming from man's choices.

<sup>3</sup>See Andrew G. Van Melsen, *The Philosophy of Nature* (Pittsburgh: Duquesne University Press, 1953), pp. 208ff.,

But while most things have no consciousness and therefore pursue no goals, it is an essential attribute of *man's* nature that he has consciousness, and therefore that his actions are self-determined by the choices his mind makes.

At very best, the application of determinism to man is just an agenda for the future. After several centuries of arrogant proclamations, no determinist has come up with anything like a theory determining all of men's actions. Surely the burden of proof must rest on the one advancing a theory, particularly when the theory contradicts man's primary impressions. Surely we can, at the very least, tell the determinists to keep quiet until they can offer their determinations—including, of course, their advance determinations of each of our reactions to their determining theory. But there is far more that can be said. For determinism, as applied to man, is a self-contradictory thesis, since the man who employs it relies implicitly on the existence of free will.

If we are determined in the ideas we accept, then *X*, the determinist, is determined to believe in determinism, while *Y*, the believer in free will, is also determined to believe in his own doctrine. Since man's mind is, according to determinism, not free to think and come to conclusions about reality, it is absurd for *X* to try to convince *Y* or anyone else of the truth of determinism. In short, the determinist must rely, for the spread of his ideas, on the nondetermined, free-will choices of others, on their free will to adopt or reject ideas.<sup>4</sup> In the same way, the various brands of determinists—behaviorists, positivists, Marxists, and so on—implicitly claim special exemption for themselves from their own determined systems.<sup>5</sup> But if a man cannot affirm a proposition without employing its negation, he is not only caught in an inextricable self-contradiction; *he is conceding to the negation the status of an axiom.*<sup>6</sup>

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235ff. While free will must be upheld for man, determination must be equally upheld for physical nature. For a critique of the recent fallacious notion, based on the Heisenberg Uncertainty Principle, that atomic or sub-atomic particles have "free will," see Ludwig von Mises, *Theory and History* (New Haven, Conn.: Yale University Press, 1957), pp. 87-92; and Albert H. Hobbs, *Social Problems and Scientism* (Harrisburg, Penn.: Stackpole, 1953), pp. 220-32.

<sup>4</sup>"Even the controversial writings of the mechanists themselves appear to be intended for readers endowed with powers of choice. In other words, the determinist who would win others to his way of thinking must write as if he himself, and his readers at least, had freedom of choice, while all the rest of mankind are mechanistically determined in thought and in conduct." Francis L. Harnon, *Principles of Psychology* (Milwaukee: Bruce Publishing, 1938), p. 487, and pp. 493-99. Also see Joseph D. Hassett, S.J., Robert A. Mitchell, S.J., and J. Donald Monan, S.J., *The Philosophy of Human Knowing* (Westminster, Maryland: Newman Press, 1953), pp. 72-73.

<sup>5</sup>See Mises, *Theory and History*, pp. 258-60; and Mises, *Human Action* (New Haven: Yale University Press, 1949), pp. 74ff.

<sup>6</sup>Phillips therefore calls this attribute of an axiom a "boomerang principle...for even though we cast it away from us, it returns to us again," and illustrates by showing that an attempt to deny the Aristotelian law of noncontradiction must end by assuming it. R.P. Phillips, *Modern Thomistic Philosophy* (Westminster, Maryland: Newman Bookshop, 1934-35), 2, pp. 36-37. Also see John J. Toohey, S.J., *Notes on Epistemology* (Washington, D.C.: Georgetown University Press, 1952), *passim*, and Murray N. Rothbard, "In Defense of 'Extreme Apriorism'," *Southern Economic Journal* (January 1957): p. 318.

A corollary self-contradiction: the determinists profess to be able, some day, to determine what man's choices and actions will be. But, on their own grounds, their own knowledge of this determining theory is itself determined. How then can they aspire to know *all*, if the extent of their *own* knowledge is itself determined, and therefore arbitrarily delimited? In fact, if our ideas are determined, then we have no way of freely revising our judgments and of learning truth—whether the truth of determinism or of anything else.<sup>7</sup>

Thus, the determinist, to advocate his doctrine, must place himself and his theory outside the allegedly universally determined realm, that is, he must employ free will. This reliance of determinism on its negation is an instance of a wider truth: that it is self-contradictory to use reason in any attempt to deny the validity of reason as a means of attaining knowledge. Such self-contradiction is implicit in such currently fashionable sentiments as "reason shows us that reason is weak," or "the more we know, the more we know how little we know."<sup>8</sup>

Some may object that man is not really free because he must obey natural laws. To say that man is not free because he is not able to do anything he may possibly desire, however, confuses freedom and power.<sup>9</sup> It is clearly absurd to employ as a definition of "freedom" the power of an entity to perform an impossible action, to violate its nature.<sup>10</sup>

Determinists often imply that a man's ideas are necessarily determined by the ideas of others, of "society." Yet A and B can hear the same idea propounded; A can adopt it as valid while B will not. Each man, therefore, has the free choice of adopting or not adopting an idea or value. It is true that many men may uncritically adopt the ideas of others; yet this process cannot regress infinitely. At some point in time, the idea originated, that is, the idea was *not* taken from others, but was arrived at by some mind independently and creatively. This is logically necessary for any given idea. "Society," therefore, cannot dictate ideas. If someone grows up in a world where people generally believe that "all redheads are demons," he is free, as he grows up, to rethink the

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<sup>7</sup>In the course of a critique of determinism, Phillips wrote: "What purpose...could advice serve if we were unable to revise a judgment we had formed, and so act in a different way to which we at first intended?" Phillips, *Modern Thomistic Philosophy*, 1, p. 282. For stress on free will as freedom to think, to employ reason, see Robert L. Humphrey, "Human Nature in American Thought," *Political Science Quarterly* (June 1954): 269ff; J.F. Leibell, ed., *Readings in Ethics* (Chicago: Loyola University Press, 1926), pp. 90, 103, 109; Robert Edward Brennan, O.P. *Thomistic Psychology* (New York: Macmillan, 1941), pp. 221-22.; Van Melsen, *The Philosophy of Nature*, pp. 235-36; and Mises, *Theory and History*, pp. 177-179.

<sup>8</sup>"A man involves himself in a contradiction when he uses the reasoning of the intellect to prove that that reasoning cannot be relied upon." Toohey, *Notes on Epistemology*, p. 29. Also see Phillips, *Modern Thomistic Philosophy*, 2, p. 16; and Frank Thilly, *A History of Philosophy* (New York: Henry Holt, 1914), p. 586.

<sup>9</sup>See F.H. Hayek, *The Road to Serfdom* (Chicago: University of Chicago Press, 1944), p. 26.

<sup>10</sup>John G. Vance, "Freedom," quoted in Leibell, *Readings in Ethics*, pp. 98-100. Also see Van Melsen, *The Philosophy of Nature*, p. 236, and Michael Maher, *Psychology*, quoted in Leibell, *Readings in Ethics*.

problem and arrive at a different conclusion. If this were not true, ideas, once adopted, could never have been changed. We conclude, therefore, that true science decrees determinism for physical nature and free will for man, and for the same reason: that every thing must act in accordance with its specific nature. And since men are free to adopt ideas and to act upon them, it is never events or stimuli external to the mind that *cause* its ideas; rather the mind freely adopts ideas about external events. A savage, an infant, and a civilized man will each react in entirely different ways to the sight of the same stimulus—be it a fountain pen, an alarm clock, or a machine gun, for each mind has different ideas about the object's meaning and qualities.<sup>11</sup> Let us therefore never again say that the Great Depression of the 1930s *caused* men to adopt socialism or interventionism (or that poverty *causes* people to adopt Communism). The depression existed, and men were moved to think about this striking event; but that they adopted socialism or its equivalent as the way out was not determined by the event; they might just as well have chosen *laissez-faire* or Buddhism or any other attempted solution. The deciding factor was the *idea* that people chose to adopt.

What *led* the people to adopt particular ideas? Here the historian may enumerate and weigh various factors, but he must always stop short at the ultimate freedom of the will. Thus, in any given matter, a person may freely decide either to think about a problem independently or to accept uncritically the ideas offered by others. Certainly, the bulk of the people, especially in abstract matters, choose to follow the ideas offered by the intellectuals. At the time of the Great Depression, there was a host of intellectuals offering the nostrum of statism or socialism as a cure for the depression, while very few suggested *laissez-faire* or absolute monarchy.

The realization that ideas, freely adopted, determine social institutions, and not *vice versa*, illuminates many critical areas of the study of man. Rousseau and his host of modern followers, who hold that man is good, but corrupted by his institutions, must finally wither under the query: And who but *men* created these institutions? The tendency of many modern intellectuals to worship the primitive (also the childlike—especially the child "progressively" educated—the "natural" life of the noble savage of the South Seas, and so on) has perhaps the same roots. We are also told repeatedly that differences between largely isolated tribes and ethnic groups are "culturally determined": tribe X being intelligent or peaceful because of its X-culture; tribe Y, dull or warlike because of Y-culture. If we fully realize that the men of each tribe created its own culture (unless we are to assume its creation by some mystic *deus ex machina*), we see that this popular "explanation" is no better than explaining the sleep-inducing properties of opium by its "dormitive power." Indeed, it is worse, because it adds the error of social determinism.

It will undoubtedly be charged that this discussion of free will and determinism is "one-sided" and that it leaves out the alleged fact that all of life is multicausal and interdependent. We must not forget, however, that the very goal of science is simpler explanations of wider phenomena. In this case, we are confronted with the fact that there can logically be only one *ultimate sovereign* over a man's actions: either his own free will or some cause outside that will. There is no other

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<sup>11</sup>Thus, cf., C.I. Lewis, *Mind and the World Order* (New York: Dover Publications, 1956), pp. 49-51.

alternative, there is no middle ground, and therefore the fashionable eclecticism of modern scholarship must in this case yield to the hard realities of the Law of the Excluded Middle. If free will has been vindicated, how can we prove the existence of consciousness itself? The answer is simple: to prove means to make evident something not yet evident. Yet some propositions may be already evident to the self, that is, self-evident. A self-evident axiom, as we have indicated, will be a proposition which cannot be contradicted without employing the axiom itself in the attempt. And the existence of consciousness is not only evident to all of us through direct introspection, but is also a fundamental axiom, for the very act of doubting consciousness must itself be performed by a consciousness.<sup>12</sup> Thus, the behaviorist who spurns consciousness for "objective" laboratory data must rely on the consciousness of his laboratory associates to report the data to him.

The key to scientism is its denial of the existence of individual consciousness and will.<sup>13</sup> This takes two main forms: applying mechanical analogies from the physical sciences to individual men, and applying organismic analogies to such fictional collective wholes as "society." The latter course attributes consciousness and will, not to individuals, but to some collective organic whole of which the individual is merely a determined cell. Both methods are aspects of the rejection of individual consciousness.

### ***The False Mechanical Analogies of Scientism***

The scientific method in the study of man is almost wholly one of building on analogies from the physical sciences. Some of the common mechanistic analogies follow.

*Man as Servomechanism:* Just as Bertrand Russell, one of the leaders of scientism, reverses reality by attributing determinism to men, and free will to physical particles, so it has recently become the fashion to say that modern machines "think," while man is merely a complex form of machine, or "servomechanism."<sup>14</sup> What is overlooked here is that machines, no matter how complex, are simply devices made by man to serve man's purposes and goals; their actions are preset by their creators, and the machines can never act in any other way or suddenly adopt new goals and act upon them. They cannot do so, finally, because the machines are not alive and are therefore certainly not conscious. If men are machines, on the other hand, then the determinists, in addition to meeting the above critique, must answer the question: Who created *men* and for what purpose?—a rather embarrassing question for materialists to answer.<sup>15</sup>

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<sup>12</sup>See Hassett, Mitchell, and Monan, *The Philosophy of Human Knowing*, pp. 33-35. also see Phillips, *Modern Thomistic Philosophy*, 1, pp. 50-51; Toohey, *Notes on Epistemology*, pp. 5, 36, 101, and 107-8; and Thilly, *A History of Philosophy*, p. 363.

<sup>13</sup>Professor Strausz-Hupe also makes this point in his paper, "Social Science Versus the Obsession of Scientism," in Schoeck and Wiggins, eds., *Scientism and Values*.

<sup>14</sup>Mises, *Theory and History*, p. 92.

<sup>15</sup>"A machine is a device made by man. It is the realization of a design and it runs precisely according to the plan of

*Social Engineering*: This term implies that men are no different from stones or other physical objects, and therefore that they should be blueprinted and reshaped in the same way as objects by "social" engineers. When Rex Tugwell wrote in his famous poem during the flush days of the New Deal:

I have gathered my tools and my charts,  
My plans are finished and practical.  
I shall roll up my sleeves—make America over,

one wonders whether his admiring readers thought themselves to be among the directing engineers or among the raw material that would be "made over."<sup>16</sup>

*Model-Building*: Economics, and recently political science, have been beset by a plague of "model-building."<sup>17</sup> People do not construct theories any more; they "build" models of the society or economy. Yet no one seems to notice the peculiar inaptness of the concept. An engineering model is an exact replica, in miniature, that is, in exact quantitative proportion, of the relationships existing in the given structure in the real world; but the "models" of economic and political theory are simply a few equations and concepts which, at very best, could only approximate a few of the numerous relations in the economy or society.

*Measurement*: The Econometric Society's original motto was "Science is measurement," this ideal having been transferred intact from the natural sciences. The frantic and vain attempts to measure intensive psychic magnitudes in psychology and in economics would disappear if it were realized that the very concept of measurement implies the necessity for an objective *extensive* unit to serve as a measure. But the magnitudes in consciousness are necessarily *intensive* and therefore not capable of measurement.<sup>18</sup>

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its authors. What produces the product of its operation is not something within it but the purpose the constructor wanted to realize by means of its construction. It is the constructor and operator who create and produce, not the machine. To ascribe to a machine any activity is anthropomorphism and animism. The machine... does not move; it is put into motion by men." *Ibid.*, pp. 94—95.

<sup>16</sup>See *ibid.*, pp. 249—50.

<sup>17</sup>On this and many other points in this paper I am greatly indebted to Professor Ludwig von Mises and to his development of the science of praxeology. See Ludwig von Mises, "Comment about the Mathematical Treatment of Economic Problems," *Studium Generale*, 4, no. 2 (1953); Mises, *Human Action, passim*; and Mises, *Theory and History*, pp. 240—63. The foundations of praxeology as a method were laid by the English classical economist, Nassau Senior. Unfortunately, the positivistic John Smart Mill's side other methodological debate became much better known than Senior's. See Marian Rowley, *Nassau Senior and Classical Economics* (New York: Augustus M. Kelley, 1949), chap. 1, esp. pp. 64—65.

<sup>18</sup>For a critique of recent attempts to fashion a new theory of measurement for intensive magnitudes, see Murray N. Rothbard, "Toward a Reconstruction of Utility and Welfare Economics," in *On Freedom and Free Enterprise: Essays in Honor of Ludwig von Mises*, Mary Sennholz, ed. (Princeton, N.J.: D. Van Nostrand, 1956), pp. 241—43.

*The Mathematical Method*: Not only measurement but the use of mathematics in general in the social sciences and philosophy today, is an illegitimate transfer from physics. In the first place, a mathematical equation implies the existence of quantities that can be equated, which in turn implies a unit of measurement for these quantities. Second, mathematical relations are *functional*; that is, variables are interdependent, and identifying the causal variable depends on which is held as given and which is changed. This methodology is appropriate in physics, where entities do not themselves provide the causes for their actions, but instead are determined by discoverable quantitative laws of their nature and the nature of the interacting entities. But in human action, the free-will choice of the human consciousness is the cause, and this cause generates certain effects. The mathematical concept of an interdetermining "function" is therefore inappropriate.

Indeed, the very concept of "variable" used so frequently in econometrics is illegitimate, for physics is able to arrive at laws only by discovering *constants*. The concept of "variable," only makes sense if there are some things that are *not* variable, but constant. Yet in human action, free will precludes any quantitative constants (including constant units of measurement). All attempts to discover such constants (such as the strict quantity theory of money or the Keynesian "consumption function") were inherently doomed to failure.

Finally such staples of mathematical economics as the calculus are completely inappropriate for human action because they assume infinitely small continuity; while such concepts may legitimately describe the completely determined path of a physical particle, they are seriously misleading in describing the willed action of a human being. Such willed action can occur only in discrete, non-infinitely-small steps, steps large enough to be perceivable by a human consciousness. Hence the continuity assumptions of calculus are inappropriate for the study of man.

Other metaphors bodily and misleadingly transplanted from physics include: "equilibrium," "elasticity," "statics and dynamics," "velocity of circulation," and "friction." "Equilibrium" in physics is a state in which an entity remains; but in economics or politics there is never really such an equilibrium state existing; there is but a *tendency* in that direction. Moreover, the term "equilibrium" has emotional connotations, and so it was only a brief step to the further mischief of holding up equilibrium as not only possible, but as the ideal by which to gauge all existing institutions. But since man, by his very nature, must keep acting, he cannot be in equilibrium while he lives, and therefore the ideal, being impossible, is also inappropriate.

The concept of "friction" is used in a similar way. Some economists, for example, have assumed that men have "perfect knowledge," that the factors of production have "perfect mobility," and so on, and then have airily dismissed all difficulties in applying these absurdities to the real world as simple problems of "friction," just as the physical sciences bring in friction to add to their "perfect" framework. These assumptions in fact make *omniscience* the standard or ideal, and this cannot exist by the nature of man.

### *The False Organismic Analogies of Scientism*

The organismic analogies attribute consciousness, or other organic qualities, to "social wholes" which are really only labels for the interrelations of individuals.<sup>19</sup> Just as in the mechanistic metaphors, individual men are subsumed and determined, here they become mindless cells in some sort of social organism. While few people today would assert flatly that "society is an organism," most social theorists hold doctrines that imply this. Note, for example, such phrases as: "Society determines the values of its individual members"; or "The individual's actions are determined by the role he plays in the group to which he belongs," and so on. Such concepts as "the public good," "the common good," "social welfare," and so on, are also endemic. All these concepts rest on the implicit premise that there exists, somewhere, a living organic entity known as "society," "the group," "the public," "the community," and that that entity has values and pursues ends.

Not only are these terms held up as living entities; they are supposed to exist *more* fundamentally than mere individuals, and certainly "their" goals take precedence over individual ones. It is ironic that the self-proclaimed apostles of "science" should pursue the sheer mysticism of assuming the living reality of these concepts.<sup>20</sup> Such concepts as "public good," "general welfare," and so on, should, therefore, be discarded as grossly unscientific, and the next time someone preaches the priority of "public good" over the individual good, we must ask: Who is the "public" in this case? We must remember that in the slogan justifying the public debt that rose to fame in the 1930s: "We owe it only to ourselves," it makes a big difference for every man whether he is a member of the "we" or of the "ourselves."<sup>21</sup>

A similar fallacy is committed, alike by friends and by foes of the market economy, when the market is called "impersonal." Thus, people often complain that the market is too "impersonal" because it does not grant to them a greater share of worldly goods. It is overlooked that the "market" is not some sort of living entity making good or bad decisions, but is simply a label for individual persons and their voluntary interactions. If A thinks that the "impersonal market" is not paying him enough, he is *really* saying that individuals B, C, and D are not willing to pay him as much as he would like to receive. The "market" is individuals acting. Similarly, if B thinks that the "market" is not paying A enough, B is perfectly free to step in and supply the difference. He is not blocked in this effort by some monster named "market."

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<sup>19</sup>On the fallacy of conceptual realism (or Platonic ultra-realism) involved here, and on the necessity for methodological individualism, see F.A. Hayek, *The Counter-Revolution of Science* (Glencoe, Ill.: The Free Press, 1952), *passim*, and Mises, *Human Action*, pp. 41ff. and 45.

<sup>20</sup>We may therefore say with Frank Chodorov that "society are people." Frank Chodorov, *Society Are People* (Philadelphia: Intercollegiate Society of Individualists, n.d.). For a critique of the mystique of "society," see Mises, *Theory and History*, pp. 250ff.

<sup>21</sup>See the delightful essay by Frank Chodorov, "We Lose It to Ourselves," *Analysis* (June 1950): p. 3.

One example of the widespread use of the organismic fallacy is in discussions of international trade. Thus, during the gold-standard era, how often did the cry go up that "England" or "France" or some other country was in mortal danger because "it" was "losing gold? What was actually happening was that Englishmen or Frenchmen were voluntarily shipping gold overseas and thus threatening the banks in those countries with the necessity of meeting obligations (to pay in gold) which they could not possibly fulfill. But the use of the organismic metaphor converted a grave problem of banking into a vague national crisis for which every citizen was somehow responsible.<sup>22</sup>

So far we have been discussing those organismic concepts which assume the existence of a fictive consciousness in some collective whole. There are also numerous examples of other misleading biological analogies in the study of man. We hear much, for example, of "young" and "old" nations, as if an American aged twenty is somehow "younger" than a Frenchman of the same age. We read of "mature economies," as if an economy must grow rapidly and then become "mature." The current fashion of an "economics of growth" presumes that every economy is somehow destined, like a living organism, to "grow" in some predetermined manner at a definite rate. (In the enthusiasm it is overlooked that too many economies "grow" backward.) That all of these analogies are attempts to negate individual will and consciousness has been pointed out by Mrs. Penrose. Referring to biological analogies as applied to business firms, she writes:

where explicit biological analogies crop up in economics they are drawn exclusively from that aspect of biology which deals with the nonmotivated behavior of organisms . . . So it is with the life-cycle analogy. We have no reason whatever for thinking that the growth pattern of a biological organism is *willed* by the organism itself. On the other hand, we have every reason for thinking that the growth of a firm is willed by those who make the decisions of the firm . . . and the proof of this lies in the fact that no one can describe the development of any given firm . . . except in terms of decisions taken by individual men.<sup>23</sup>

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<sup>22</sup>A similar error of metaphor prevails in foreign policy matters. Thus: "When one uses the simple monosyllabic 'France' one thinks of France as a unit, an entity. When. . . we say 'France sent *her* troops to conquer Tunis'—we impute not only unity but personality to the country. The very words conceal the facts and make international relations a glamorous drama in which personalized nations are the actors, and all too easily we forget the flesh-and-blood men and women who are the true actors. . . if we had no such word as 'France' . . . then we should more accurately describe the Tunis expedition in some such way as this: 'A few of...thirty-eight million persons sent thirty thousand others to conquer Tunis.' This way of putting the fact immediately suggests a question, or rather a series of questions. Who are the 'few'? Why did they send the thirty thousand to Tunis? And why did these obey? Empire-building is done not by 'nations,' but by men. The problem before us is to discover the men, the active, interested minorities in each nation, who are directly interested in imperialism and then to analyze the reasons why the majorities pay the expenses and fight the wars." Parker Thomas Moon, *Imperialism and World Politics* (New York: Macmillan, 1930), p. 58.

<sup>23</sup>Edith Tilton Penrose, "Biological Analogies in the Theory of the Firm," *American Economic Review* (December 1952): p. 808.

### *Axioms and Deduction*

The fundamental axiom, then, for the study of man is the existence of individual consciousness, and we have seen the numerous ways in which scientism tries to reject or avoid this axiom. Not being omniscient, a man must learn; he must ever adopt ideas and act upon them, choosing ends and the means to attain these ends. Upon this simple fundamental axiom a vast deductive edifice can be constructed. Professor Mises has already done this for economics, which he has subsumed under the science of praxeology: this centers on the universal formal fact that all men use means for chosen ends, without investigating the processes of the concrete choices or the justification for them. Mises has shown that the entire structure of economic thought can be deduced from this axiom (with the help of a very few subsidiary axioms).<sup>24</sup>

Since the fundamental and other axioms are qualitative by nature, it follows that the propositions deduced by the laws of logic from these axioms are also qualitative. The laws of human action are therefore qualitative, and, in fact, it should be clear that free will precludes quantitative laws. Thus, we may set forth the absolute economic law that an increase in the supply of a good, given the demand, will lower its price; but if we attempted to prescribe with similar generality *how much* the price would fall, given a definite increase in supply, we would shatter against the free-will rock of varying valuations by different individuals.

It goes without saying that the axiomatic-deductive method has been in disrepute in recent decades, in all disciplines but mathematics and formal logic—and even here the axioms are often supposed to be a mere convention rather than necessary truth. Few discussions of the history of philosophy or scientific method fail to make the ritual attacks on old-fashioned argumentation from self-evident principles. And yet the disciples of scientism themselves implicitly assume as self-evident not what cannot be contradicted, but simply that the methodology of physics is the only truly scientific methodology. This methodology, briefly, is to look at facts, then frame ever more general hypotheses to account for the facts, and then to test these hypotheses by experimentally verifying other deductions made from them. But this method is appropriate only in the physical sciences, where we begin by knowing external sense data and then proceed to our task of trying to find, as closely as we can, the causal laws of behavior of the entities we perceive. We have no way of knowing these laws directly; but fortunately we may verify them by performing controlled laboratory experiments to test propositions deduced from them. In these experiments we can vary one factor, while keeping all other relevant factors constant. Yet the process of accumulating knowledge in physics is always rather tenuous; and, as has happened, as we become more and more abstract, there is greater possibility that some other explanation will be devised which fits more of the observed facts and which may then replace the older theory.

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<sup>24</sup>In his *Human Action*. For a defense of this method, see Chapter 6, this volume; and Rothbard, "Praxeology: Reply to Mr. Schuller," *American Economic Review* (December 1951): pp. 943-46.

In the study of human action, on the other hand, the proper procedure is the reverse. Here we *begin* with the primary axioms; we know that men are the causal agents, that the ideas they adopt by free will govern their actions. We therefore begin by fully knowing the abstract axioms, and we may then build upon them by logical deduction, introducing a few subsidiary axioms to limit the range of the study to the concrete applications we care about. Furthermore, in human affairs, the existence of free will prevents us from conducting any controlled experiments; for people's ideas and valuations are continually subject to change, and therefore nothing can be held constant. The proper theoretical methodology in human affairs, then, is the axiomatic-deductive method. The laws deduced by this method are *more*, not less, firmly grounded than the laws of physics; for since the ultimate causes are known directly as true, their consequents are also true. One of the reasons for the scientific hatred of the axiomatic-deductive method is historical. Thus, Dr. E.C. Harwood, inveterate battler for the pragmatic method in economics and the social sciences, criticizes Mises as follows:

Like the Greeks, Dr. Mises disparages change. "Praxeology is not concerned with the changing content of acting, but with its pure form and categorical structure." No one who appreciates the long struggle of man toward more adequate knowing would criticize Aristotle for his adoption of a similar viewpoint 2,000 years ago, but, after all, that *was* 2,000 years ago; surely economists can do better than seek light on their subject from a beacon that was extinguished by the Galilean revolution in the 17th century.<sup>25</sup>

Apart from the usual pragmatist antagonism to the apodictic laws of logic, this quotation embodies a typical historiographical myth. The germ of truth in the historical picture of the noble Galileo *versus* the antiscientific Church consists largely in two important errors of Aristotle: (a) he thought of physical entities as acting teleologically, and thus in a sense as being causal agents; and (b) he necessarily had no knowledge of the experimental method, which had not yet been developed, and therefore thought that the axiomatic-deductive-qualitative method was the only one appropriate to the *physical* as well as the human sciences. When the seventeenth century enthroned quantitative laws and laboratory methods, the partially justified repudiation of Aristotle in physics was followed by the unfortunate expulsion of Aristotle and his methodology from the human sciences as well.<sup>26</sup> This is true apart from historical findings that the Scholastics of the Middle Ages were the forerunners, rather than the obscurantist enemies, of experimental physical science.<sup>27</sup>

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<sup>25</sup>E.C. Harwood, *Reconstruction of Economics* (Great Barrington, Mass.: American Institute for Economic Research, 1955), p. 39. On this and other examples of scientism, see Leland B. Yeager, "Measurement as Scientific Method in Economics," *American Journal of Economics and Sociology* (July 1957): 337. Also see Yeager, "Reply to Col. Harwood," *ibid.* (October 1957): 104-6. As Yeager wisely concludes, "Anthropomorphism, rightly scorned in the natural sciences as prescientific metaphysics, is justified in economics because economics is about human action."

<sup>26</sup>Van Melsen, *The Philosophy of Nature*, pp. 54-58, 1-16.

<sup>27</sup>As Schumpeter declared: "The scholastic science of the Middle Ages contained all the genus of the laical science of the Renaissance." The experimental method was used notably by Friar Roger Bacon and Peter of Maricourt in the thirteenth century; the heliocentric system of astronomy originated *inside* the Church (Cusanus was a cardinal and

One example of concrete law deduced from our fundamental axiom is as follows: Since all action is determined by the choice of the actor, any particular act demonstrates a person's preference for this action. From this it follows that if A and B voluntarily agree to make an exchange (whether the exchange be material or spiritual), both parties are doing so because they expect to benefit.<sup>28</sup>

### ***Science and Values: Arbitrary Ethics***

Having discussed the properly scientific, as contrasted to the scientific, approach to the study of man, we may conclude by briefly considering the age-old question of the relationship between science and values. Ever since Max Weber, the dominant position in the social sciences, at least *de jure*, has been *Wertfreiheit*: that science itself must not make value judgments, but confine itself to judgments of fact, since ultimate ends can be only sheer personal preference not subject to rational argument. The classical philosophical view that a rational (that is, in the broad sense of the term, a "scientific") ethic is possible has been largely discarded. As a result, the critics of *Wertfreiheit*, having dismissed the possibility of rational ethics as a separate discipline, have taken to smuggling in arbitrary, *ad hoc* ethical judgments through the back door of each particular science of man. The current fashion is to preserve a façade of *Wertfreiheit*, while casually adopting value judgments, not as the scientist's own decision, but as the consensus of the values of others. Instead of choosing his own ends and valuing accordingly, the scientist supposedly maintains his neutrality by adopting the values of the bulk of society. In short, to set forth one's own values is now considered biased and "nonobjective," while to adopt uncritically the slogans of other people is the height of "objectivity." Scientific objectivity no longer means a man's pursuit of truth wherever it may lead, but abiding by a Gallup poll of other, less informed subjectivities.<sup>29</sup>

The attitude that value judgments are self-evidently correct because "the people" hold them permeates social science. The social scientist often claims that he is merely a technician, advising his clients—the public—how to attain their ends, whatever they may be. And he believes that thereby he can take a value position without really committing himself to any values of his own. An example from a recent public finance textbook (an area where the economic scientist must constantly confront ethical problems):

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Copernicus a canonist); and the Benedictine monks led the way in developing medieval engineering. See Joseph A. Schumpeter, *History of Economic Analysis* (New York: Oxford University Press, 1954), pp. 81ff.; and Lynn White, Jr., "Dynamo and Virgin Reconsidered," *The American Scholar* (Spring 1958): 183—212.

<sup>28</sup>For a refutation of the charge that this is a circular argument, see Rothbard, "Toward a Reconstruction of Utility and Welfare Economics"

<sup>29</sup>When they [the practical scientists] remember their vows of objectivity, they get other people to make their judgments for them." Anthony Standen, *Science Is a Sacred Cow* (New York: E.P. Dutton, 1958), p. 165.

The present-day justification for the ability principle (among economists) is simply the fact that . . . it is in accord with consensus of attitudes toward equity in the distribution of real income and of tax burden. Equity questions always involve value judgments, and tax structures can be evaluated, from an equity standpoint, only in terms of their relative conformity with the consensus of thought in the particular society with respect to equity.<sup>30</sup>

But the scientist cannot thereby escape making value judgments of his own. A man who knowingly advises a criminal gang on the best means of safe-cracking is thereby implicitly endorsing the end: safe-cracking. He is an accessory before the fact. An economist who advises the public on the most efficient method of obtaining economic equality is endorsing the end of economic equality. The economist who advises the Federal Reserve System how most expeditiously to manage the economy is thereby endorsing the existence of the system and its aim of stabilization. A political scientist who advises a government bureau on how to reorganize its staff for greater efficiency (or less inefficiency) is thereby endorsing the existence and the success of that bureau. To be convinced of this, consider what the proper course would be for an economist who *opposes* the existence of the Federal Reserve System, or the political scientist who would like to see the liquidation of the bureau. Wouldn't he be betraying his principles if he helped what he is against to become more efficient? Wouldn't his proper course either be to refuse to advise it, or perhaps to promote its *inefficiency*—on the grounds of the classical remark by a great American industrialist (speaking of government corruption): "Thank God that we don't get as much government as we pay for"?

It should be realized that values do not become true or legitimate because many people hold them; and their popularity does not make them self-evident. Economics abounds in instances of arbitrary values smuggled into works the authors of which would never think of engaging in ethical analysis or propounding an ethical system. The virtue of equality, as we have indicated, is simply taken for granted without justification; and it is established, not by sense perception of reality or by showing that its negation is self-contradictory—the true criteria of self-evidence—but by assuming that anyone who disagrees is a knave and a rogue. Taxation is a realm where arbitrary values flourish, and we may illustrate by analyzing the most hallowed and surely the most commonsensical of all tax ethics: some of Adam Smith's famous canons of "justice" in taxation.<sup>31</sup> These canons have since been treated as self-evident gospel in practically every work on public finance. Take, for example, the canon that the costs of collection of any tax be kept to a minimum. Obvious enough to include in the most *wertfrei* treatise? Not at all—for we must not overlook the point of view of the *tax collectors*. They will favor high administrative costs of taxation, simply because high costs mean greater opportunities for bureaucratic employment. On what possible grounds can we call the bureaucrat "wrong" or "unjust"? Certainly no ethical system has been offered. Furthermore, if the tax itself is considered bad on other grounds, then

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<sup>30</sup>John F. Due, *Government Finance* (Homewood, ILL: Richard D. Irwin, 1954), p. 122.

<sup>31</sup>Adam Smith, *The Wealth of Nations* (New York: Modern Library, 1937), pp. 777—79

the opponent of the tax may well favor high administrative costs on the ground that there will then be less chance for the tax to do damage by being fully collected.

Consider another seemingly obvious Smith canon, namely, that a tax be levied so that payment is convenient. But again, this is by no means self-evident. Opponents of a tax, for example, may want the tax to be made purposely inconvenient so as to induce the people to rebel against the levy. Or another: that a tax be certain and not arbitrary, so that the taxpayers know what they will have to pay. But here again, further analysis raises many problems. For some may argue that uncertainty positively benefits the taxpayers, for it makes requirements more flexible, thus allowing more room for possible bribery of the tax collector. Another popular maxim is that a tax be framed to make it difficult to evade. But again, if a tax is considered unjust, evasion might be highly beneficial, economically and morally.

The purpose of these strictures has not been to defend high costs of tax collection, inconvenient taxes, bribery, or evasion, but to show that even the tritest bits of ethical judgments in economics are completely illegitimate. And they are illegitimate whether one believes in *Wertfreiheit* or in the possibility of a rational ethic: for such *ad hoc* ethical judgments violate the canons of either school. They are neither *wertfrei* nor are they supported by any systematic analysis.

### ***Conclusion: Individualism vs. Collectivism in the Study of Man***

Surveying the attributes of the proper science of man as against scientism, one finds a shining, clear theory separating one from the other. The true science of man bases itself upon the *existence of individual human beings*, upon individual life and consciousness. The scientific brethren (dominant in modern times) range themselves always against the meaningful existence of individuals: the biologists deny the existence of life, the psychologists deny consciousness, the economists deny economics, and the political theorists deny political philosophy. What they *affirm* is the existence and primacy of social wholes: "society," the "collective," the "group," the "nation." The individual, they assert, must be value-free himself, but must take his values from "society." The true science of man concentrates on the individual as of central, epistemological and ethical importance; the adherents of scientism, in contrast, lose no opportunity to denigrate the individual and submerge him in the importance of the collective. With such radically contrasting epistemologies, it is hardly sheer coincidence that the political views of the two opposing camps tend to be individualist and collectivist, respectively.