PYRRHONISM IN ANTHROPOLOGICAL AND HISTORICAL RESEARCH

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I

Scepticism has fairly consistently had a bad press from those in a position of authority. The usual reasons for its disrepute are not themselves particularly reputable. They generally include at least the following claims: scepticism is a negative philosophy and hence incapable of making positive contributions to humanity, science, or religion; sceptics are nihilists who wreak havoc on social structure, science, and religion; and, though scepticism can on occasion be beneficial, the idea that we do not know anything is preposterous. These attitudes are widespread in the general populace but less common in the scientific community, where various ideas such as Heisenberg's uncertainty principle or Einstein's theory of relativity have made scepticism more acceptable. Although the usual reasons listed above might be remotely accurate representations of dogmatic scepticism, they completely misrepresent Pyrrhonic scepticism, that form of scepticism which has had most influence on Western civilization.[1]

The position taken here is that Pyrrhonic scepticism need not be considered primarily a philosophical position. Historically, it was set forth as a philosophical position but only because philosophy once encompassed all of humanity's attempts to arrive at knowledge. Today, when science has primary claim to including under its roof most of our attempts to wrest knowledge from the world, Pyrrhonic scepticism is more appropriately viewed as a scientific position having general implications for scientific research.

It is ironic that negative attitudes towards scepticism continue, since the dramatic historical failures of social structure, ethical beliefs, and human progress have been due to dogmatic pretensions of one sort or another, not to scepticism. This is not by chance. Scepticism is, after all, difficult to use as the justification for authority, obedience, or power. Claims to superior knowledge and a superior understanding of the Truth are effective means of rallying support even for arbitrary policies. Pyrrhonism has usually been neutral towards the status quo. Its social influence tends to be a force for

HISTORY IN AFRICA, 12 (1985), 225-252

moderation rather than a radical or reactionary influence. Yet, despite this neutral social role, it has had a radical intellectual influence, often forcing rethinking of fundamental ideas and assumptions. Great as its impact has been, Pyrrhonism is an attitude and not a philosophy or theory.

Pyrrhonic scepticism may briefly be characterized as the position that hitherto one is not convinced of the absolute validity of *any* propositions or theories but remains willing to be convinced momentarily or at any time in the future.[2] Pyrrhonic scepticism is a form of intellectual diplomacy, a basis from which all points of view can be given serious consideration. That one is not convinced need not be interpreted as meaning that one is either oblivious to the evidence (which could weigh preponderantly on one side of a question) or that one miraculously has access to evidence beyond the reach of common mortals (which indicates arguments for and against balance). Pyrrhonic scepticism is in one respect the opposite of the possibility that *every*thing can be known. The philosophical system which is usually attacked when "scepticism" is criticized or satirized is this "nothing-can-be-known" form of scepticism, hereafter called "academic scepticism."[3]

Pyrrhonic scepticism itself can be distinguished from various possible Pyrrhonic methods. The latter apply Pyrrhonic insights to scientific or philosophical research. Popper's "conjecture and refutation" methodology is a somewhat narrow version of Pyrrhonism, while Wittgenstein's philosophical method of dissolving questions in *Philosophical Investigations* is the most extensive application to date of the Pyrrhonic method in philosophy itself.[4] These seemingly disparate approaches have in common a total incompatibility with dogma. Popper's conjectures remain conjectures while Wittgenstein's questions are dissolved, not answered. This absence of dogma is the quintessential characteristic of Pyrrhonism.

Not coincidentally, such absence of dogma is also characteristic of the best scientific research. Many academics take each theory with the proverbial grain of salt, realizing that its claims are possibly overstated in order to attract attention and that it is likely the theory will soon meet severe criticism. It is this "grain of salt" scepticism that reflects the links between the modern scientific era and the Pyrrhonic sceptic tradition. I would argue that we gain considerably by making these links apparent. Too often "adopting and defending a theory" merely amounts to heavy-handed publicity for the theory, complete with presumptuous claims and a cursory search for a modicum of confirming evidence. The alternative to adopting and defending a theory need not be abandoning it; instead it can involve serious testing of the limits of a theory--spending equal time seeking out supporting and non-supporting evidence, as well as keeping an eye open for alternative hypotheses that better explain the data.

From the Pyrrhonic perspective there are two traditional categories of thinkers; dogmatists (those who maintain the indubitability of one or more propositions or theories: this includes

philosophical systems, scientific hypotheses and models, prejudices, or non-definitional propositions) and non-dogmatic thinkers (such as Pyrrhonic sceptics) who have not been convinced of any particular dogma. The Pyrrhonic position is not that people (or Pyrrhonic sceptics in particular) do not know anything (for we or they may be correct about some of our surmises and some of our conclusions). Rather, it is that hitherto propositional candidates for absolute truth status seem to the Pyrrhonic sceptic, in his of her personal judgment, either to represent conditional and not indubitable, truths, or propositions which fall short of certainty. Pyrrhonism follows common speech in viewing scientific hypotheses as conjectures, not unassailable truth.

Mathematics is often pointed to as full of truths that are absolutely certain. From a Pyrrhonic perspective, mathematics is a set of definitions or conditional truths; when theorems are accurately derived they do not thereby attain to greater truth than a tautological statement such as "a Mercedes is a Mercedes." Conditional truths are just that--not absolutely true--for they depend on the truth of both a logical deduction and the conditions presupposed by that deduction. The application of mathematics to itself and to the world is full of surprises and uncertainties, just as a Mercedes may turn out not to be a Mercedes for all the tautology of the statement made above. The only mathematical truths which might seem to merit indubitability would be definitional (tautological) ones such as $x = x$, or more sophisticated equations. On close examination, however, these "definitional truths" are clearly truths only in name. In Wittgenstein's terminology they bear a family resemblance to statements about the world but have no referent besides themselves. Hence viewing them as potentially true or false statements is a mistake of classification similar to calling a tomato a fruit.

Rather than expecting reason to make quick work of resolving ethical problems, Pyrrho allowed custom, religion, and personal ethics jurisdiction until such time as reason become convincing. Lack of rational certitude is, however, a long way both from cultural relativism as a principle and the anomie often ascribed to scepticism. If an individual Pyrrhonic sceptic's religion prohibited killing, it would not be unPyrrhonic to consider killing in any culture abhorrent. The basis of such judgments might be religious teachings or gut feelings; what is characteristic of Pyrrhonic scepticism is simply that they would *not* be maintained as incontestable facts.

The academic sceptic position would have similar ethical implications to the anthropological theory of cultural relativism (which suggests we have no right to make cross-cultural moral judgments). Pyrrhonic scepticism differs from cultural relativism in that it makes no general claims (including the basic claim of cultural relativism). Pyrrhonism was first devised as an answer to moral dilemmas. Pyrrho of Elis reputedly was primarily preoccupied with ethical issues and devoted little time to amassing arguments for and against known philosophies.[5] Sus-

pension of judgment was thus intended as a solution to moral dilemmas and aimed at alleviating mental anguish over questions that appeared to have distinct and conflicting solutions. Pyrrho advocated acting according to personal (presumably in large part culturally-inherited) values until the evidence one way or the other became convincing.

For similar reasons pyrrhonic scepticism is compatible with conjectural scientific judgments as well as conjectural moral judgments. Pyrrhonism makes no claims about the impossibility of certitude or even of the impossibility of distinguishing probabilities. The Pyrrhonic sceptic is merely unconvinced of particular certitutdes and of particular probabilities. Although unconvinced, the Pyrrhonic sceptic recognizes the need to make decisions. The advantage of the Pyrrhonic position is that this recognition does not lead to gratuitous claims about the consequent indubitable status of any decisions made.

In scientific research, this restraint from proclaiming incontrovertible truths may be owing entirely to the quality of the evidence so far produced on the issue in question (which failed to convince) or partially to the current investigation and also in part to past experience that indicated that former certitudes were later shown to be nowhere near as certain as they had first appeared. There is a great divide between evidence in support and belief in the inductive proof of a theory. It is on the other side of this divide that the Pyrrhonic sceptic does not experience a need to reside, even while feeling quite at home with evidence in support of a given theory. The method of balanced study and past experience of that method bring the Pyrrhonic sceptic peace of mind but not the necessity of immediately producing a balanced set of arguments for and against every proposition.[6] The Pyrrhonic sceptic is neither convinced that such a balance will always be reached nor that such a balance can be reached with great alacrity. He is willing to admit that a given position on an issue could represent the absolute truth. There is, however, always a distance between this admission of possibility and the conviction of its certainty.

We need to ask here whether there is any point in withholding 'final' judgments. If, as Pyrrhonic sceptics admit is possible, mankind discovers truths which turn out to be irreproachably correct, why not favor admitting this as soon as they are discovered? A host of such "truths" could be listed (penicillin cures particular diseases, gasoline explodes, flour does not explode, etc.). There are actually several reasons why this would be unwise. First, it would be very difficult to decide just what to include in this category. Second, dogmatic pronouncements have little advantage over less dogmatic ones and several disadvantages. Claims of infallibility in no way help to clarify the *quality* of the evidence available and lend themselves easily to oversimplification. The latter can have deleterious and even dangerous effects (penicillin-resistant versions of many diseases are now common, change well-defined situations and gasoline no longer explodes, or in the other direction flour which is "not explosive" does explode--in granaries under the right conditions,

etc.). Third, and perhaps most importantly, doctrinaire modes of stating what is known inculcate rigid modes of thinking, discourage freedom of thought, and provide false security.

Even supposing that we possess numerous pieces of knowledge that will appear as indubitable an eternity from now as they do today, there is no advantage in trying to decide what those pieces are and no purpose in declaring them indubitable. To the contrary, a Pyrrhonic or scientific attitude stopping short of doctrinal claims has considerable advantages. Pyrrhonic scepticism should be seen as merely an intellectual tool for it would be absurd if it were itself to be proposed as a candidate for the Truth. From earliest times, Pyrrhonic sceptics have distinguished between strong and weak arguments.[7] Traditionally, weak arguments were to be used in confronting weak adversaries and the strong ones against strong adversaries. That was the age of philosophy. In the age of science Pyrrhonists, like others, have recourse to hyperbole and rhetoric. Since Pyrrhonism is an attitude, not a hypnosis, Pyrrhonists inhabiting the dogmatists' world may have heuristic uses for doctrinaire statements without being convinced by the associated doctrine and without allowing that doctrine to limit their research.

In what follows I will suggest that the Pyrrhonic position is the preferable position for both anthropological and historical research. I turn first to a somewhat historical discussion of Pyrrhonic scepticism and philosophical attempts to counteract Pyrrhonic criticism to make my points that Pyrrhonism is both beneficial to science and in disrepute because it is insufficiently servile to the interests of the powers that be. I will then look briefly at some alternatives and at specific anthropological and historical research to illustrate the advantages of a Pyrrhonic method.

II

A Brief History of Pyrrhonic Scepticism

If Pyrrho of Elis was primarily concerned with ethical considerations, Aenesidemus (*ca.* 100-40 B.C.) is credited with the first theoretical formulation of Pyrrhonism as a philosophical position.[8] Pyrrhonism then flourished until at least 200 A.D. when Sextus Empiricus compiled the arguments that had accumulated for and against the known philosophies in his works *Hypotyposes* and *Adversus mathematicos*. The main weapons in the Pyrrhonic armory were critiques of the infallibility of both sensory perception and logical deduction, plus an accumulation of arguments originally developed by various philosophies.[9] The borrowed arguments were simply extra armament to be used where needed. Today this armory could be easily updated from such works as those of Heisenberg, Tarski, or Einstein.[10] Another recent indication that logical certainty has little to do with science is the growing realization that aesthetic appreciation of theoretical beauty may be important to scientific progress.[11]

Sextus Empiricus's works, which were little known in the post-Hellenic era, were rediscovered in the sixteenth century and played a major role from the Reformation period to the eighteenth century.[12] In this period Gassendi and Mersenne produced the first formulations of a Pyrrhonic scepticism that would be entirely compatible with the scientific revolution. Their views, however,were eclipsed by the rise of new dogmatic metaphysical philosophies such as those of Descartes, Kant, and Hegel, which tried to provide explanations for mankind's acquisition of knowledge, as supposedly embodied in the absolute truths discovered by the scientific method.

The Reformation re-opened questions about humanity's ability to know things with absolute certainty.[13] Luther's suggestion that one could not trust the opinion of the learned councils of the Catholic church but could trust one's own personal understanding of the Bible brought this question to the forefront. Luther's (and Calvin's) argument was that God would illumine the mind of the individual reader and not let them go astray. Individual reason could replace traditional faith. The logical difficulty was that this failed to explain the multiplicity of disagreements over interpretation of the Bible; it was hard to argue that God illumined different minds differently.

Today we have several additional reasons for finding the second half of the Reformation argument dubious. These include the evidence from Biblical scholarship that different parts of the Old and New Testaments were written in different periods, the abundant evidence that different parts of the Bible were originally recorded in different languages; and the voluminous linguistic and anthropological evidence that suggests texts are not transparently easy to understand when stripped of their sociolinguistic contexts.

Linguistic, anthropological, and historical research has, at least in academic circles, made it absurd for someone to claim to be an expert on another's thought or policies without being able to understand the other's language or the culture and society in which the other lived. Yet at the time of the Reformation these issues were yet to be conceived. Pyrrhonism was used merely to question the reliability of multiplying the chances for error.

The Catholic argument was that if, as Pyrrhonic arguments suggested, everyone could err both about what they perceived (read) and in their logical processes (what they concluded from what they read), nevertheless there was less chance of error among the councils of learned scholars than among the population at large, which was untrained in Biblical interpretation. The Catholic trump card was the point that if one could not be certain, how would one justify major changes such as the Reformation? Since the Catholics advocated no changes, they had nothing to justify and hence no need for certainty based on reason.

Protestant reformers used Pyrrhonic arguments against the Catholic church, arguing that the Catholic Church's claim to absolute authority in religious matters was unjustifiable and

so should be ignored. The difficulty with the Protestant position was that it needed to justify change on the basis of reason while Catholics could simply rely on faith. If reason was faulty, as Pyrrhonism suggested, then how could one establish Calvin's or Luther's certainty on such an uncertain basis?[14] Initially, I suspect, the psychological attraction of the Protestant argument lay in the contrast between the large imposing edifice of doctrine claimed by the Catholic Church compared to the initial simplicity of the Protestant doctrine: that individuals will be enlightened by God as they read God's Bible and so will not falter in their interpretations. Yet, the lasting success of the Reformation probably owed as much to socio-economic reasons as to intellectual ones. The history of disputes among Protestants and between Protestants and Catholics, and the acquisition of doctrine by Protestant groups since the time of the Reformation has provided little support either for Luther's claim or for the infallibility of the Catholic Church. A lot of what passed for Catholic doctrine in the sixteenth century has since been ruled not to be official doctrine.

The issues debated in the sixteenth century seem, however, to have recently acquired a new lease on life in the United States. A battle is developing between right wing and traditional branches of the Southern Baptist movement with the former claiming that the Bible contains no errors (the doctrine of inerrancy), and is unambigously understandable to a good Christian, that is, anyone who reaches the same interpretation on every point as the leaders of that branch of the Southern Baptist movement. One of these leaders has been quoted as saying that "if there are errors in the Bible, then we cannot know anything for sure."[15] The specter of scepticism is used here to suggest that without certainty everyone will relapse into 'evil.' Yet the real difficulty is once again that the unique way of "proving" that one's interpretation of a text is the correct one is simply to assert that it is and to do so with more force and vigor than one's opponent. "Proof" becomes defined as acceptance and there are of course many ways to get something accepted.

The belief that the Bible includes incontrovertible evidence about the antiquity of humanity and of the earth has today become a "creationist" dogma. This doctrine is unaffected by the difficulty of calculating exactly when this "must" have happened. Nor is it affected by the other evidence about the age of the earth that appears to be an integral part of "God's world." Even the reasoning that, if God is all powerful, He/She could have created the world at any time in the past replete with the evidence of a longer history and mankind would never know (so that neither physics nor anthropology contradict the basic tenet of creationism), does not solace the rigid of mind.

What is at stake is a power structure, not an idea. The movement is understandable in sociological terms but not religious or philosophical ones. Dogma, humdrum or outrageous, is open to Pyrrhonic criticism but dogma acquires its real

appeal from its role in defining social relationships and the power this can give to a few. It is not enough to say that the Southern Baptist movement might benefit from a closer acquaintance with the historical record. Instead we should notice the current tragedy that adamant dogmatism has once again become fashionable for explicitly sociological reasons; ignorance of the past is a side issue.[16]

In the two centuries after Luther, Pyrrhonic scepticism was gradually extended from a criticism of religious doctrine to a criticism of claims to absolute certainty in philosophical propositions. The transitional figure in this evolution was Michel de Montaigne, whose *Apologie de Raymond Sebond* provided what amounted to a Pyrrhonic defense for the failings of Raymond Sebond's attempt to provide a coherent rational defense for Christianity.[17] Montaigne combined a thoroughgoing Pyrrhonism about the possibility of rational acquisition of absolute knowledge about this world with a reliance on faith in the Catholic Church's teachings as the sole escape from uncertainty. Montaigne went beyond the mere reiteration of Pyrrhonic arguments and provided arguments intended to show the unreliability of both our senses and our reason and, consequently, even the unjustifiability (on purely rational grounds) of our certitude about our qualitative intellectual and moral superiority to animals.

Montaigne's work was widely read and prompted others to write additional works for and against Pyrrhonism.[18] Attacks were made on Pyrrhonism by Protestant and Catholic alike but the dominant and official opinion of the Catholic community was that Pyrrhonism was unassailable philosophically and did not damage religion because religion should be based on faith, not pure reason. Conversely, the majority Protestant view, during this period, seems to have been that Pyrrhonism led to atheism and was to be condemned outright.[19] The most interesting developments were the formulation by Petrus Gassendi and Marin Mersenne, two Catholic priests and friends, of what Popkin has called mitigated scepticism.[20] Both Gassendi and Mersenne were scientists and enthusiastic about scientific research. At the same time they were professed Pyrrhonic sceptics and so were interested in having a philosophical basis for explaining progress in science without basing it on one of the available metaphysical theories which they found so unconvincing.

Gassendi published numerous works including major criticisms of Descartes' attempt to provide yet another metaphysical system, yet the key to his mitigated Pyrrhonism seems to have been a separation of "truths of reality" from appearances.[21] The former, he felt, might forever be out of reach. Though this might mean metaphysics was doomed, it did not prevent one from studying appearances. Furthermore, by referring to what could be studied as "appearances," Gassendi meant that we might as a result never be certain in our conclusions since critical aspects of reality might remain beyond our grasp. By confining science to the study of appearances, Gassendi defined science as a useful and interesting field of study that did not

go well with dogmatism.

Mersenne admitted to being a theoretical Pyrrhonist but did not favor applied Pyrrhonism. By this distinction he accepted the strength of the Pyrrhonic attacks against claims of absolute certainty, the conditional nature of mathematics, and the likelihood of continued uncertainty in physics without advocating acquiescence in the impossibility of certain knowledge.[22] Mersenne's faith in the truth (even if conditional or not absolute) of the sciences brought him into dispute with other Pyrrhonists who wanted to eliminate science as just another metaphysics. This led to Mersenne's division between reasonable sceptics (those who applied scepticism to real dogma but not to science) and unreasonable ones who were content to doubt every attempt at knowledge, trusting to faith in God.

Mersenne's formulation was different than Gassendi's in that it circumscribed scientific truths somewhat less and suggested that the sceptical apparatus could be turned off where science was concerned. Both Gassendi and Mersenne accepted Pyrrhonism's critique of metaphysics and went on to formulate scientific methods. The relevant difference was that Gassendi did not set aside his Pyrrhonism for the benefit of science and instead maintained that they were compatible. In this respect Gassendi formulated a scientific method that better fits the method generally accepted in the empiricist and pragmatist traditions today.

Gassendi's insight was centuries ahead of his time and can perhaps best be appreciated by pointing out that over one hundred years later Kant was content to postulate a division of reality between the noumenal (rational and moral sphere) and the phenomenal (arena of scientific research). The distinction was meant as a response to both Hume's Pyrrhonic scepticism and the "truths" of science.[23] By confining science to one aspect of reality, and a less fundamental one than the moral or religious underpinnings, Kant hoped to explain both the fact of scientific truths and the force of the sceptical criticism of certitude. Yet Kant's system, though it embodied profound ethical analyses, failed both to understand the Pyrrhonic challenge and the tentative character of scientific research.

One virtue of Gassendi's formulation is that it provides a dynamic scientific method which suggests that criticism is an inherent part of scientific progress and that criticism and positive change go together for the foreseeable future. Kant's formulation assumed static moral principles valid for all time and, probably in consequence, static scientific truths that also were eternally valid.

This failing in Kant's works provided an opportunity for yet another doctrinaire resolution of the sceptical versus the scientific dilemma. Hegel found Kant's resolution of the sceptics' challenge unconvincing and proposed instead a dynamic system in which contradictions were the motive force of intellectual progress. In part Hegel's vision and insight involved seeing intellectual progress (science included) as a dialectical process. This vision has made a major contribution to Western culture

though the system which Hegel anchored on this theory is now generally considered to have been misguided.[24] Hegel's theory made significant improvements on the static aspects of Kant's work; science can usefully be viewed as developing dialectically, although dialectical analysis may be more convincing when applied (as Marx suggested) to social change rather than intellectual change.

Yet, if time and the accumulation of later arguments or the development of science render Hegel's ideas less convincing, his attacks on the sceptical position appear astonishingly naive in retrospect. His specific arguments against scepticism, for example, in *The Phenomenology of Mind,* are weak and amount to the proposition that the sceptic's actions contradict his belief that nothing is knowable and hence should lead the sceptic to a transition out of scepticism.[25] This formulation sidesteps the sceptical arguments about the difficulty of absolute certainty in order to attack academic scepticism, whose single doctrine, the impossibility of knowledge, leaves it open to attack. Hegel deals with academic scepticism without ever coming to terms with Pyrrhonic scepticism which, because it maintains no dogma, is not forced into a contradiction between dogma and action. Beyond this, since he was concerned with establishing a metaphysical system, albeit one that was based on situational relativism and dynamic change, Hegel can ill afford to consider the Pyrrhonic challenge seriously. Yet, this failing in part explains why much of what Hegel wrote is now merely of academic interest.

III

If much of what Hegel wrote is rarely read today, much of what Marx wrote has become indispensable reading for the intellectual and the basis for planning and action by governments and revolutionaries. Marx wrote in a dogmatic era that largely ignored Pyrrhonic criticism, so in that regard this era seems more naive in some ways than the preceding one. This neglect of Pyrrhonic criticism of dogma explains why Marxist theory after Marx has divided into so many conflicting splinter groups. Although there are many Marxist systems, each in serious disagreement, I should like to consider a few identifiably Marxist ideas which are often at the core of Marxist systems. My goal is certainly not to summarize Marxism nor to provide a critique of it. Instead, I hope only to bring out some of its more important suggestions and separate the suggestions from gratuitous claims that they are actually unquestionable truths. I would be the last to suggest that they can only be either indubitable or uninteresting.

The first is the idea of the unity of theory and practice as a necessarily dual approach to ascertaining objective truth.[26] The special insight available to the proletariat plays a part in this idea since the theory claims that the objective social situation can be fully understood or perceived only by the pro-

letariat. This idea is an attempt to bridge the sceptical criticism which attacks first the certitude of our sense perception, then the infallibility of our intellectual processes, and finally the certitude of the correlation between ideas and material reality.

The diversity of Marxisms and such actions as the repression of the Solidarity movement in Poland cast doubt on the viability of this defense against sceptic criticism, even within the Marxist camp. Yet the idea has broad implications. If it is possible truly and fully to understand the objective reality we confront as human beings, then it becomes possible to be certain about what is the (unique) best action to take and it is not necessary to worry about whether the long-term implications of the action will be positive or negative. Fully understanding the objective situation implies that action based on such an understanding can only have maximally positive long-term implications. Since in revolutionary or dictatorial contexts this objective understanding is used to justify taking human lives, the Pyrrhonic suggestion that there are good reasons for not being convinced that such a level of understanding has been reached cannot be entertained. The whole possibility of the ends justifying the means can be seriously considered only if the connection between the "means" and the "ends" is certain rather than in doubt.

The second idea is that of economic determinism--if only in the last instance. This is a doctrinaire assertion that is maintained by the majority of Marxist groups.[27] The idea of "the economy as last instance" is usually viewed in a somewhat mechanistic way, with the economy as a form of final cause without which events would not have occurred as they did. Even making allowances for nineteenth-century naiveté about causality and interpreting the idea as referring to a probabilistic influence that over the long term has a greater effect than any other easily defined cause, the idea remains doctrinaire, yet at the same time so vague as to make it difficult to define its intellectual utility. Nevertheless economic determinism is maintained as doctrine with vigor by many Marxist groups. This leads one to suspect that it is so maintained precisely because it is dogma and because its adherents feel an explicit need for dogma of this kind--they do not share the sceptics' peace of mind through suspension of judgment--because the worldly utility of the doctrine is more important than its lack of intellectual validity.

A more subtle Marxist point intimately related to these first two points is that the dialectic of change implies that a transition to true socialism is possible only by first realizing both the good and bad potential of liberal capitalism and then transcending this evolutionary stage.[28] This doctrine, therefore, suggests that the attempts of the Third World to leap directly to true socialism are doomed to failure. This is a dogmatic assertion which has a tendency to be ignored in many versions of the fundamentals of Marxist doctrine. The reason it is ignored, whereas the first idea I have considered above is not, must relate to the utility of the first idea for those who

wish to have control, influence, and power over the lives of others and the lack of utility of this last doctirne for the same purpose. It is unlikely that this will change even if years from now there are still few Marxists who can point to a society which they feel has realized true socialism.

In haste to transcend the capitalist era, some Marxists prefer risking the authoritarianism and failure that Marx predicted to trying to bring society naturally through, and beyond, the capitalist era. Undoubtedly several good reasons for this preference could be given from within the Marxist tradition. Paradoxically, as the years pass the evidence in support of this particular Marxist doctrine seems to mount; even China seems inclined to pass through a form of capitalism in their long-term effort to arrive at true socialism.

The duration of the dialectic process is another critical question in Marxist theory. Marx seemed to suggest that true socialism, or the end of the dialectic of history, was not far off.[29] Marx was both a true Hegelian and a nineteenth-century idealist in this respect and there are probably few today who would maintain that the resolution of the world's problems is imminent. If, instead, one views the dialectic process as something without end then each social insight becomes relative and none are absolute. This does not amount to the Pyrrhonic position but could provide a basis for a Marxist analysis that is not incompatible with Pyrrhonic scepticism.

IV

The Pyrrhonic Position Refined

Because the Pyrrhonist does not maintain any dogma, the Pyrrhonic position is compatible with many different attempts to understand life. Kierkegaard's methodology and religious conclusions were as clearly in the Pyrrhonic tradition as Wittgenstein's method of linguistic questioning designed to dissolve philosophical problems.[30] Yet, though neither philosopher claimed to set forth a philosophical system nor proclaimed a doctrine, this did not prevent them from paying serious attention to the writings of those who did. Neither did it prevent their work from receiving the attention it merited. Nor is it immediately clear that by not proposing yet another corpus of dogma either philosopher's writings stand less of a chance of resisting the ravages of time.

Popper's conjecture and refutation method is based on Hume's observation that induction is not a logical process like deduction and that in fact, induction cannot be logically justified.[31] Hume noted that observation of a series of events, such as apples falling to the ground when released above the ground, does not suffice to guarantee a *general* inference, such as that apples always fall to the ground when so released. The particular case of apples not falling when in orbit around the earth is a particular example whose general point is the invalidity of in-

duction.

Without induction science might seem either impossible or fruitless. That it is neither calls for an explanation. Popper's method of conjecture and refutation offers a solution that has been fairly generally accepted.[32] This involves the suggestion that, although observation of the world cannot prove a hypothesis, it can invalidate one. Counterfactuals can refute the general validity of conjectures even if evidence in support of conjectures cannot prove they are generally valid. Accordingly, science progresses through the formulation of conjectures, attempts to discover evidence to refute these hypotheses, and the consequent falsification, reformulation, or improvement of hypotheses after they are confronted with evidence which does not fit their original formulation. The truths of everyday life, which we accept in order to act, are reasonable conjectures which simply have not yet been refuted. They are working hypotheses which have been assimilated as part of our world view and are retained until they are refuted or surpassed and no longer appear useful.

The advantage of the conjecture and refutation method is that conjectures remain conjectures. The method is not concerned with providing ways to discover absolute and unquestionable truths, but it does provide an explanation for progress in science and the utility of observation and research. The basic *schema* is perfectly compatible with Pyrrhonic scepticism though Popper tended to go beyond the tentative nature of his method to make absolute claims about the evil of competing methodologies and attempted to exclude from science any method other than the conjecture and refutation method.[33] The conjecture and refutation method is sometimes interpreted as if, though conjectures remain tentative, refutations must be seen as absolute. Both Popper's additions and the absolute refutation variant are incompatible with Pyrrhonic scepticism. They are gratuitous additions of dogmatic elements which are foreign to the basic insight of the conjecture and refutation method.

At a more general level there are advantages to staying with the Pyrrhonic position. There are a number of philosophical issues that are relevant. Fact and theory are interdependent. If reality is socially constructed, it is misleading to view theory as discrete from data or to view the definition of a scientific theory as a theory that can be refuted. Popper's *bête noire* Marxism is a case in point. Structuralism is another example and the modern Supergravity theory in physics may be yet another.[34] What each of these theories has in common is that they involve an all-embracing view of reality that is not entirely open to refutation. To enthusiastic proponents they appear elegant, beautiful, and, perhaps consequently, perfectly true. Popper might want to eliminate them from the realm of science yet within their own framework they appear eminently scientific.

Issues such as these merit extended discussion though they belong more properly in a philosophical work. Here it seems preferable to cite Arne Naess' summary of the issues as viewed

from a Pyrrhonic sceptic position. Naess reaches, among others, the following conclusions:[35]

1. Is is possible to devise an all-embracing synthesis? Yes, but certain theoretically, more than practically, important qualifications must be made with respect to what "all" covers.
2. Does this mean that the results of scientific research could be extended universally or extrapolated to cover "everything"? No.
3. Or that one take a position towards basic scientific research? Yes.
4. Can a system legitimately claim truth and intersubjective validity, not only adequate or subjective accuracy? Yes.
5. Can a system legitimately claim not just relative truth--truth according to its own premises and postulates but absolute truth--truth which isn't defined in relation to the system? Yes.
6. Are there such systems? Yes.
7. Would the above "Yes" answers be answered "Yes" in any consistent system? No.
8. Are there limits to "describing" them, their depth of perception, their fineness of discrimination? Yes. They (descriptions) only make sense up to a certain point.
9. Can an approximately complete system be described exactly and understandably to some one outside that system? No.
10. Can more accurate and more comprehensible accounts continually be given? No. Understanding seems to have to develop discontinuously, by leaps, following the most decisive lines of difference.
11. Can a total system be improved? Yes, but only through internal changes on the basis of goals and standards implicit in the system.
12. Can a total system be open like a science? Yes. (Science's openness has principal limitations.)
13. Do all systems refer to one and the same world (in a loose sense)? Yes, but only as an intimation. Each determination of the world (including the intended yet unknown) can vary.
14. Can two systems be compared exactly and comprehensively for some one outside. No. A typology of systems approaches more and more to becoming part of a particular system the more exactly the categorization (classification) is carried through.
15. The results of scientific research steadily change our view of the world--what does a total system do? It changes everything. Research changes something. Immersing oneself in a system implies living in a total outlook in which research results have their place. Thus research and its "results" change.

16. Have science or philosophy the means to point to any particular world as the factual one? No. Factualness has criteria which vary completely with the ontological, epistemological, methodological, (etc.) positions one takes.
17. (Further) Criteria of actuality contain evaluations and norms of a more profound sort than purely pragmatic or instrumental ones. As they besides build on criteria of factualness, or more generally, criteria of what is "given", the answer must be no.
18. Does this imply fixed limits to human knowledge? No, not fixed since our negative conclusions can not be made more precise without losing universality and since we can not clearly indicate what the limits eventually could be.

Naess' summary indicates that Popper's version of science may not be the only defensible one. This is to say that there appears to be little justification for the extraneous dogmatic additions to Popper's conjecture and refutation method. Yet, stripped of gratuitous dogma, the conjecture and refutation method is compatible with explicit adoption of a Pyrrhonic sceptic position.

V

A Dogmatic Alternative

The advantages of adopting such a position can perhaps best be seen in the context of the diametrically opposed dogmatic theory of epistemological anarchism. In *Against Method* Paul Feyerabend proposes that we replace rationalism with anarchism as a scientific methodology.[36] As he sees it, science is stifled by its conservative methodology and large numbers of new and excellent ideas are either never formulated or, when formulated, are not given adequate consideration because they do not fit into prevailing theories.

He argues that "anything goes" is a preferable methodology and that anything less is inadequate. In particular he maintains that the Popperian method of conjecture and refutation does not work because most theories relied on today are well known to be in contradiction at some level with other accepted theories. The question, therefore, is to provide a method that allows one to choose between two theories which are both already "falsified." Feyerabend maintains that, because all theories are inconsistent with the facts, we must drop the requirement that theories be consistent with the known facts and open the door to all conjectures: to counter-induction and to unsupported hypotheses.[37] This suggestion is then elaborated into a call to give all theories equal status as dogma.

Feyerabend supports his claim that all theories are inconsistent with the facts with numerous examples of hypotheses which

have been or still are generally accepted even though they disagree with one or more also generally accepted facts. The insistence that theory must in principle be consistent with the facts and so can be falsified, Feyerabend calls the consistency condition. He argues further that the success of a theory (in the sense of its satisfaction of the consistency condition) is usually due to a deliberate decrease of its empirical content--facts are selected in such a way that the area of application is narrowed. The theory's success is then entirely man-made or artificial.[38]

There are several difficulties with this argument. A general rule (all theories are inconsistent with the facts) cannot be established by giving a few examples which fit such a rule. Beyond this, it is always possible that the "facts" need reinterpretation or are nowhere near as certain as they appear. Further research may even show that what appears at first as a contradiction turns out not to be one after all.

Feyerabend proposes a critique of facts as facts. He calls the idea that facts exist and are available independently of theory the autonomy principle.[39] He argues that this principle is simplistic and that the use of a single theory prohibits perception of significant facts and even whole classes of facts. Naess's analysis is more subtle in that it includes both the idea that different theories lead to the consideration of different facts and the idea that these facts are often incommensurable--not fully understandable from the perspective of every theory. To take an African example, a claim that a lineage mode of production prevailed during a certain period in parts of precolonial Africa is fully understandable as part of a version of Marxist theory but cannot have the same factual status within the theory of biosociology.

In this context, another of Feyerabend's dogmas merits attention. This is the claim that "there is no idea, however ancient and absurd that is not capable of improving our knowledge."[40] This justifies the claim that every idea should be considered as equally meritorious and worthy of being elevated to dogma. While it might be true that every idea could inspire someone to contribute to human knowledge, Feyerabend makes no serious attempt to prove this general rule. Furthermore, even if it were so, it might also be the case that many ideas were simultaneously more capable of harming our knowledge and our humanity. Given this possibility, Feyerabend provides little justification for elevating every idea to dogma instead of simply examining them seriously for what they contribute to mankind. One could go further and suggest, in a philosophical vein, that, since ideas make full sense only within specific theoretical frameworks, the proposition that all ideas be given equal status not only makes sense from no theoretical perspective but does violence to all theoretical perspectives rather than facilitating the happy development of every theory.

Feyerabend maintains the opposite contention: that rigorous application of the methods of criticism and proof would wipe out science as we know it--indeed, would never have allowed it to

arise in the first place.[41] His argument is that ignoring such methods has allowed initially weak hypotheses to develop and that, by extension, in accepting all ideas many more weak ideas will develop to bear valuable fruit. This would be like suggesting that farmers should allow weeds equal rights with cultivated varieties of plants. Remove the farmer and the result would soon be that the weeds would take over, production of edible crops would drop to minimal levels, allowing us to return to the productivity levels of hunters and gatherers.

Championing all ideas, no matter how useless or abhorrent they appear, can have equally undesirable results. Stringent criteria of proof or falsifiability could lead to doubts about the absolute validity of a scientific proposition and the premature elimination, for practical purposes, of potentially fruitful ideas; but stringent criteria also provide selected ideas with what they need to flourish adequately. The economic constraints within which research occurs prohibit providing adequate support to all ideas or theories. If too many ideas are prematurely eliminated in the present institutional arrangements, the solution is to increase scientists' open-mindedness through serious consideration of the Pyrrhonic alternative, not the glorification of dogmatism. Absolute certitude is not necessary for scientific progress nor is arbitrary pretence at certitude.

Feyerabend calls his philosophy "epistemological anarchism" and suggests that it is different both from scepticism and from political or religious anarchism. "While the sceptic either regards every view as equally good, or as equally bad, or desists from amking such judgements altogether, the epistemological anarchist has no compunction to defend the most trite, or the most outrageous statement."[42] Feyerabend's naive evaluation of scepticism as hypnotic indecision is used to support the claim that the only way to fight entrenched dogma is with more dogma. A more appropriate term to describe Feyerabend's solution would be anarchic dogmatism or indiscriminate dogmatism.

Feyerabend's difficulties arise from trying continuously to fight dogma with more dogma. His work is replete with generalizations that are "proven" by adducing a few examples. Yet his own theory suffers not so much from being based on *a* narrow empirical foundation as from a refusal to accept Hume's and Popper's observations that induction is an unacceptable method in science or philosophy. This reliance on induction would cause fewer serious problems were it not that the theory so supported is one of indiscriminate dogmatism. Ironically, Feyerabend starts out by trying to accept Hume's observation that theory cannot be derived from facts (induction is not a valid logical argument) yet concludes from this that theory need not even conform to the facts. This idea is presented as an inductive conclusion from known facts--the non-conformity of several accepted facts and several accepted theories.[43]

The crux of Feyerabend's proposal is that because every hypothesis is inconsistent with "known facts" we should assert the validity of every hypothesis and in consequence we will witness a renaissance of new ideas and rapid progress in every area.

This proposal is the other side of the academic sceptic coin. Rather than dogmatically asserting that nothing is knowable and there is no truth, Feyerabend would dogmatically assert the truth of every theory or idea on the intellectual level and let the world sort out the results in a Darwinian struggle where the most fruitful ideas give rise to the greatest number of offspring.

The suggestion is both idealistic and misguided and is unlikely to have the dramatically liberating effect Feyerabend claims for it. It is misguided because, even if it were put in effect, intellectual weeds would take over. It is idealistic because it would not be put in effect (the farmer could not be eliminated). Instead an attempt to put it into practice would sanctify the prevailing power structure (for, unless general enlightenment were quick in coming, those ideas which had the greatest immediate appeal to power brokers would receive greatest support) while rational criticism and long-term basis research (however imperfect) would be devalued. In a donnybrook dogmatic those immediately useful to the power structure can hardly help but emerge victorious.

Feyerabend's theses are deliberately provocative but they do not provide a viable critique of the Pyrrhonic position. The Pyrrhonic sceptic researcher is free to examine every idea seriously and during such examination can explore significant implications of the associated doctrine. In their search for alternative explanations, techniques, and arguments, Pyrrhonists can be much more innovative than the epistemological anarchists who spend equal time asserting trivial and non-trivial hypotheses. Because Pyrrhonic sceptics remain unconvinced, they experience no need to make Feyerabend's empyrean leap of faith after which even the owl of Minerva could not distinquish one sacred cow from another. In practice the Pyrrhonist will examine those hypotheses and propositions which appear interesting or significant and in so doing present them in their strongest form in order to search for the best evidence both for and against them. This method has the merits claimed for the epistemological anarchistic method and none of the drawbacks.

VI

Anthropological and Historical Cases

Anthropologists customarily have recourse to a range of theories in their research. The best known systematic attempt to encompass this range of theory is the work of the Human Relations Area Files (HRAF).[44] The basic method of the HRAF is to collect hypotheses of concern to anthropologists and test them on a large data base drawn from published works by anthropologists. The professed goal is to help pinpoint those hypotheses which seem to have the widest empirical support and to direct attention to areas which might profit from further research. This endeavor is not phrased in simple conjecture and

refutation terms becasue an underlying assumption is that anthropology is at the stage where the best that can be done is to formulate hypotheses that will receive statistical support. A corollary to this assumption is that the cases that do not appear to fit a statistically confirmed hypothesis do not thereby refute it. Instead, non-confirming cases either provide an incentive to modify the hypothesis or confirm the statistical validity of the hypothesis.

Consideration of statistically valid hypotheses brings one inevitably to the idea of multivariate analysis. This is the idea that a plurality of factors each simultaneously exercise an influence on another (the dependent) variable. A hypothesis that receives partial statistical confirmation, let us say is confirmed in 60% of the cases studied, can be regarded in two ways: a) as a good hypothesis that is merely missing a few, still unidentified, variables or b) as a hypothesis about a statistical tendency that has been tentatively confirmed. Many would argue that (b) is really a disguised form of (a). This is not necessarily so; modern physics suggests statistical behavior is intrinsic to the universe.[45] We might, therefore, claim that 100% confirmation of a sociological or economic model was due either to chance or to the incorporation of some indirectly definitional elements into the model and that partial confirmation was normal. Whichever position we take, the cases which might be expected to fit the hypothesis, but do not, cannot be considered as refuting the hypothesis; though, on the first interpretation, the data that do not fit suggest that the hypothesis is not complete.

Multivariate analysis is best understood as a sophisticated version of the conjecture and refutation method. Hypotheses which receive little confirmation are rejected as probably not worth further investigation while those that receive considerable confirmation are kept as worthy of improvement. Hypotheses that seem to be completely confirmed are accepted only as probable conclusions because there is always the possibility that the confirming evidence does so by chance or that another hypothesis or interpretation, with similar implications, offers an even better explanation of the data.

Statistical analysis is by definition tentative yet dogmatism is so common that there are many who prefer to treat a statistical confirmation as if it were a proof. There is a sociological basis for this even if it is intellectualy indefensible. When statistical evidence is available it is legitimately used to make monetary and policy decisions. Once so used, the statistics have a tendency to be incorporated into prevailing justifications for policy and so become assimilated as dogma. A high probability becomes adequate justification for official action even though the data could be misinterpreted.

There are serious drawbacks to dogmatic misinterpretation of statistics in other areas than the social sciences. In the harder sciences there are frequently tragedies due to misapplication of statistics in the areas of pollution, food additives, and drugs. Promulgation of the idea that there are "safe" levels

of exposure to radiation, when there is no evidence that any level of exposure to radiation is safe, is another obvious example. The point here is that if the statistical evidence on the effects of radiation were not misinterpreted as suggesting that it is unquestionably and irrefutably harmless at low levels, then radiation would be used with more restraint as a diagnostic device only when needed.

Naess' conclusions provide several other reasons for suspecting that there are difficulties with relying too heavily on statistical conclusions. If certain questions become important in the context of particular theories and the data collected depend largely on the questions asked, the statistical data base and the statistical methods of analysis used are unlikely to be of utility to people interested in hypotheses studied by a minority of researchers. Beyond this, statistical methods like those of the HRAF abstract hypotheses from the theories which generate them and abstract discrete elements of data from the research results and theory in which they were embedded. In principle, this reduces data and hypothesis to transparently understandable propositions.

One example of the difficulty with such an approach may be sufficient to clarify this point. Frederick L. Pryor tests a number of hypotheses using fairly sophisticated statistical models in *The Origins of the Economy*. His analysis is excellent and his choice of hypotheses is serious and mature. This does not, however, mean that he avoids the problems we have been discussing. Consider one of his most statistically successful models. This involves the observation that presence in a society of (a) concentrated political power and (b) more economic production carried out by wives than by their husbands correlated strongly with the presence of (c) economic slavery. The hypothesis which he formulated and tested was that (a) and (b) facilitate the establishment of (c).[46]

The confirmation of the hypothesis can be interpreted either as justification for investigating the triad of (a), (b), and (c) or it can be seen as proof that (a) and (b) are sufficient prior conditions to facilitate the adoption of (c), economic slavery. The latter conclusion is unjustified, however, because one might find the same correlation if the adoption of economic slavery were used by husbands to transfer most of their economic duties to slaves while their wives' former economic duties were left intact. In this case before adoption of economic slavery the society in question might have had men doing most of the economic production. This is an example of the inherent ambiguity of statistical analysis. Extracting data from context is essential for statisical analysis but unequivocal adoption of one interpretation is not.

One type of data which rarely appears in the HRAF type of models is diachronic or historical data such as the sort of data which might indicate which of the two interpretations in the above paragraph were correct in each case in the sample studied. Scarcity of reliable historical data is one of several reasons why historical analysis provides few of the HRAF hypothe-

ses. Because of the constraints of the data, HRAF analysis is generally synchronic analysis but statistical analysis is not inherently static. Sophisticated and complex dynamic statistical models are regularly developed in economics. There as well, there is a legitimate question whether the models suffer from a naive view of data as something that is fully meaningful when extracted from context. This possibility is generally, and unjustifiably, ignored because statistical correlations seem to confirm large numbers of hypotheses and these confirmations are taken as confirmations of the whole edifice.

Neo-classical economics treats certain data, such as income distribution as expressed in the demand function, as transparently meaningful and therefore beyond question.[47] The difficulty pointed out by many critics is that income distribution has a quite different meaning in Marxist analysis, for example, and need not be beyond question. In fact even in neo-classical economics tax policies address income distribution directly and several government policies (and private enterprises such as advertising) directly affect the demand function. Yet this does not prevent many economists from formulating their models as if the demand function were a transparently understandable piece of data that was for all intents and purposes beyond control. This assertion is the part of neo-classical economic doctrine that has best served the status quo.

The same type of critique has appeared in the anthropological literature with a few extra twists. In economics the criticism seems to have focused on the varied implications data have within competing paradigms. While this observation has been important in anthropological literature, much of the attention has focused on the possibility of superficially similar data having varied meaning within different socio-economic systems.[48] These issues have not been resolved in anthropology and currently there is a tendency for each of the three main groups of protagonists (formalists, substantivists, and Marxists) to compromise and try to incorporate the opponents' criticism into their own theory even if this conflicts with accepted parts of their theories.[49]

The main drawback to the HRAF approach and other statistical or econometric models is that they break analysis into pieces and ignore the possibility that in so doing something important may be lost. An ecological system, a political process, or a pattern of economic change can be understandable and have important general implications, yet this may be due more to the way the pieces fit together than to the individual characteristics of the pieces. Marxist analysis, for example, which claims to provide a complete social analysis in which everything from alienation to international terms of trade play a role cannot be usefully confirmed or rejected by HRAF methods as they are currently practiced. This is not to say that mathematical techniques are likely to be useless, merely that both cross-cultural multivariate analysis and intra-cultural multivariate analysis have clear limitations.

The temptation of indubitable theory is as great in history

as in anthropology or economics. The analysis of the genesis of the "modern world system" proposed by Braudel and Wallerstein is of interest to both anthropologists and historians. The renown and unquestionable integrity of the authors do not entirely explain the dogmatic nature of the theory. The absolute claims of the theory of the "modern world system" make most sense as a form of academic advertisement, exaggerating the perfection of the theory as a political statement. Braudel and Wallerstein propose that the modern world system, composed of core capitalist states plus semi-peripheral and peripheral areas, developed in Europe in the sixteenth century and has since incorporated virtually all of the world's economies (with the possible exception of a few isolated subsistence economies).[50] In Wallerstein's analysis there are core *states* but only semi-peripheral and peripheral *areas* because states in the latter two geographical areas are so weak or dependent that they do not merit the designation of "state."

Wallerstein is aware of the interrelation between theory and data and makes explicit reference to the link between one's unit of analysis and one's conclusions. Wallerstein cites T.J.G. Locher: "One should not confuse totality with completeness. The whole is more than the assembled parts, but it is surely also less."[51] Yet, despite this, Wallerstein never returns to discuss in what way his world system theory provides less insight than a model based on a smaller unit of analysis.

The direct reason for this neglect is that Braudel and Wallerstein are concerned with explaining why states develop and why this development must be understood within the context of the development of the world system. Wallerstein adds that the same is true of social classes and ethnic groups.[52] Though he focuses on states he extends what seems reasonable for states to lower levels of social organization such as social classes and ethnic groups. This extension involves defining a single world class (bourgeoisie) versus several mere strata (the non-bourgeoisie or proletariat).[53] This is a descent to lower levels of social organization in name only.

Braudel's work is so rich in detail that at one level it escapes the above criticism. Yet, because Braudel uses the world capitalist system theory as his general framework he is forced into specific, and sometimes unconvincing, interpretations of the data. The difficulty with both Braudel's and Wallerstein's analysis is precisely that is is both more than the sum of the parts and less. More because the theory of a world economic system explains much that needed to be explained and less because it can not look at the parts in an unbiased way. All data are interpreted through world economic system tinged spectacles.

One example where this bias becomes theoretical blinders will suffice to make the point. Braudel and Wallerstein rely on an analysis of Polish grain exports to support their conclusion that Poland became part of the world capitalist economic system by 1600.[54] The export figures they use indeed seem to support the contention that Poland was the granary of Europe

for a couple of centuries after 1600. Yet these data and their theoretical needs are their sole reasons for concluding that after 1600 Poland cannot be understood except as part of the periphery of the world capitalist economy and that the Polish economy, therefore, must be seen as primarily a capitalist one from then on.

Their point depends on upholding a distinction between the above claim and claims such as that after 1600 the European capitalist economy had an effect on Poland or that the Polish economy after 1600 cannot be completely understood without reference to the export of grain to capitalist western Europe. In fact the Polish data are as good or better than those available for most areas Braudel and Wallerstein designate as peripheral areas to the developing world capitalist economy. Their world system theory is thus anchored in many judgments like those about Poland.

It is understandable, therefore, that Braudel finds Kula's work on the Polish economy embarrassing. Kula's analysis of the Polish economy from 1500 to 1800, *An Economic Theory of the Feudal System*, concludes that Poland did not even become incipiently capitalist, by the usual economic criteria, until a transition period from 1780 to 1850.[55] Prior to this and particularly during the period of highest exports of grain to western Europe in the years after 1600, Poland's economy and social structure can, according to Kula, best be described as a feudal system. Kula uses copious analysis of price changes and their geographical distribution, the lack of a market for labor before 1780, and the economic records of numerous noble demesne to show that the rationality which determined economic decisions was feudal and not capitalist. He also shows in detail how this rationality changed gradually in 1780 until the economy was transformed into a capitalist one by 1850.

Kula's work is so good that Braudel feels obliged to deal with it directly. Unfortunately, Braudel's attempt to reconcile Kula's conclusions with those required by his and Wallerstein's world economic system analysis is not very persuasive. Braudel's argument reduces to the claim that, even if Kula is correct about the Polish economy not becoming a capitalist one until sometime between 1780 and 1850, this is really irrelevant because the feudal landlords were nevertheless tools of western capitalism and so the Polish economy was part of the system.[56]

That landlords sold grain to western Europe is not in question. That we should therefore claim that the whole Polish economy is best understood as part of the world capitalist economy is in question. If, from the perspective of the Polish data, there seems no reason to view this trade with western Europe as significantly different from earlier trade with the Mediterranean or the East, then the only persuasive reasons for reaching Braudel's conclusion are theoretical ones. The theory, which is itself based on this and similar conclusions, *requires* that conclusion.

My arguments and the Polish example should not be seen as suggesting that it is possible to disprove Braudel and Waller-

stein's world system theory definitively. Quite the contrary, they indicate only that the theory involves, as an integral part, neglecting data that many would consider critical. Further, if we accept the link between data and theory, we might add that Braudel and Wallerstein's theory brings to light a lot of data that otherwise might be ignored. It might also, following Naess, turn out to be definitively and absolutely and uniquely correct or it might be definitively, absolutely, though not uniquely, incorrect. The larger perspective could be the uniquely true perspective yet the evidence is not overwhelmingly convincing. Unless we believe religiously in a theory of contagious capitalism, mere contact with a capitalist economy need not be interpreted as conclusive proof that an otherwise non-capitalist economy has suddenly become a capitalist one.

VII

Naess' philosophical Pyrrhonic conclusions need to be complemented with less philosophical remarks. Pyrrhonism is a useful attitude both for philosophers and for others. In my own work on Morocco I found adopting a Pyrrhonic attitude forced me to consider data from more points of view than I otherwise would have--even though I had as one of my main objectives to evaluate the relevance of the Braudel/Wallerstein world capitalist system for an understanding of an area of Morocco during the nineteenth and twentieth centuries.[57] In retrospect, the fundamental characteristic of the analysis was that it appears very empirical and only marginally theoretical because I was concerned not just to explain why I disagreed with much of what had been written on Morocco but also how firm or tenuous the support for my conclusions was. By adopting explicitly a Pyrrhonic attitude toward the data I was not forced, by the logic of my arguments, into exaggerating the indubitability of my conclusions and the irrefutability of my endorsement of a particular theoretical position. In the current state of theory, that my analysis alternated between a local and international unit of analysis made it difficult to conclude entirely in favor of a particular theory. But this was due at least in part to the limitation of the theories now available. It is possible that a future theory might not have these same limitations.

Pyrrhonic scepticism, despite refraining from declaring the impossibility of unassailable theory, has sociological and intellectual advantages over any form of certainty. The Pyrrhonic sceptic's public servility, neutrality, or revolutionary fervor is a matter of deliberate choice, not a requirement or inadvertent aspect of theory. Pyrrhonism encourages original thought without discouraging serious consideration of any particular hypothesis. As long as a question is seen to remain open, there is an incentive to gather additional relevant information. There is nothing intrinsically empirical, as opposed to theoretical, about Pyrrhonic scepticism. Yet, in areas such as anthropology and history, where data are qualitatively more uncertain than

that of physics, one would expect the majority of significant challenges to theory to come from improvements in the quality of the data gathered. In practice this means research by Pyrrhonic sceptics requires more thorough analysis of data than otherwise comparable research by advocates of particular theories. Nevertheless, unlike Boasian anthropology, which long ago issued clarion calls to collect more data, Pyrrhonic scepticism is on diplomatic terms with all theories.

NOTES

1. The three best works on Pyrrhonic scepticism are: Richard H. Popkin, *The History of Scepticism from Erasmus to Spinoza* (Berkeley, 1979); Richard H. Popkin, *The High Road to Pyrrhonism*, ed. Richard A. Watson and James E. Force (San Diego, 1980); and Arne Naess, *Scepticism* (Oslo, 1968).
2. Naess, *Scepticism*, provides a thorough discussion of the philosophical ramifications of Pyrrhonic scepticism. I will instead be concerned with the sceptic as researcher in the hard and soft sciences. This has several implications: a) the balanced role of conjecture and refutation in science takes the place of search for balanced arguments for and against philosophies, b) research is often a joint enterprise extending over many years, and c) therefore, a Pyrrhonic sceptic is likely to maintain tentative hypotheses unchanged until evidence accumulates that the hypothesis is not entirely adequate and needs to be reformulated. The essence of the Pyrrhonist position in scientific research is that the hypotheses remain tentative and that the search for refutation and better conjectures continues.
3. This is the designation traditionally used by Pyrrhonic sceptics.
4. Ludwig Wittgenstein, *Philosophical Investigations* (Oxford, 1968).
5. Popkin, *History*, xv.
6. See Naess, *Scepticism*, 5, for an account of the Pyrrhonic suspension of judgment (ataraxia). Naess's work is exclusively concerned with Pyrrhonic scepticism as a philosphical position and this detracts somewhat from his account. As it moves into linguistic philosophy and the philosophy of science, modern philosophy is becoming more empirical and there is increasingly less justification for separating philosophy from the scientific endeavor.
7. Some well known Pyrrhonic sceptics have not distinguished between strong and weak arguments. Perhaps the best known is Pierre Bayle (1647-1706). Popkin provides an excellent account of Pyrrhonic scepticism in Bayle, Montaigne, Descartes and Spinoza's positions (see note 1). Pierre Bayle's *magnum opus* is the *Dictionnaire historique et critique* (Amsterdam, 1740). Throughout this enormous work Bayle tends to throw in any argument he feels like using, whether it is strong or weak. I consider Bayle an indiscriminate Pyrrhonist

and do not feel he represents the best of the Pyrrhonic tradition. Although I emphasize a more positive and commonsensical Pyrrhonic scepticism, I am aware that common sense is not an absolutely essential characteristic of a Pyrrhonic sceptic.

8. See note 1 for my choice of the best works on Pyrrhonism. I have also been strongly influenced by reading the works of Ludwig Wittgenstein and Søren Kirkegaard.
9. I am personally acquainted only with Sextus Empiricus, *Outlines of Pyrrhonism*, trans. R.G. Bury (2 vols.: Cambridge, Mass., 1933-49). Popkin, *History*, 322, gives a complete bibliography.
10. Tarski's theory of truth ("The Semantic Conception of Truth," *Philosophy and Phenomenological Research*, 4 [1943/44], 341ff.) and his *Logic, Semantics, Metamathematics* [Oxford, 1956] and his "proof" that every universal language is paradoxical suggests both that there is justification for talking about objective truth and that any system which claims to demonstrate the objective truth indubitably and irrefutably will itself be contradictory. See also a summary in Karl R. Popper, *Objective Knowledge* (Oxford, 1974), 45ff. Heisenberg interpreted his indeterminacy formulae as suggesting that observation itself imposed limits on the possible precision of measurement. There are, however, legitimate questions whether Heisenberg's interpretation of the formulae is correct (see, for example, Popper, *Objective Knowledge*, 301-04). Einstein's theory of relativity indicates that measurements even of such basics as space and time are at best contingent measurements. The statistical emphasis of modern quantum physics also fits exceedingly poorly with claims to absolute certainty.
11. Aesthetic appreciation of a picture or an equation is not a deductive conclusion. It is better described as a cultural and personal opinion and so has an altogether different status than a claim to certain objective truth.
12. Popkin, *History*, xvi.
13. Ibid., Chapter 1 ("The Intellectual Crisis of the Reformation"), esp. 15.
14. Calvin's position was that reason brought one to rely exclusively on the Bible and absolute faith in one's (Calvinist) interpretation of the Bible sufficed thereafter. Faith played an important role in confirming reason, but reason and God's illumination had to provide the substance.
15. *Newsweek* (November 26, 1984), 117.
16. The Pyrrhonic position gives one a basis from which to criticize dogmatic claims without opening the way to relativism. Uncertainty need not be used to justify accepting every dogmatic statement; instead every dogmatic statement can be viewed as equally unjustified. The popular tendency to take the former approach has a sociological explanation.
17. Michel de Montaigne, "Apologie de Raymond Sebond" in *Les Essais de Michel de Montaigne*, ed. Pierre Villey (Paris, 1922).

18. Popkin, *History*, chapter 3.
19. See ibid., 6, for Luther's opinion of Erasmus' mild Pyrrhonic scepticism.
20. Ibid., chapter 7.
21. Ibid., 143. Gassendi's mitigated scepticism has the advantage of not being preoccupied with the uncertainty of knowledge. If we have access to appearances, progress in our understanding of appearances is possible even if this progress never justifies certainty.
22. Ibid., 138-40.
23. Kant's explanation of the laws of science in his *Critique of Pure Reason*, as laws whose truth is almost definitionally linked to the clarity of the concepts and categories used to discover them seems no more than a metaphysical sleight of hand today. His postulate that the only moral life is the life of duty motivated solely by good will has withstood the test of time a little better, but is unlikely to seem an indubitable truth all the same. See Immanual Kant, *Religion Within the Limits of Reason Alone* (New York, 1960).
24. The best synthesis of Hegel's work I am acquainted with is Charles Taylor, *Hegel* (Cambridge, 1975). See in particular pages 53ff.
25. Hegel, *La phénoménologie de l'ésprit*, trans. Jean Hyppolite (2 vols.: Paris, 1966), 2: 171, 175.
26. The issue is a complex one in Marxist thought. If one reference only could be cited I would refer the reader to Georg Lukács, *History and Class Consciousness* (London, 1971).
27. Some recent Marxist work has ventured beyond this assertion, notably Maurice Godelier's work, beginning with *Horizons* (Paris, 1973). See also Donald Crummey and C.C. Stewart, *Modes of Production in Africa* (Beverly Hills, 1981), esp. chapter 4 by Bogumil Jewsiewicki, "Lineage Mode of Production: Social Inequalities in Equatorial Central Africa."
28. This was pointed out by Shlomo Avineri in *The Social and Political Thought of Karl Marx* (Cambridge, 1968), 182-84.
29. I refer to Marx's general intimations that revolution is in principle immanent and his indications in *The Communist Manifesto* that, after the correct sort of revolution, everything would be idyllic.
30. Gregor Malantschuk, *Kierkegaard's Thought* (Princeton, 1974) is probably the best introduction to Kierkegaard. My reading of Kierkegaard is that his justification for using synonyms was to avoid any possibility of being accused of formulating a dogmatic system. Ludwig Wittgenstein's mature work is *Philosophical Investigations* (Oxford, 1968).
31. Popper gives his best account of this basis in his *Objective Knowledge* (Oxford, 1972).
32. Popper, *Conjectures and Refutations* (New York, 1965). Those interested in the debates over Popper's ideas should read Paul Feyerabend, *Against Method: Outline of an Anarchistic Theory of Knowledge* (London, 1982), who is very critical.
33. Popper is at his most dogmatic in *The Poverty of Historicism* and *The Open Society and its Enemies*.

34. See *The Open Society and its Enemies* for Popper's confrontation with Marxism. I have my understanding of supergravity theory second-hand from Gary Taubes, "Einstein's Dream," *Discover* (Dec. 1983), 44-53.
35. Arne Naess, *Hvilken Verden er den Virkelige* (Oslo, 1969), 195-98. My translation.
36. Feyerabend, *Against Method*.
47. Ibid., 66.
38. Ibid., 35, 43-44.
39. Ibid., 38.
40. Ibid., 47.
41. Ibid., 166.
42. Ibid., 47.
43. Ibid., 43.
44. The Human Relations Area Files are prepared at Yale as paper slips or microfiche.
45. I.e., quantum theory.
46. Frederic L. Pryor, *The Origins of the Economy* (New York, 1977), 426.
47. For criticism of this approach see, for example, Jesse Schwartz, *The Subtle Anatomy of Capitalism* (Santa Monica, 1977).
48. The distinction is between theoretical differences and differences in the empirical reality to which theory is applied.
49. Godelier, *Horizons* is an early example of this trend.
50. Immanuel Wallerstein, *The Modern World-System* (New York, 1974), 349-51. For Braudel's analysis see note 54.
51. Wallerstein, *World-System*, 8.
52. Ibid., 67.
53. Ibid., 351.
54. Ibid., 301-07. Fernand Braudel, *Civilisation matérielle, Economie et Capitalisme au XVe-CVIIIe siècle* (3 vols.: Paris, 1979), 2: 235-36.
55. Witold Kula, *An Economic Theory of the Feudal System* (London, 1976).
56. Braudel, *Civilisation*, 2: 235-36.
57. Thomas K. Park, "Administration and the Economy" (Ph.D., University of Wisconsin-Madison, 1983).