THE PLACE of THEORY in the OLD STOA

Masters of Philosophy Thesis in

Systematic Philosophy

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Abbreviations

AFL	Ancient Formal Logic, Bochenski
AGP	Archiv fur die Geschichte der Philosophie
AGW	Abendlandischen der Gesellschaft der Wissenschaft zu Gottingen
AM	Adversus Mathematicos, Sextus Empiricus
ASPW	Aristotle's System of the Physical World, Solman
CHR	Chrysippe, Biehier
CN	de Communibus notitiis, Plutarchus
CQ	Classical Quarterly
DASN	Die Altere Stoa und ihr Naturebegriff, Simon, H & M.
DES	Der Erkenntnis theorie der Stoa, Stein
DL	The Development of Logic, Kneale, W&M.
DPMP	Das Problem der Materie in Platons Timaios, Schulz
DS	Die Stoa, Pohlenz
EP	Ennoia and Prolepsis in the Stoic Theory of Knowledge, Sandbach
EUDS	Epiktet und die Stoa, Bonhoffer
EUSP	An Essay on the Unity of Stoic Philosophy, Christensen
GDL	Geschichte der Logosidee, Aall.
GN	Gnomon
GP	Greek Philosophy, De Vogel
GRPA	Greek and Roman Philosophy after Aristotle, Saunders

GSE	Grundbegriff der Stoischen Ethik, Reith
HFL	History of Formal Logic, Bochenski
HOL	History of Logic, Prantl
HOP	History of Philosophy, Uberweg
LDP	L'evolution de la Doctrine du Pneuma du Stoicisme a S. Augustine, Verbeke
LEP	Lives of Eminent Philosophers, Diogenes Laertius
LMPS	L'ame du Monde de Platon aux Stoiciens, Moreau
PAAS	Physis und Agathon in der Alten Stoa, Grumach
PATS	Plotinus and the Stoics, Graeser
PC	The Philosophy of Chrysippus, Gould
PCSP	The Problem of Cognition in Stoic Philosophy, Wisniewski
PELS	Plutarque et le Stoicisme, Babut
PHP	Platonismus and Hellenistische Philosophie, Kramer
PIS	Problems in Stoicism, Long
POS	Plutarch on the Stoics, Sandbach
PQ	Philosophical Quarterly
PR	Philosophical Review
PRE	Pauly's Real-Encyclopadie der Classischen Altertumswissenschaft
PS	Physics of the Stoics, Sambursky
PSC	A Problem in Stoic Cosmology, Lapidge
PSP	Problem der Stoischen Physics, Bloos
PX	Phoenix

SAE	Stoic and Epicurean, Hicks
SAP	Sensation and Perception, Pamlyn
SL	Stoic Logic, Mates
SP	Stoic Philosophy, Rist
STK	Stoic Theory of Knowledge, Watson
STL	Stoicorum Lekton, Orth
STPK	Stoic Theory of Perceiving and Knowledge, Andriopoulos
SVF	Stoicorium Veterum Fragmenta, Von Arnim
TAPA	Trans and Proc. of the American Philological Assoc.

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INTRODUCTION

The intent of the following discussion is to fix a focus upon those elements of Stoic philosophy which seem most likely to assist us in eventually coming to grips with the Western understanding of theoretic thought.[1] From the beginning two points must be made explicit, namely why it is considered important that we understand the meaning of Western theory, and why a study of the Old Stoa will meaningfully contribute to this ambition. In developing the grounds to support the first point it should become clear that theory has been playing an important role in our culture, and secondly, that it is urgent for men and women today to realize what this role is. In

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[1] Coming to grips with the Western notion of theory is not a goal which can be reached in this paper. On the contrary, it merits a communal task force of scholars, a constant open dialogue between the respective sciences, and many years of study. This thesis must be viewed as only an initial step toward the reaching of this goal. For this reason, and because I believe that all positive systematic advances in philosophy depend upon a certain level of historical insight, this paper will exhibit a heavier emphasis on historical-philosophical rather than purely systematic-philosophical analysis. This does not however exclude all systematic analysis. Indeed, what we are after in our historical orientation of Stoicism is to keep in view specific systematic questions.

establishing these grounds I will also be presenting a distillation of my Master's program of study at the Institute for Christian Studies, since the place of theory in the West has been the leading concern of this program. With respect to our second point, i.e., establishing the validity of making a study of the Stoics for our larger concerns with the nature of theory, several criteria must be employed. Our selection of the Stoics as fruitful subject matter must be grounded in (1) their relevence for the specific systematic questions which we feel must be answered and (2) their significance for the historical context which we must have understood before these systematic questions can be meaningfully addressed.

In order to expand on these matters the remainder of this introduction will proceed in three parts. First I shall try to confirm two things: the nature of the context from which this study arose and the limits of the field under investigation. Part two details the major obstacles one must face in making a study of the delimited field, and the final section will introduce us to the actual subject matter.

Part One -- The Paremeters of the Field

This thesis stands upon a number of assumptions. The first assumption is that the history of Western philosophy can be best summerized as an evolution of a variety of tentative solutions to the big life-questions first theoretically posed by the Greeks, in particular those questions which have come down to us in the language and conceptual frameworks of Plato and Aristotle. The assumption implies that there has been only one philosophical tradition in the West, "the Greek tradition." The history of Western philosophy is nothing more than man's struggle with the Greek manner of defining the meaning of life, the man who lives it, and the world in which he lives.

Such a stance does not hinder us from considering Western philosophy both as a diversity as well as a unity. For in spite of its being united with respect to its Greek orientation, Western philosophy exhibits a diversity of attempts (i.e., philosophical schools) to resolve and/or move beyond these Greek problematics. However, especially with this diversity in mind it must be understood that as "the philosophical tradition" has been continued from one generation to the next, with each successive generation replacing all previous solutions with its own, the possibility of successfully settling basic questions has appeared ever more remote.

Most philosophical schools have led relatively short lives, and within "the tradition" there has been little lasting unanimity. The predominence of the Greek mind-set has caused philosophy to look more and more like a futile enterprize. Indeed, after roughly 2,000 years of "merely" developing ingenious modifications (in spite of the attempts of both Christian and humanist thinkers who have sought to extract themselves from the tradition) philosophy presently reflects not only a recognition of this futility, but also the attempt to completely re-locate it, viz. to the areas of logic, language, and mathematics. This transfer is being made with the belief that finally the unanserable Greek problems are being left behind in favor of other, truely theoretic problems; those which can almost certainly be solved in a definitive manner. Presently it is not clear whether this belief is accurate, making twentieth century philosophy the beginning of a whole new tradition of philosophy or, whether it is just another school of "the philosophical tradition."

The second assumption is this: the above mentioned futility of "the philosophical tradition" comes as a direct result of the inability of philosophers to step outside of the bounds established by the Greek manner of philosophizing. Upon close examination we discover that our Western philosophical experience has

been mostly limited to the field of possible alternatives for answering Greek questions. The motives for asking such questions and the questions themselves, lie deeply embedded in our accepted cultural mind-set. Therefore, if the history of Western philosophy can teach us anything, it is to be wary of engaging in this futile search without first subjecting to question the validity of what has been assumed. If this lesson is not learned, then it is inevitable that our work at I.C.S., of which this thesis is a representative, will become just one more mutation in the chain. While reveling in our own definitive form of "Hellenistic thought", we will leave the general direction of this evaluation virtually unaffected.

We are now faced with the question, how are we going to analyse the nature of analysis without being enslaved to the Greek point of view? Obviously, we ought to begin by utilizing a methodology which attempts to question what has heretofore been held indubitable. Such an approach is more concerned with how the important problems have been put philosophically, rather than soliciting the correct answer. But, in spite of its hoped for merits, this methodology is not easy to implement. For, even when we jump back in time to the ancient Greeks and the beginnings of Western philosophy, we find that the basic tenets of Western thought were not always explicitly stated. Though these fundamental

building blocks were not as unconsciously emeresed into the Western consciousness as they are today, being indubitables they have always remained above suspicion.

Conceiveably, we could try to analyse several such tenets of Western philosophy, but to keep our scope manageable we have selected just one very important one, the Western understanding of the nature of theoretic thought. This issue in itself encompasses a whole nexus of questions.

We need to proceed further by mapping out these specific questions, but before we do let us briefly establish the grounds upon which we chose to deal with this problem and not some other one.

Our basis for treating this particular problem comes within the broader context of a third major assumption; namely, the whole of Western civilization can be dubbed "the story of man's quest for absolute autonomy." Initially Western man struggled to free himself from the power of the Myth. This he finally accomplished through the Knowledge gained from the Christian religion. However, he soon believed that he had only traded one master for another. Christianity was also seen as something which checked the progress of human freedom. The end of Western man's sojourn seemed eminent as he jettisoned Christianity and came of age as Secular Man. Unfortunately, he was still something less than autonomous being crually subject to the laws of Nature and his fellow man.

Throughout his frustrated quest to rise above all that is metaphysical or natural Western man gave certain institutions priority in expressing his autonomy, viz., organized religion, the state, the economy, and the academy. The failure to fully achieve autonomy was also apparent in the manner in which these institutions were seen to relate to one another. Western man has never been able to satisfactorily emancipate himself via any one of these institutional extensions of himself, nor strike a satisfactory balance between them. Thus, from the viewpoint of science, the battle lines involved for asserting itself as the prime concretization of human autonomy over the other three choices were drawn as follows: on the question of authority and tradition (against organized religion), on the question of enforcing authority (against the state), and on the questions of prestige and influence (against the economy).

We have a positive test for holding to this assumption since it has proven itself to be an invaluable tool in opening up the meaning of a significant piece of Western history, i.e., the High Middle Ages (1000-1300AD). Defined "externally" this period reflects a time when man was on the threshold of becoming <u>free</u> from every kind of supernatural force. Even though Religion and Scholastic thought reigned supreme on the surface, there existed a strong (Greek-Boethian) undercurrent of humanist speculative thought in the Liberal Arts which undermined

it all. On the "internal" nevus the university was being born from the womb of the Roman Church, meaning that at least initially "theory" was ancillary to "theology". As long as this relationship endured the matter of certainty and Knowledge necessarily rested upon the authority and tradition of the church fathers, not upon scientific proof. At this same time the state and the Roman church were at the height of their own power struggle as feudalism was giving way to nationalism. These years marked the pope's last vestiges of political influence. Throughout this particular battle the university was used as a political football. Furthermore, all of these confrontations were made possible only because of the fantastic stimulation of the economy which followed upon the heels of the Crusades. In sum, the High Middle Ages were typified by a mobilizing society. Societal wealth, power, and authority were all being decentralized from the Roman Church. Man was Coming of Age, he needed a corresponding re-alinement of secular institutions to give expression to his autonomy and to replace the church as the integrating force of society.

Thus, the urgency of dealing with the question 'What is the Western notion of analysis?' is evident in this slightly different rewording: 'What is it about theoretic thought that has made it a prime contender for expressing man's secular autonomy?'

My fourth assumption or hypothesis is that the answer to this question is closely connected with the answer we will eventually receive from those more specific questions of the nexus previously mentioned. Those questions must now be raked to the surface.

One of the most obvious beliefs Westerners have about theory is that to be theoretic one must be logical. When someone is busy defining or identifying some "unknown" both in terms of the differences and the likenesses it bears to certain other known things, he must also observe the laws of logic. Analysis is that activity which logically makes clear and explicit what was only known vaguely before. In simplest form the conclusion of analysis follows from the logical formula x=y; y=z, therefore x=z. For example, we have found it more meaningful in this context to identify orange in terms of an apple (because they are 'different in as much as they are the same', being two kinds of fruit), rather than in terms of a baseball (since it is not so helpful to define an orange as a kind of round object), so we call an orange a fruit. In other words, based upon the logical process: if something is a succulent product of a perennial plant, then it is a fruit; (and) oranges and apples are succulent products of perennial plants, therefore it follows that oranges and apples are fruits.

However, this gives rise to some questions, e.g., what is really made known when we identify an orange as a fruit?, and what is the nature of this 'therefore it follows?' Responding to the first question we ought to say analysis defines and identifies "this orange" by making known the constant universally valid relationship which holds between it and the defining order -- in this case <u>being a fruit</u>. By this it has usually been understood that strictly individual things are never analysed to the point of definition without reference beyond themselves to the <u>kind</u> which they exemplify. In answer to the second question we find correct logical procedure to exhibit a <u>necessity factor</u>; this factor is integrally expressed in the form of the conditional proposition, i.e., "if..., then...."

Yet another level of questioning remains. First, what is the nature of the <u>kind</u> being-a-fruit?[2] The second and perhaps most important question of all, is how does the necessity in logical progression relate to the identifying order? More succintly, is the order of the cosmos an order of logical necessity?

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[2]This question brings us face to face with one of the biggest problems to plague Western philosophy, the meaning of the Universal.

The answers one eventually gives to all of these questions, especially the last, appear tremendously important for our earlier question regarding man's autonomy. Once you suppose the cosmos to be basically a universe cohering logically, and analytic abstraction the only vehicle for knowing the coherence, it is a relatively small step to the conclusion that man is autonomous via his capacity to theorize, i.e., to produce scientific knowledge is to produce universally valid law.

Having thus pared down the systematic parameters of our field to a workable format, we must delimit our field in yet another way. We are not ready to work our way through these problems from a purely systematic point of view. We must remember that this is only an initial step in achieving a long range goal. As I have said before we do not wish to fall victim to "the philosophical tradition" by discussing possible dead end questions. To help assure ourselves that these questions will assist us in eventually breaking with the tradition on the point of understanding theory we must now emphasize an historical focus. We need to single out a particularly significant school of thought from the tradition so that via a sensitive dialogue, we can more readily understand the burden carried by the systematic nexus we have just charted. For this purpose we will direct our attention to the Old Greek Stoics,

namely Zeno of Citium, Cleanthes, and Chrysippus.[3]

To conclude part one let us review the reasons why we ought to study the early Greek Stoa in view of our knot of problems, and not someone else such as Aristotle?

To validate our preference for wanting to study the Stoics we must first understand something about the two distinct traditions which together constitute the early history of logic. The two traditions are primarily characterized by the kind of 'argument' they stress, i.e., demonstrative and dialectical. Aristotle initially developed the tradition of demonstrative argument, or 'argument from true premises.' The dialectical tradition, which emphasized 'valid argumentation' (with a view to refute an opponent's claim), was begun by the Megarians,[4] and later systematized and popularized by the Stoics. Both traditions presuppose a history of men

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[3]The Old Stoa was almost completely responsible for developing the contours of the Stoic philosophy. Later thinkers more or less 'carried on' the tradition without really adding much. They made their influence known however, by means of the particular aspects of Stoicism that they stressed.

[4]Euclid (a student of Socrates), Eubulides, Diodorus Cronus, Stilpo, and Philo, to name the most important.

making inferences and challenging those made by others, so we are not debating the point as to which tradition initiated theorizing. Together they treated previous theorizing as their field and proceeded to systematically order that field by articulating the principles of valid inference. As a result of this work one was more easily aware of how to proceed in order to win his argument (inductive dialectic) or prove his point (deductive demonstration). Since the tradition of demonstration was couched in Aristotelian philosophy with its appreciation for geometrical proof and its search for Platonic essences, Aristotle was busy asking 'if A belongs to B?' His principal tool was a syllogistic logic and a language of terms. Concerned with altogether different matters, the Megarian-Stoic line's primary concern was, 'how can the statement "P" be refuted?' Thus the Megarians and Stoics constructed a propositional logic. Furthermore, in needing to develope the rules of thought and inference for their purposes, they highly formalized their logic. Contrary to the hostile relationship these two early expressions of induction and deduction shared, modern scholarship has shown the two logics (if you will) to be really compatible. Indeed, the Aristotelian logic presupposed the area of work considered by

the other.[5] Since we are chiefly concerned with the formalizing of theory and its philosophical context, a study of the Megarian-Stoic work now seems most proper.

The Megarians themselves cannot occupy our lime light as they ought because apart from references to their existence we have no material concerning them to study. We have only the later distillation and distribution of the work they began by the Stoics. For those who find it helpful to speak of Western philosophy as a single tradition, the study of the Stoics is now seen as especially importent; they represent the earliest available mature statement of the main tenets of western theory. If as we believe, all subsequent thinkers have been more or less exponents of this first statement, we are best served by (and I think we can most appreciate) the "original" articulation of the Stoics.[6]

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[5]See Martha Kneale's analysis in DL, p. 7f, and chapter 3, and I. Bochenski, HFL, 105f.

[6]There are those who hold the view that Stoic philosophy made little progress from what had gone on before, and was in fact a regressive step. See E. Brehier Chrysippe, p. 272. Prof. Uberweg is only slightly more generous, History of Philosophy, I p. 186. It remains however, that the Stoic School was by far the most popular school of philosophy from its beginnings to the second century A.D. Typifying this status is Clement of Alexander's remark that Chrysippus was the Master of logic (Stromateis, vii, 16, 323).

Other factors also exist which suggest that we will greatly profit from a study of the Old Stoa. Most important is the empiricist stance the Stoics took regarding the question 'how do we know?' The Stoics cultured a close working relationship with the special sciences, especially medicine. Although Plato and Aristotle were also among those who profited from the special fields, unlike them, the Stoics were not wont to chase any phantom universals. Neither did the Stoics leave room for any knowledge to come into our possession via some metaphysical route, e.g. a Reminecence Theory. All knowledge for the Stoics was firmly rooted in the existential world of sensation. This was the basis for their claim of a criterion of truth, a claim they had to defend against the traditional notion of flux and the scepticism of the Academy. The second factor is the Stoic initiation of the movement away from having to choose between Platonic Realism and Aristotelian Objectivism. Their alternative was an epistemological subjectivism. Not only did they shift the emphasis in philosophy from ontology to questions of knowledge, but the universally valid law order of the cosmos was identified with the universally valid ideas in the mind of man.

Part Two -- Problems in Studying the Field

The most detrimental factor one faces in a study of the Old Stoa is our almost complete poverty of original writings. Accentuating the problem is the fragmentary state of the chief secondary sources. Furthermore, these latter accounts of Stoicism were written no earlier than a few hundred years after the death of Chrysippus and about half of them were composed by hostile opponents who did not always take care to accurately present Stoic doctrine. In the wake of this devastating one-two punch combination there follows a knock out blow for most North American students because the best modern studies available are in German, French, and Italian.

We are further inhibited since we must be largely content with treating the Old Stoa as a static school. Since we have very limited information concerning individual differences, and because Chrysippus' prolific writings became the backbone of the stoic tradition, we must follow the general practice of interpreting all unattached fragments as belonging to Chrysippus. Thus, fragments which only posit "the Stoics say" or "they say" will be considered to mean "Chrysippus says".[7] The most

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[7] A recent study by J. Gould (PC) has countered this working principle. He limited the study of Chrysippus to only those fragments which specifically mention him as their author. The limited results of this study have only made the normal practice appear more appropriate.

irritating problem which results from adopting this method is to square inconsistencies in the fragments, especially in view of the probability that the work of Chrysippus was an extremely tight system.

All is not darkness however. Though we can do nothing about recovering the massive body of Stoic literature which has been lost, many of the commentators such as Diogenes Laertius, Sextus Empiricus, and Plutarch, have proven themselves to be reliable scholars. These men have preserved a number of important and sometimes lengthy direct quotes from Stoic writings. Secondly, whenever several commentators tend to agree on their description of a Stoic doctrine, we should feel safe in assuming its authenticity. It also seems possible to use the well founded belief in the unity of Stoic philosophy to advantage. Doing so, we can take seriously those speculations which make a number of important fragments more intelligible. It is further advantageous to our study that most all the necessary fragments have been translated into English. Most of these appear in the Loeb Classical Library, which doesn't consistently offer the most accurate translation; however, crucial fragments also appear scattered throughout present English scholarship. I have tried to keep track of as many of these locations as possible in the Reference Guide of the paper.

The modern tradition of Stoic scholarship which is epitomized by E. Zeller, presents us with other problems.[8] Of first concern is that Stoic philosophy has been short changed on at least two important matters. One, Stoic philosophy has too often been considered as primarily an ethical and social philosophy, leaving logic and physics underrated. Two, in contrasting Stoic Materialism with Platonic Idealism, a very modern notion of material has been employed making shambles of the concept of body in Stoic thought. For all of these reasons and more, the present state of Stoic scholarship in the English speaking world could be summerized as immature (although the last two decades have seen a marked change for the better, a trend which seems to parallel that of Plotinus scholarship.) Most of what is now available to us in English is either a brief general assessment of Stoic philosophy as a whole, or is a detailed account of some minute detail. We are left wanting a thorough and knowledgeable account comparable to the work of Pohlenz in Germany.

To end Part two with a word of encouragement, we are particularly fortunate in pursuing our present study in spite of the poor situation just described because our particular problematics are treated in a relatively extensive manner in the fragments and this has inspired a number of books and articles specializing on these matters in recent years.

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[8] For more on this tradition see the concluding paragraphs of this introduction.

Part Three -- The Stoic Curriculum as a Window

The Stoics' curriculum model is a helpful way to become introduced to the school. The approach is successful since this curriculum projects an accurate picture of how they understood the main divisions and relationships in the world. In Stoic thought philosophy was the most general category. In following the dialectical method of Plato, the universal category was differentiated into many genera and species. The first plateau consisted of three subjects: Logic, Ethics, and Physics.[9] These prime divisions of philosophy related to one another in a specific manner which the Stoics explained using three different analogies. The first analogy likened philosophy to an animal: the bones and sinews were represented by logic, ethics was the flesh, and physics stood for the soul. Philosophy was likened to an egg in a second analogy: logic being the shell, ethics the white membrane, and physics the yolk. More complex than the first two, the last analogy compared philosophy to a fertile field: logic the fence surrounding the field, ethics the grain which grows there, and physics the soil.

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[9]The Stoics were the first to make a three-fold division of philosophy. Medieval ecclectics had some difficulties in squaring this division with the two-fold division in the Platonic tradition.

Combining these images we end up with logic as the skeleton or bounding structure of philosophy, i.e., it fixes the limits of philosophy and guards its truth; ethics functions as the fruit or goal of philosophy which one strives for within these limits; and physics yields an understanding of the most profound essence and substrata of Nature.

There is a rational unity in the Stoic cosmos which permeates all three divisions of philosophy. This is <u>logos</u>, a notion to which we will give considerable attention in the main text. The unity in the three primary genera of philosophy can be characterized thus: logic studies the logos of man, physics studies the logos of the cosmos, and ethics studies the logos of the relationship between the two, namely, <u>living according to Nature</u>.

The order in which these disciplines were to be studied was also of importance. Although the sources present us with differing sequences, the one which most corresponds with the analogies comes from Sextus Empericus (vii, 22; also SVF II 44).

> The Stoics teach that we should begin with logic, continue with ethics, and place physics last. For first it is necessary to make the mind sure so that it will be an invincible guardian of the teachings, and dialectic serves to make the reason secure. Second we must subscribe to ethics to improve our character, for the study of ethics is without danger to one who has

> previously mastered logic. And finally we must proceed to physics, for it is more divine and requires more profound attention. (NB: the study of the gods was the last subject of physics.)

In detailing the sub-headings of the main branches of philosophy we must keep in mind that not all of these specializations were equally developed. Indeed many only refer to distinctions that the Stoics were able to make; the development of these fields was still wanting. This was indeed a model for the Stoics, it did not represent a full-blown scientific diversity. In any case, we know relatively little about the precise contents of most of these philosophical-species.

Logic was divided into three sub-sciences, rhetoric, dialectic and what I shall call criteriology.[10] Rhetoric consisted of the invention of arguments and speech; dialectic was divided into discourse and language; criteriology discussed the comprehensive phantasia (See II. 13). These were all subdivided much further (See the chart below.) The field of Ethical philosophy consisted of eight topics. Apparently there is no order of priority among them, Diogenes Laertius simply lists them as follows: the Topic of impulse or self-preservation; the Topic of things good and evil; the Topic of the passions; the Topic of virtue; the Topic of the end; the Topic of primary value and action; the Topic of duties or the befitting (i.e., according to reason); and the Topic of inducement to act or to refrain from

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[10] A fourth science of "definitions" is sometimes alluded to.

acting. Physics was divided into three genera and five species, however the relation of the latter to the former is unclear. The general of physics were the study of the universe the study of the elements; and the study of causation. The first and third genera subdivide further. The study of the universe includes astronomy, which philosophers share with mathematicians, and physics. The study of causation includes the study of the causation found in the soul, a field the philosophers share with the medical people, and the study of cosmic causation, which is again shared with the mathematicians. The five species of physics were (1) the study of bodies, (2) of principles, (3) of elements, (4) of the gods, and (5) of the bounding surface and space (filled and unfilled). This completes our summary except for the following illustration of logical sub-readings.

Logic

rhetoric

invention of arguments
- -expression
- -arrangement
- -delivery

speech
- -introduction
- -narrative
- -rebuttal
- -peroration

dialectic

discourse
- -presentations and their predicates
- -propositions spoken and their subjects and predicates
- -singular terms : direct or reverse
- -genera and species
- -arguments (demonstration)
- -moods
- -syllogisms
- -fallacies of subject matter and language
  - --true, false, and negative arguments
  - --defective, insolvable and conclusive arguments
  - --the veiled, horned man, no man, and the mowers fallacies

language
- -written
- -parts of speech
- -errors of syntax including single words, poetical diction, verbal ambiguity, euphony and music, terms, divisions, and style.

criteriology

To close our Introduction we must once again stress the unity of Stoic philosophy:

> The Stoic philosopher is a man caught by the quest for unity. If this life is to make sense, all of it must be taken into account and somehow justified. Therefore Reality must be rational, not random, and organically one, i.e., it must somehow have the characteristics of a human being, if human beings are to feel that they are meaningful parts of the Universe: and that they must feel, for there is no other whole within which a thinking man may satisfactorily be a part.[11]

Our upcoming analysis of Stoicism will begin with a discussion of their physics since as we have just seen, this provided the ontological underpinnings for their logical and ethical theories. This approach is not novel, many general studies of Stoicism, past and present, have been patterned to parellel the main branches of Stoic philosophy. These works generally begin with physics and follow through with logic and ethics. However, even among those who have dealt with Stoicism in this comprehensive manner there are many who have not taken cognizance of the unity of Stoic philosophy. On the contrary they have established the common practice of slighting the physics and logic, and moving as

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[11] J. Christensen, EUSP, p. 11.

quickly as possible to the ethics.[12] It is precisely this approach -- with its traditional mistaken notion that "the practical" is the deepest motive of Stoicism -- which sustains the superficial popular belief that Stoicism essentially refers to a phlegmatic and unemotional stance toward life, especially psychic life.

Actually, the view that Stoicism is in principle a social-ethical philosophy has its origin in Hellenistic times when Stoicism was simultaneously extremely influential but beyond the point of its principal development. From an historical point of view this reduction of Stoicism to a particular socialogical posture is quite understandable. In the first place, after the prolific work of Chrysippus the Stoics themselves were not overly concerned with developing either physics[13] or logic.[14] Secondly, within the overall general decline

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[12]Among those who have been guilty on this point are E. Bevan (Sceptics and Stoics), A.W. Benn (The Greek Philosophers, London, 1914, p.333), R.D. Hicks (Stoic and Epicurean, p. 54), E.Zeller, (Philosophy of the Greeks, p. 210f), H. Gomperz (Die Sebansauffassung der griechischen philosophen, Leipzig, 1904, p. 188), and A. Dryoff (Die Ethik der Alten Stoa, Berlin, 1897, VII f).

[13]As we will have opportunity to discuss later (point I.B.) Chrysippus' expansion of Pneuma to a cosmic concept rendered most of Zeno's ontological problems obsolete. Also, the force of Chrysippus' system shifted the emphasis in philosophy from ontology to epistemology.

[14]The Chrysippean logic was seen as more or less complete. The most that was done in this area later on was to compile logic manuals for pedagogical purposes.

of intellectual competence in the late Hellenistic period, Stoic logic and physics became too difficult to be appreciated much less advanced. Thirdly, there was no one who could sensibly sift out stoicism from Neo-Platonism and Neo-Aristotelianism. As a final result, many fundamental stoic doctrines were rendered sterile by the doxographers, while at the same time they overemphasized easier to comprehend ethical implications; things which were originally not considered significant in and of themselves. Taken together these developments have given a particular shape to our contemporary inheritance of Stoicism. It is, an estate riddled with confused criticism and reports such as those of Tertullian and Lactantius. These criticisms were made in the absence of a Chrysippus - like figure who would have easily refuted and corrected their misunderstandings.

It should be plain from the historical matrix which stamped the birthright of our Stoic inheritence, that we have no excuse for not making the most of the original unity of Stoic philosophy as it was clearly expressed in the Old Stoa. Indeed, the results of most scholarship in the past thirty years pleads a strong case for this unity. There are many vital connections which link all the branches of stoic philosophy together. We are exercising the better part of wisdom I believe to think that the Stoics did not experience a theory/ practice dilemma at all. Rather, we should acknowledge

that for them logic, physics, and ethics were all on an equal par, all were on the level of Virtue. For this reason alone, our contemporary understandings of Stocism are much richer than those only a few decades ago. In the future we should not need to make a case for studying Stoic physics in order to understand their idea of theory for an example. It will be assumed that such a study will be meaningful, and it is in this spirit that this paper begins.

I. STOIC PHYSICS

A. Corporealism, Monism, and Individualism

Stoic physics not only included Cosmology, but also Theology. Its' principle task was to give a "rational description" of the world, i.e., to draw up an inventory of the world's irreducible furniture.[1] In this first section of chapter one our job will be to find answers for the following questions: (1) what was the nature of this world?, (2) what were the ontological irreducibles?, and (3) How do answers to one and two support the characterization of Stoic physics as emphasizing Corporealism, Monism, and Individualism?

First we must distinguish between world and universe. The universe includes a vast void which infinitely extends in every direction from the single spherical atom it circumscribes. This atom is the world, i.e., the physical earth and heavens. In principle the Stoic world is simply "The One which includes everything."[2] There is only The One. It is the

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[1] Some parts of the world were permanent while others were not. It is the former which concerns us.

[2] For this study we will only deal with the world since, as we shall see later, the thinking process is grounded in the physical continuity of the world.

Universal individual: the non-typical unit; the rational Macro-organism;[3] a living creature which never increases or decreases in size. Everything else that we might care to identify is only a part of the unified whole. The world contains (or is) its parts in two fundamental states: in time and a-temporally.[4] The One is usually called prime matter (prote hyle) or substance (ousia). In its a-temporal state, it is not qualified by anything since it contains within itself all the "individuals" which can ever be recognized as parts.[5] The One, in

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[3]The orderly and organic nature of The One will be discussed further in I.C.

[4]The unity of the temporal Whole is derived from one of the a-temporal parts.

> "The world possesses a general unity, while containing the greatest variety in its several parts. The beauty and adaptation of the world can only have come from a thinking mind, and prove, therefore, the existence of Deity. Since the world contains parts endowed with self-consciousness, the world as a whole, which must be more perfect than any of its parts, cannot be unconscious; the (world) consciousness....is Deity."

F. Uberweg, HOP, I., 194. This is a ground for epistemological subjectivism. (II.A.)

[5]That a body can be unqualified matter (i.e., non-composite in Aristotle's sense), will be discussed shortly. "Individual" here refers to qualified part. Stoicism did not support the Aristotelian notion that Individuals arose when a particular form was conjoined to matter. On the contrary, prime matter was expressable in particular ways according to internal arrangements; "individuals" are but modifications of the One.

time, is often called the pyr technikon or creative fire.[6] It permeates the temporal world as its all-pervading breath, as the soul and reason of the All. The creative fire is, therefore, the divine rational germ of all things (logos spermatikos).

Before we flesh out the unity of both a-temporal and temporal parts, there is a brief discussion which must take priority. At this point we must become familiar with the most general classification made by the Stoics. The first genera was "something" ('ti ' or 'guiddity').[7] Included under this comprehensive heading was: 'that which existed' (bodies) and 'that which did not' (incorporeals). The incorporeals were very few in comparison to bodies, for the latter term had an extremely wide application.[8] A body was not necessarily something

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[6]This identification points out an ambiguity with the concept fire as well as the chief ontological difficulty in Stoicism, i.e., a-temporally the divine fire is co-extensive with prote hyle, butin time it more precisely refers to the active arche.

[7]The Stoic 'ti' was the equivalent of Plato's 'hen' and Aristotel's 'on'. See SVF II 329, 332-4; and GRPA, p.81-2.

[8]The four classes of incorporeals (lekton,time, void, and place), were actually more of an epistemological nature (II A). Even in the mind they were somewhat exceptional "somethings." Thus, it is not improper to refer to body as the basic ontological unit. What ever is real is body.

"material" as one might conceive of it today, the minimum requirements for being a body were only that it have height, length, and breadth, i.e., extension in each direction.[9]

The most original and fundamental irreducible bodies in the world were the two arche (principles).[10] These principles were eternal, and inseparably joined to form prote hyle. One of the principles was acitve. It was called god(theos), or the working force in the cosmos; the principle of movement. This aspect of The

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[9]Air too is a body under this definition. The world possessed no void at all, not in bodies, nor between them. The world was a "material continuum." See Sambursky's PS.

[10]Not everyone agrees that the arche are corporeal. The case made to establish their incorporeal and mental status rests almost completely upon an editing choice within SVF II 299, which Von Arnim made in accordance with the Suda. Others have chosen other editions of the fragment to support the corporeality of the arche. I find the evidence available insufficient to support either claim, rendering this fragment neutral. However, there is much other evidence which clearly show that hyle and theos are bodies. (See the Reference Guide under arche for sources.) Until someone can convincingly refute the position of Lapidge, PSC, and Mattingly, ESPSF, I will accept the corporeality of the arche.

Most of the confusion on this matter stems from a misreading of modern materialism into the Stoic notion of hyle, as well as an Aristotelian interpretation of their physics. The arche are not limiting concepts. They do not correspond to Aristotle's form and matter, although one might be able to show that they were adopted to solve the same ontological problem as the latter were employed by Aristotle.

One qualified, individuated, and structured.[11] The other principle was passive, or capable of undergoing action. This arche was called matter (hyle); the principle of change. The two arche needed each other for their mutual existence; they accounted for the belief in a world balanced by a tension of opposites.[12]

In its temporal setting prime matter was concretely expressed in four irreducible elements, fire, air, water, and earth. "The formation of the world takes place by the transformation of the divine original fire into air and water; of the water one part becomes earth, another remains water, and a third part is changed

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[11]The "what" which is qualified, individuated, and structured, is a central problem in Stoic physics, especially if one interpretes their physics as an attempt to resolve the same questions which bothered Aristotle. Sometimes it appears that it is the corresponding passive arche which is formed, at other times it can only mean that the Whole has undergone modification. This problem returns in the epistemology, specifically where the Stoics explain the mechanics of sense impression.

[12]That the Stoic position was not in fact dualistic will be discussed shortly. Once again, the difficulty one faces is the use of Platonic and Aristotelian concepts in a foreign environment. That is, when we find the relationship of the Stoic arche precursed in Plato and Aristotle we must acknowledge their significance for dualism. For example, that the two arche are aspects of one process is described by Aristotle in Physics III 3. 202 b, 11-14. The road from Athens to Thebes is the same as the one from Thebes to Athens. Further, the concepts of 'active' and 'passive' were also borrowed. Plato used them to describe the relationship between the physical object and the receptive sense organ (Theaetetus 156a). For Aristotle they described the fundamental ontological relationship between mover and moveable. (Physics III 3. 202 a, 22 sqq.)

by evaporation to air, which, again, is subsequently rekindled into fire."[13] These several elements were mixed together in varying degrees, with the difference of degree qualifying identifiable parts.[14] Each element was a modified state of prime matter thereby possessing the tension of the two arche. Nevertheless, "the two denser elements, earth and water, are mainly passive and the two finer ones, air and fire, are mainly active."[15]

Eventually the elements are consumed in a cosmic conflagration which marks the end of this world, but which leaves the world mass in tact. Everything is returned to the a-temporal pre-elemental state of a fiery prime matter, now ready to start the whole cycle all over again; to give birth to another world. In each cycle prime matter is the eternal reality of all things as its mass never increases or decreases. The parts however, are always flexible. They continually suffer a change of elemental destribution. Consequently the kaleidoscopic arrangement of the world is never permanent, but, no matter how the pieces continually fall into each other, their order agrees with the cosmic

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[13] F. Uberweg, HOP, I., p. 194.

[14] The parts in time relate to the Whole in the same way a hand is a part of a man. The hand is not the same as the man, but neither is it different from the man.

[15] F. Uberweg, H P, I., p. 194.

reason, logos. In sum, "The rise and decay of the world are controlled by an absolute necessity, which is only another expression for the subjection of nature to law or for the divine reason; this necessity is at once fate and the providence, which governs all things."[16]

A general description of the Stoic world is now complete for our present purposes: The world is a rational unity in every respect; its birth, duration, decay, and rebirth are all according to logos; The irreducible constituents of the world are principles and elements; the former are constituents of the One, while the later express modes of the One. Variously mixed together, the elements form differentiated individuals. Extension is predicable to all of the irreducibles. Tinges of corporealism, monism, and individualism are latent in this recapitulation. As classifiers these "isms" need further explanation, a matter which cannot be undertaken without pulling-in a comparison of Stoicism with Aristotelianism.[17]

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[16] Ibid., See I.D.

[17] Deciphering Stoicism from Aristotelianism is still a major problem today. The difficulties stem from the tradition of exegesis as was pointed out in the Introduction but no less from the Stoics themselves. The Stoics were not only good at creating new technical terms and distinctions, but they frequently relabeled established concepts or used old concepts in totally foreign environments. The discussion which follows in the text is largely based on the arguments presented by Lapidge, PSC.

Much of the confusion surrounding the Stoic ideas of prime matter and its principles can be alleviated by pointing out three distinct meanings of matter. Hyle variously refered to (1) the one pre-existing substance out of which the world is created; (2) the passive aspect of this substance only; and (3) the 'matter' of particular created and ephemeral objects. The difference between the first and the third meanings is quite clear; the former is a-temporal and co-extensive with the Whole, the latter is not only temporal, but confined to a part of the Whole (indeed, a part of a part). The distinction between one and two is more ambiguous.[18] The ambiguity not only arises from the inseparability of the two principles -- making any reference to one arche alone in need of a special qualification -- but is grounded in two Aristotelian dogmas which the Stoics left in tact, namely, the World cannot be created out of nothing and a substrata must underlie change.

Aristotle posited that the world was eternal. Such an everlasting world had no need of a prime pre-existent matter, hence, there was no problem explaining

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[18]The Stoics did not make a standard and consistent differention between hyle and prote hyle or prote ousia. The confusion is further complicated by the attribute of "nonqualified" which was predicated to all three. Lapidge points out that the meaning of unqualified differs from one case to the next, and suggests how that might be possible. (PSC, p. 243 f.) As he concludes, the choice of terminology is in itself detrimental to a clear theory.

how the elements derived from the principles. By contrast, the Stoics held to a temporal world which was created and destroyed periodically.[19] Consequently, they were obliged to posit a substance out of which the world would evolve and at the same time serve as the substrata for the change which took place in the world. The function of matter as substrata is especially problematic, for it was understood to be separable (unqualified) in this capacity.

The idea of an unqualified matter[20] seems to militate against the Stoic doctrine that theos and hyle were in fact inseparable. If hyle is always permeated by theos, how could it ever avoid rationality and qualification? The answer, suggests Lapidge, is found in an appeal to Stoic nominalism. The quality-less-ness of matter is only thinkable. In other words, if one conceives of hyle "according to its nature"--assuming

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[19] Much work needs to be done before we can offer a likely hypothesis concerning the necessity of a created world in Stoic physics. Certainly it must have been viewed as a contributing factor in the Stoic stress on philosophical unity. No matter what problems it raised in the face of accepted physical doctrines, it must be appreciated as a whole-hearted attempt to replace the idea of transcendence with that of immanence. Aristotle himself was the preceding step in this crusade to achieve unity, only in this case unity was impeded by a basic dualism.

[20] The Stoics assuredly spoke of unqualified matter, SVF II 380.

that its nature is independent of relationship--it is without quality.[21] Thus, hyle can only be known in its second sense by conception, and not by experience.[22]

At this point one might ask 'what is really at stake here?' I read this problematic against the background of Aristotle's concepts of _form_ and _matter_. The Stoics "want their cake and eat it too." As aspects of the a-temporal One, hyle and theos are not parallel concepts to Aristotle's form and matter; but, hyle very much resembles Aristotelian matter[23] when its function of underlying change is brought to the fore. The question could now be raised, and was by Plotinus,[24] how can either arche be considered a body? Again the problem is created from an Aristotelian interpretation, this time, the peripateties notion of body as a composite of form and matter is superimposed upon the Stoics. As

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[21]SVF II 313, 318, 1047.

[22]Sextus Empiricus, AM, VIII, 58; SVF II 88.

[23]Aristotle's 'first matter' also exhibited an inseparable, unqualified, but incorporeal nature. (de gen et corr. II. I. 329 a 30; Metaphysics A. 3. 1029a 20; ASPW, p. 119, n.6.)

[24]_Enneads_ VI. I. 25-7; PSC, p. 247.

we will recall, the Stoic concept of body was much more dynamic and was only defined by three-dimentional extension. There is this main difference, whereas Aristotle's principles were limiting concepts, the Stoic principles were corporeal entities.

In overall perspective the Stoics adopted the position of Presocratic cosmologists: "If the universe as it exists is not eternal, it must have been created. If created, it could not have been created out of nothing. There must have existed some precosmic substance out of which the universe came to be...this pre-existing something....whether water, air, fire, or something less determinate ... was generally called the arche."[25] However, the Stoics did not call this prime matter the arche. Lapidge concludes that this could only mean the Presocratic position could not completely incorporate newer insights, especially those of Aristotle on genesis.

> The Stoics were obliged to explain <u>how</u> the cosmos arose from this one substance. In so far as they were materialists, they would have argued that all causation must be corporeal, that only matter can act upon matter. (SVF I 90, II 340, 341, 363, 387) Creation must have been caused either by a material force outside the one substance (a notion which

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[25]Lapidge, PSC, p. 251; see n. 51 also.

> would have been repugnant to their monism) or else by such a force within the one substance itself. (SVF II 311) Using Aristotelian terminology they designated one aspect of this substance 'active'. But that which acted could not exist without something to act upon. Aristotle had suggested that an arche could not exist by itself but must exist in something, and also that genesis could only take place from opposites. Hence more than one arche would be needed to account for cosmic generation (even though Aristotle himself did not consider such an event). The Stoics settled on two arche: each of these arche existed in something else and their functions were distinct enough that they might be considered opposites. It would have been quite appropriate to designate the active arche as theos. And at one point Aristotle had himslef suggested that hyle was characteristically passive (de gen. et corr. I. 7. 324 b 18 and II. 9. 335 b 29-30); the Stoics adopted this suggestion. They were consequently left with a cosmological paradox: while attempting to remain faithful to their monism in positing one substance, they required at least two arche to account for cosmic genesis.[26]

This analysis of Stoic cosmology is a most sensible one. Lapidge is sensitive to the Stoic notion of body by not giving it a contemporary "physicalness". His use of materialism is thereby compatible with my less-prejudiced term corporealism. Lapidge also appreciates the "dualistic" appearance of Stoicism insofar as the relation between the principles is concerned,

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[26] Ibid., p. 251-2.

without forgetting that the Stoic position is centrally monistic. He also clearly shows that Stoic physics only accepts the existence of individuals (bodies); transcendent realities are not to be found.

There remains a second problematic. The Stoics posited two kinds of fire; the creative fire of genesis, and the destructive fire which consumed the world in a giant conflagration.[27] The difference between the arche and the elements hinges upon this distinction, for it is apparent that the creative fire is technically an arche while the destructive fire is an element.[28] The fragments are confusing on this distinction and has caused commentators to ponder whether the Stoics really had four elements or if in fact there were five.

However great these problems now appear, they were multiplied by Chrysippus' inception into Stoic physics of pneuma as a cosmic force. The adoption of pneuma as the central feature of Stoic physics in effect rendered the above problematics obsolete. The paradox Zeno had bequeathed to Chrysippus was resolved in one mighty stroke of genius. The problems only persisted

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[27]Zeno upheld this difference, but apparently Chrysippus did not. PSC, p. 271.

[28]Ibid., p. 270.

because "so quickly and widely was the pneuma used to explain cosmic phenomena that there was little time to revise the traditional cosmology."[29] The net result of this innovation was a reinforcement of corporealism: bodily pneuma permeates the whole world; monism: all things physically cohere in pneuma; and individualism: the world is bodily pneuma, no distinction exists between 'a thing' and 'what a thing is.'

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[29] Ibid., p. 274.

B. Pneuma

The conception of pneuma was inherited by the Stoics from medical thought. Originally it meant the hot life-breath which permeated a body yielding a Zoion. Zeno probably only considered pneuma as a bio-physical phenomena. Chrysippus defined pneuma as fire and air, i.e., Macro cosmic correllates of the original microcosmic life force. Being the initiator of life for the cosmic animal, pneuma also subsumed the role of theos.[30] Also traditional to the meaning of pneuma was the characteristic of internal perpetual motion. Pneuma was a dynamic tensional field, a balanced tension of inward and outword self-flow. In the human body, this two way flow ran between the center of the Soul (hegemonikon), the heart, and its extremities, the sense organs.

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[30] "An obvious problem arises: the pneuma functions as an arche but is itself constituted of two elements. This problem did not escape ancient commentators. In a moment of penetrating analysis Alexander of Aphrodisias exposes the Stoics' dilemma. Alexander argues: (1) the Stoics posit two arche, hyle and theos, one active and one passive; (2) they say that theos is corporeal in so far as it is eternal and noetic pneuma; (3) but pneuma is itself composed of something of the four simple bodies which the Stoics call elements. And Alexander poses the following paradox: either pneuma may be a compound of elements, or else it must be some sort of 'fifth body.' No satisfactory solution to this paradox seems to have been found. The Stoics were forced to abandon Zeno's distinction between arche and elements, and between creative and destructive fire. Because pneuma is at once creative agent and is composed of elements, the constituent elements themselves assume the characteristics of 'activity' and 'passivity' which Zeno had assigned to the arche alone.

In the cosmic animal, the flow inward gave rise to unity and substance, the counter flow produced qualities.

Pneuma was responsible for unity on all levels (or in all the modes) of the world. As the structural unity of inorganic matter, pneuma was called hexis. The corresponding organic unity was called physis, and the pneumatic permeation of humanity was refered to as psyche.[31]

The extent of this permeation was total in a two-fold manner - the permeation was complete in the sense that pneuma was co-extensive with place,[32] viz., there were no void places within the Macro-atom. Total permeation was also achieved in the sense of a complete inter-mixing of body with body (krasis). For example the penetration of pneuma with matter is comparable to blending two liquids together with the mixture not exceeding the volume of the larger. Or again, a drop of wine penetrates

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[31] See page #1, and #4.

[32] "The cosmic pneuma was able to explain an infinite variety of phenomena; the stability of the cosmos, the inter-relationship of all cosmic parts to one another (as for example, lunar movement to tides), seeing and hearing, earthquakes and other terrestrial phenomena, the principle of growth in plants and animals, the cause of shape in all objects, to name only the most arresting features of the theory." Ibid., 275.

the whole ocean.[33] Via Krasis the Stoics achieved among other things, a unified concept of man: "Soul" qua body penetrated "body."[34]

C. Fate and Logos.

According to Cicero (De natura deorum II 57), Zeno said "Nature is a craftsmanlike fire, proceeding methodically to the work of generation. For he holds that the special function of an act or craft is to create and generate." Diogenes Laertus reports similarly: "Nature in their view is an artistically working fire (pyr technikon) going on its way to create,"[35] and again: "Nature is defined as a force moving of itself, producing and preserving in being its offspring in accordance with seminal principles (kata spermatikos logos) within definite periods and effecting results homogeneous with their sources."[36]

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[33]CN 1078 E; LEP VII, 15; SVF II 479.

[34]This view was antithetical to Aristotle's physics which assumed under no circumstances could two bodies be present in the same place. De Anima 418 B 17.

[35]LEP, VII, 156.

[36]LEP, VII, 148.

The notion of creativity-according-to-Logos yielded "a natural power working in a unified fashion through the control of details to produce in time one perfect co-ordinated structure."[37] Three crucial relationships are contingent upon this meaning of the One: (1) the relationship between man and Nature, between law and responsibility, and between order and rationality.

The built-in tendency to design (i.e., logos) is common to man as well as Nature. In fact, this is the key channel by which the human microcosim shares in the Macrocosim. For man, techne refers to an 'activity according to design', knowable only gradually through his experience. "In time this knowledge becomes a part of the artist himself, and constitutes the constant norm which imposes itself on the contingent which is its field. In imposing itself it relies on the immediate apprehension of individual concrete reality."[38]

The techne which Nature employed was inherent in the logos. "This is the overall structure which is achieved gradually through the development of the subordinate structures. The reason which guided the world was also the plan of the world, the plan which shaped the world in accordance with its innate techne. And just

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[37]Watson, STK, p. 1.

[38]Ibid., p. 3.

as it was the plan on which the world was built so it was the plan which could be expressed. Because men share in reason they can perceive the plan and express it for themselves. Speech is the indication of shared intelligence."[39]

Man is therefore the highest creature. In sharing techne he can build a parallel and consistent universe of meaning, a knowledge which yields its own inherent value, viz., the good is the natural perfection of a rational being qua rational being.

The relationship of Nature to man therefore was not one of law to subject. Stoic critics have perenially vexed themselves over the Old Stoa's failure to establish an opposition between universal law and individual responsibility. Natural order did not conflict with the order of individuals. Man was not a slave to the macro-destiny. If this natural order (fate) can be thought of as law at all, then it must be viewed as individual law, that is, identical with choice. In other words, the individual worked out his own destiny even though it was, so to speak, predestined. He predestined it himself.[40]

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[39] Ibid., p. 5.

[40] "Total destiny need be thought of no more than the sum of all destinies, and neither the whole nor any part influences any other part in the sense of changing its destiny, because nothing can make anything else other than what it is or is destined to be. So conceived, matter is thought of as a seed-principle. It is described as "spermatic logos". Logos here has reference to no abstract or intellectual factor. It is simply the serial orderliness which in the form of destiny lies hidden in the heart of all

The failure to acquiesce a universal law structure was consistent with and grounded in a particular theory of causation. The latter ties together a number of theories treated earlier in this chapter:

> Instead of recognizing the flux form in matter, the Stoics felt constrained to say that a plurality of individuals (idios poia) can exist in the same piece of matter.... (this) can be best understood in the light of such doctrines as that of the 'latency of causes,' or their use of 'withdrawal,' where a given state of matter ceases to be actual....For the Stoics the effect is not subsequent to the cause but coincident with it....The effect is, one might say, 'what a thing is.' Obviously then, it is not surprizing that one does not hear of causal laws in Stoicism, for causal laws are abstract principles of form. The 'latency of causes', then means their ultimate unpredictable, irreducible, hidden character. Nothing really changes anything else. All natural process is the working out of the inner, hidden nature of things. Since the material cosmos is a unit, ultimately all process is a unique thing.... The totality of all future actualizations of individuals is from the beginning wrapt up in primal fire. This, in the last analysis, is the meaning of the doctrine that a plurality of <u>idios poia</u> coexist. As one <u>idios poion</u> passes away, it is not destroyed; it merely 'withdraws' into the inner destiny which lies at the heart of every piece of matter, ready to be reactualized again and again in the unending series of cosmic cycles."[41]

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[41] <u>Ibid</u>., p. 280.

The larger concerns of this paper are precisely addressed by the question whether logos was principally rational--meaning logically coherent--or if it signified order and design per se, i.e., not unlogical, but a-logical. In Pondering the meaning of logos we once again face an ambiguity which stems from the monist tendency to abliterate distinctions, especially modal differentiations. A clear-cut answer seems impossible. On the other hand Natural orderliness (fate) appears to involve much more than logical necessity by controlling existential possibility and actuality; furthermore, human orderliness (logical necessity) appears "slightly" dependent upon the former rather than a varient form because as we shall see in part two, thinking is rooted in physical functioning. On the other hand logos is physical functioning of a particular configuration; understood this way, the most refined formation of the One is expressed by logical orderliness.

To illustrate the ambiguity from a slightly different angle, it also remains unclear whether one can speak of both a physical and a logical cause and effect, or if one is more correct to refer to cause and effect from some point of view. Whatever case is most proper, it remains that cause and effect were important girders for theory. For example, Theor

would have been impossible if cause and effect relationships were not repeatable. Similarly the Key analytic "if..., then...." formula was grounded in the notion that a cause can never produce different effects. Everytime A is restored, B must follow.[42]

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[42]Margaret E. Reesor, "Fate and Possibility in Early Stoic Philosophy," Phoenix, 19:285-297, 1965.

(There is a)..."close correspondence between Possibility and Fate in Stoic Physics and the possible and the necessary in Stoic Logic. In Physics possibility is found in the principal cause (e.g., breakable), which was a quality inseparable from its substratum (e.g., gem), and the cause of a predicate (e.g., is broken) which may or may not be realized; and a possible event is one in which the predicate is derived from the principal cause but which may or may not be realized (e.g., The gem is broken.) In Logic a proposition in which the predicate (e.g., is broken) follows from the principal cause (e.g., breakable) is possible whether it will be realized or not (e.g., The gem is broken).

In Physics the word "fate" is used to describe both the relationship of the principal cause to its substratum, and the chain or series of imitiating causes which might cause the predicate derived from the principal cause to be realized or which might prevent it from being realized. All actual events are according to fate because they have an initiating cause. In Logic a proposition such as "Virtue benefits" is necessary because the predicate states the principal cause of the subject, and a true proposition about the past is necessary because it is prevented from being false by external circumstances, the initiating causes of Chrysippus' Physics. A true proposition in the future could not be necessary."

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"Possibility is inherent in Stoic Logos, a power and a cause, immanent in all nature...which cannot be destroyed apart from the destruction of the substratum

in which it inheres. The Logos was the Stoic God, and the intelligence of the wise men. A man had the power of choice and through the exercise of decision remained free. A true oracle, which could never have the force of necessity, only foretold what the man by his own free will would help to bring to pass. Necessity was the environment in which man was placed; the circumstances over which he had no control." Margaret Reesor, "Fate and Possibility in Early Stoic Philosophy," PX, 190, 1965, p. 296.

D. Oikeiosis

> The prime impulse of an animal is towards self-preservation, because Nature makes it well-disposed to itself from the outset, as Chrysippus says in the first book of his work On Ends. He says the prime concern (oikeion) of every animal is its constitution and the consciousness of this; for Nature would not have been likely either to make it ill-disposed to itself or to create it and then leave it neither well-or ill-disposed to itself. We have therefore to say that in constituting the animal, Nature made it well-disposed to itself, and it is in this way that it repels what is harmful and takes in everything which is right for it (oikeion).[43]

In man, logos is the technician which takes charge of our natural impulse; man alone can regulate his natural disposition. The regulating is not itself static, but matures with the human being. The nature of the oikeiosis during infancy is exceptionally important for our paper, i.e., the whole question of innate ideas depends upon it:

> Human beings encounter, during infancy, things naturally proper to them; they direct themselves towards these, keep everything which is 'alien' to them out of their way, and in the course of this, by means of a process which the sources refer to as comparison but which is at the same time distinguished from every other kind of mental operation as 'natural', they arrive at the notion of what is truly good. As and when this notion is formed, it is seen to be something more profoundly proper and natural to the subject then anything he has

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[43] LEP, VII, 85; SVF III, 178.

> encountered previously, so much so that the whole range of natural things which led up to it is not merely downgraded to a position of secondary importance but ceases to matter at all. They turn out to be wholly indifferent by comparison with the good and its now overriding claims on his disposition.[44]

Choosing between what is proper and alien to one's nature was present on all levels or modes of the One, perception being the highest articulation of this choice, and within perception, awareness of the good was the epitome of the human disposition. Oikeiosis therefore represents a major bridging of physics and logic. That is, although the perfection of man was the episteme of the wise man, at the same time, this knowledge was rooted in direct acquaintance of the (recognized) good. Oikeiosis is therefore a bio-physical basis for self-consciousness.[45]

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[44] S.G. Pembroke, "Oikeiosis," PIS p. 117-8. See SVF II 87 and III 72, 188.

[45] "The principle itself, moreover, was closely coherent with the Stoic view of less complex phenomena, and in conclusion, oikeiosis can be seen as corresponding to a more elementary force at work in inorganic matter. Recent controversy on this subject has tended to isolate Stoic ethics from other aspects of their thinking, but Nature is not a specifically ethical term, and at the lowest level of organization to be found in the physical world, the identity of inanimate objects was not, as it had been for Plato, guarenteed once and for all by their participation in a changeless form, but actively maintained by the continual process of 'tensional movement' that took place in the pneuma, 'constantly going forth and returning' or, as another writer puts it (philo), 'turning back on itself.' Oikeiosis to oneself is the same process raised to the level of consciousness and alone capable of raising consciousness to the higher level of moral wisdom. Ibid., p. 141.

E. Conclusion

Outlined above are the main tenets of Stoic physics which provide the ontological underpinnings for Stoic epistemology. Taken separately each one of these key concepts appears to isolate the central thesis of Stoic cosmology. Indeed, all of them do: theos, pneuma, creative fire, fate, logos, and oikeiosis are merely different explanations of cosmic coherence,i.e., each one stresses a slightly different approach to it. Although the Stoics have never been famous for their physics, it was a vital genera in their philosophy, it provided a fundamental ground for knowledge, and this cannot be slighted. Initially, Stoic physics was plagued by combining certain pre-Socratic concepts with Aristotelian problematics. Later, the versatile notion of a cosmic pneuma was developed. In establishing a unified field theory the stage was set for advancing the science of logic with a minimum of supporting speculation. All of these major developements were initiated by Chrysippus.

In short, the message is this, the world behaves according to an order the human mind can fathom. It was therefore fair, it seemed, to think of this world as "rational." That is, the World and man stood to one another as macrocosim and microcosim. Just as man experienced order, reason, law, and structure, because he was a "rational being," a being which was but a part of a larger whole, so it was concluded that the world was ordered, that there was a world reason.

II. STOIC LOGIC

A. Logic as a Science.

Stoic logic, as we will recall from the Introduction, was broken down into three genera, rhetoric, dialectic, and criteriology (theory of knowledge). Rhetoric was the special study of speaking well on matters set forth by plain narrative.[1] The science of dialectic tested the truth and falsity or neutrality of statements, and distinguished what was merely plausible from what was ambiguously expressed, for without these services one could not methodically put questions and give answers.[2] The third genera was incorporated into logic inasmuch as it was viewed as the standard by which one decided if something really existed or not. Foundational to criteriology was the doctrines of presentation (phantasia) and sensation (eisthesis).[3] With such a wide range of topics included under its jurisdiction, e.g., inquiries into grammar and linguistics, signification theorems, epistemological investigations, and many other subject matters which resemble the business

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[1] LEP, VII, 40.

[2] LEP, VII, 47.

[3] LEP, VII, 49.

affairs of modern logic,[4] Stoic logic could hardly be conceived as a mere tool as in the Peripatetic tradition. Precisely because of the epistemological questions, Stoic logic was placed on a par with physics and ethics.

According to Martha Kneale[5], the Stoic-Megarian school made three outstanding contributions to logic by (1) inventing some important paradoxes; (2) re-examining modal notions; and (3) initiating discussions of the conditional statement. In developing these 'dialectical' matters, Stoic logic differed from Aristotelian logic on two fundamental points. First, Stoic logic was a science of propositions, not of terms; secondly, rather than emphasizing logically true forms, the Stoics built up a calculus of inference schema derived from five prime axioms. Significantly, the latter were indemonstrable;

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[4]Among the fragments we can discern these telling titles of logical treatises:

On Propositional forms--On Negative Propositions; On the Subject--what are false Propositions; On Imperatives.

On logical language -- Sentences opposed to Ordinary Usage; On Ambiguity in a Conditional Proposition; An Intorduction to the Study of Ambiguity.

On arguments and moods -- Introduction to the Liar Argument; On the Analysis of Syllogisms; Reply to those who think that a Proposition can be Both True and False.

[5]DL, p. 114.

they were accepted as valid without proof. However, with all things considered, dialectic was for Chrysippus what demonstrative reasoning was for Aristotle since dialectical arguments could be used to demonstrate the connections between things in nature.

In view of our particular concerns several characteristics of Stoic logic need expanded treatment, i.e., the difference between a propositional logic and a term logic, the five inference schemata, the notions of sign and signified, and logical modality figures. Thus, part A. continues according to the order given.

Benson Mates has made available one of the few explicit accounts describing the difference between a propositional and a term logic:

> (By propositional logic) we mean that the values of the variables appearing in Stoic formulae are propositions (the substituends being sentences), while the values of Aristotelian variables are non-empty classes (the corresponding terms being the substituends). The Stoics used ordinal numbers as variables, whereas Aristotle and his followers used letters.[6] The so-called "first undemonstrated" inference-schema of the Stoics ran as follows:
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> If the first, then the second.
> The first.
> Therefore, the second.[7]

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[6]See Apuleius, In De Interp., ed. Oud., 279 and Galen, Inst. Log., 15. (References from Mates.)

[7]SL, p. 2, n.4. See also J. Łukasiewicz, Aristotle's Syllogistic from the Standpoint of Modern Formal Logic, Oxford, 1951, p. 48.

A typical example of this schema is as follows:

> If it is day, then it is light.
> It is day.
> Therefore, it is light.

We have substituted "It is day" for "the first" and "it is light" for "the second." The argument cannot be obtained however if we substitute terms for the ordinal numbers. Ammonius was among the first who made such an attempt:[8]

> If man, then animal.
> But the first.
> Therefore, the second.

As Mates points out, this inference must at best be interpreted to mean something like:

> For every 'x', if 'x' is a man, then 'x' is an animal.
> But 'a' is a man.
> Therefore, 'a' is an animal.

However, this form is not comparable to the Stoic paradigm, Mates explains. Both Diogenes Laertius and Sextus Empiricus provide proper examples:

> If Plato is living, then Plato is breathing.
> The first.
> Therefore the second.[9]

> If sweat flows through the surface, then the skin has intelligible pores.
> The first.
> Therefore, the second.[10]

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[8] Commentaruim in Aristotelis Analyticorum Priorum Librum I., Ed., Maximilian Wallies; Berlin, Reimer, 1899, p. 68, line 25.

[9] LEP, VII, 77.

[10] AM, VIII, 306.

This type of inferring is contrasted by Aristotle's syllogism: If A belongs to all B, and C to all A, then C belongs to all B.[11] An example of this form would be:

> If animal belongs to all men, and substance to all animals,
> then substance belongs to all men.

Obviously, it would be ridiculous to substitute sentences for the terms in this scheme, just as the reverse was true a moment ago. However, the attempt to reduce Stoic logic to Aristotelian forms was made time and again in the history of logic. The futility of such ventures netted a prejudiced attitude typified by Prantl and Zeller who concluded that the Stoics were nothing more than a gang of illiterates. It has only been in this century, following the work of J. Lukasiewicz, that the unscholarly attitudes of Prantl and Zeller was revealed for what it was. Lukasiewicz picked up on the hints dropped by C.S. Pierce and showed that without a doubt, the Stoics had developed a completely different quadrant of logic, approaching, and even surpassing, the current level of insight on a number of problems in modern post-Aristotelian logic.

To be altogether fair to Aristotle, certainly he was not ignorant of the conditional propositon. However, his school generally stated these propositions as laws. As such, his conditionals did not play a big

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[11] Prior Analytics, 61b 34.

role in "logical theory." Inferences which derive from conditionals belong to "dialectic"; they are not demonstrated, but are accepted by agreement as true. The remaining four schemata were:

If the first, then the second.
Not the second.
Therefore, not the first.

Not both the first and the second.
The first.
Therefore, not the second.

Either the first or the second.
The first.
Therefore, not the second.

Either the first or the second.
Not the first.
Therefore, the second.

Using these basic formulae the Stoics were able to analyse very complex arguments with the purpose in mind of testing their truth.[12] Even the Stoic principle of valid inference itself was expressed as a conditional, viz., 'If, if the first then the second, and the first; then the second.'

Another important feature of Stoic logic was their theory of signification. Whereas Aristotle suggested that thoughts are isomorphic with real entities, but the expression of our thoughts is not isomorphic with the thought--since the same thought can be articulated in different languages, and within one language different phrases--the Stoics believed linguistic signs to be isomorphic with mental signs, the latter only being <u>about</u> the external object--since formal identity does not exist in the objective world. Meaning, for the

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[12]Martha Kneale describes this calculus in detail, formulating auxillary theorems from the five principal forms. DL, p. 158-175.

Stoics, is non-corporeal, thus making dialectic a science of the non-corporeal.

> The Stoics (assert) that there are three things joined together, the thing signified, the sign, and the existing object. The sign is the sound, for example the word "Dion." The thing signified is the matter itself which is indicated by the sound and which we grasp as it co-exists with our thought,[13] but which the barbarians, although they hear the sound, do not understand. And the existing object is the external thing, as Dion himself. Of these three, two are corporeal, the sound and the existing object, and one is incorporeal, the matter signified and the meaning, and it is this that is true or false. Not every meaning, however, is true or false, for some are incomplete and others are complete. An illustration of the complete is what they call a proposition which indeed they define in the statement: a proposition is that which is either true or false.[14]

The incorporeality of meaning clearly marks the shift to Subjectivism. Aristotle's primary formal entities were thoughts and the concrete external objects they signified,[15] but the Stoics preferred to relegate

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[13]Thought was largely conceived as internal speech, certainly logical thinking was nothing more than this. Plato was himself a proponent of this view.

[14]AM, VIII, 11; SVF II 166; trans. by J. Saunders, GRPA, p. 76.

[15]This contrast, that thoughts adequately (if not perfectly) reflect things, has been a corner-stone theme in Western philosophy, especially in the Middle Ages. Essentially, it is a modified Platonism.

meaning to the relative mental facsimile of the object. This 'mentalism' or lekta was the true predicate of signification. Ironically, as we shall see shortly, the Stoic view was more empirical than was Aristotle's Objectivism.

The key figures in modal logic are possible, impossible, necessary and non-necessary On the basis of the accounts given by Boethius and Cicero, these figures were variously defined by the Stoics in agreement with either one of three dialecticions, Diodorus Cronos, Philo, or Chrysippus. Chrysippus' position was as follows:

The possible--is true provided the external circumstances do not prevent it. For example, 'Diocles is alive.'

The impossible--does not admit of being true. For example, 'The earth is flying.'

The necessary--what is true and does not admit of being false or, admitting of being false, is prevented from being false by external circumstances. For example, 'Virtue is beneficial.'

The non-necessary--is that which is true and may be false if external circumstances do not prevent it. For example 'Dion is walking.'[16]

Boethuis summerizes the first three as follows:

> The Stoics have declared that to be possible which is susceptible of true affirmation

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[16]LEP, VII, 75.

> when things which, although they are external, happen together with it do not in any way prevent it. The impossible is that which never admits of any truth, since other things, apart from its own outcome, prevent it. The necessary is that which when it is true does not in any way admit of false affirmation.[17]

The significance of Stoic modal logic was yet another casualty of neo-Aristotelian exegesis. Aristotle himself could not appreciate the purely formal-logical nature of the Stoic modalities. In Aristotle's view modal concepts were (meta-) physical concepts. They were directly related to the dual powers of activity and passivity. Thus, he could not accept the Stoic view of possibility which he interpreted to be saying: 'it is only possible to be a builder, when in fact one is not building;' the implication being, that if one isnot building, it is not possible for him to be a builder.[18] This view was paramount to denying potentiality and with it the notion of change, because there is only a power in action. As Martha Kneale points out, Aristotle would have to assume that the figures 'necessary' and 'possible' would be irrelevent for Stoic theory on the basis of this view. However, the Megarion-Stoics did not deny change and they expended much energy in developing modality theory.

The key to understanding Stoic modality is to

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[17] De Fato, 12-20.

[18] Metaphysics, theta, 3, 1046 b 29.

recognize it as a purely formal-logical endeavor; the modalities were "propositional auxillaries."[19] As logical forms they were only concerned with functions of propositions. Whereas Aristotelian modalities were grounded in Objective Universally Valid Law, the Stoic modalities were based on logos, the common cosmic binding force; a ground which (also) was present in man.

An important connection exists between modality theory and the conditional proposition. Because it is possible to prove or deny anything from a strictly formal-logical point of view, one must devise a means to safeguard the universal acceptance of a claim. It lies in the nature of the conditional, that logically it is impossible not to accept it. In other words, one can deny the claim of any proposition on the basis of anything but logical grounds. But the "if" qualifier takes into account all of these objections, they are therefore logically irrelevent. Thus, formalism goes hand-in-hand with the conditional proposition.

To close point A, I suggest the following as possible hypotheses that one might wish to pursue further inveiw of our topic: (1) There is a close relationship

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[19]On the contrary Aristotle called 'that which is the condition for the existence of a thing' necessary, and called that 'possible', which existed, but not necessarily so. For example, for a man to exist it is necessary that he eat, but that a man is seated is possible, but not necessary. Metaphysics, delta, 1015a 20-25 and lambda 1019b 26ff.

between the Stoic logicizing of "modal theory" and the Western notion that the epitome of order and coherence is of a rational-logical character and (2) "modality theory" has usually implied ontological consequences.

B. Concept Formation

The Stoics did not deny truth nor did they seek after it, on the contrary, it was their assumption that they had found truth--things could be known and they, in fact, did know them. The chief instanciation of knowing things was the Wise Man. "The Wise man never opines, never regrets, never is mistaken, never changes his mind....[20] (he) hoes not conceive anything weakly, but rather surely and certainly; therefore also he does not opine...(the Stoics) believe that a rational person... neither repents nor is fickle, changeable, or perplexed."[21]

This stark claim was vigorously challenged by the leaders of the Academy, Arcesilous aus Carneades, who denied the possibility of certainty in knowledge. From their point of view, the Stoics in fact, did not know what they claimed they did know. Faced with the voice of scepticism, the Stoics were forced to articulate the criterion by which they could make their assertion.

> Arcesilaus perhaps asked Zeno what would happen if the Wise Man could neither perceive anything nor have an opinion. I believe he replied that the Wise Man could never entertain an opinion because there was something which could be perceived. What is it then? Perceptions, no doubt. What sort of perception? Then he defined it as follows: It is an imitation, a seal, an impression from what exists just as it exists. Then it was asked further whether such a true perception was of the same type as a false perception. Here Zeno clearly saw that there was no perception which could

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[20]SVF I, 54a; Cicero, Acad. pr. II 113; tranls., GRPA, p. 61.

[21]SVF I, 54e and f; Stobaeus, Ecl. II 7. 11m, p. 112, 1 W. and p. 113, 5, transl., GRPS, p. 62.

> be perceived of there could be one arising from that which exists, essentially similar to one arising from that which does not exist...[22]

Apparently the criterion was linked to a particular kind of sense perception, i.e., one which is received from an existing object. But how can this be? How can certainty, which entails stability, be derived from the world of flux? The Stoic response to this question and others, will be given shortly, but first let us be sure we understand generally what the nature of a criterion for certainty would have to be. Cicero reports:

> ....there must be set down a principle which wisdom, when it begins to do anything, may follow, and this principle must be consistent with nature. For otherwise, natural disposition, by which we are compelled to act and by which we seek a perception, cannot be set in motion. But that which initiates this motion must first be seen and must be believed in, which cannot take place if that which is seen cannot be distinguished from a false one. But how can the mind be moved to natural dispostion, if what is seen is not perceived by the mind to be consistent with or alien to nature?
>
> Furthermore, if it does not occur to the mind what its function is, it will never do anything at all, never be impelled toward anything, never be set in motion. But if it is at some time to do anything then it is necessary that what occurs seems to it to be true.[23]

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[22] SVF I, 596; Cicero, Acad pr. II 77, transl., GRPA, p. 62. In this way the question 'How do we know (that it exists)?' became a part of logic.

[23] SVF II 116; Cicero, Acad. Pr. II 24; transl. GRPA, p. 71-72.

Acts of knowledge can only be certain inasmuch as they are naturally inclined. If sensation is going to be the criterion, then it must be that sensation which is according to oikeiosis. A further problem to be discussed is the source of certainty, i.e., does it arise from the naturally disposed perception or from the knower's recognition of this status?

In sum, the argument between the Academy and the Old Stoa was reduced to this: The Stoics held forth, if you say there is no criteria for truth, then either, (1) you must argue without one (and you will therefore not be trusted), or (2) you will have one anyway (and therefore be self-refuted). The sceptics held forth, if you say there is a criterion, then either (1) it must be judged by a superior criterion (and therefore an infinite regress is initiated), or (2) it is its own criterion (which is absurd). However, the Stoics replied, the second alternative is not absurd and this is indeed our position. The criterion is analogous to the straight line, i.e., it is capable of testing both itself and other lines. Or, to use another example, the self-sufficient criterion is like a scale which measures the equality of itself (when the two sides are empty) as well as other things. Or again, it is likened to light which reveals itself as well as other things.[24]

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[24]SVF II 118; Sextus Empiricus, AM, VII, 140; transl. GRPA, p. 72.

Before any theory of sense perception can be given, the nature of the soul must be made clear. Remembering the monism of Chapter One achieved through krasis, it should be understood that soul was not viewed as a part of man in contrast to some other part called body. Man was fully soul and fully body. Soul was body. Sensation belonged to soul just as much as intellection belonged to body. Indeed intellection and sensation will be seen to relate to one another in much the same way as the two arche in Stoic physics. Man was a highly unified tensional field which contained a stable pattern of motion.

The "soul" is a unity, i.e., it has no divisions or hierarchy of levels, but it does have several parts and corresponding functions. The Soul consists of eight parts with seven of the parts--the five sense organs, the voice, and the reproductive organs--being functions of the eighth, the heart or ruling part of soul (hegemonikon). The ruling part of soul is connected to all the other parts by ducts. The whole soul-system is pneuma in nature. Thus, whatever affects any part of the soul (Man) affects all of the soul. The influence is spread or communicated like the ripples which move outward from the point where a Stone is dropped into a pool, however the influence is spherical rather than merely circular.

At this time I should like to interject a rather complex model, one which I feel represents the Stoic theory of concept formation. The model is primarily based on a synthesis of fragments from Diogenes Laertius, (LEP, VII, 51-54), Aetius (SVF II 83),[25] and Sextus Empiricus (SVF II 69, 90, 96), but has been sustained by many other relevent fragments.

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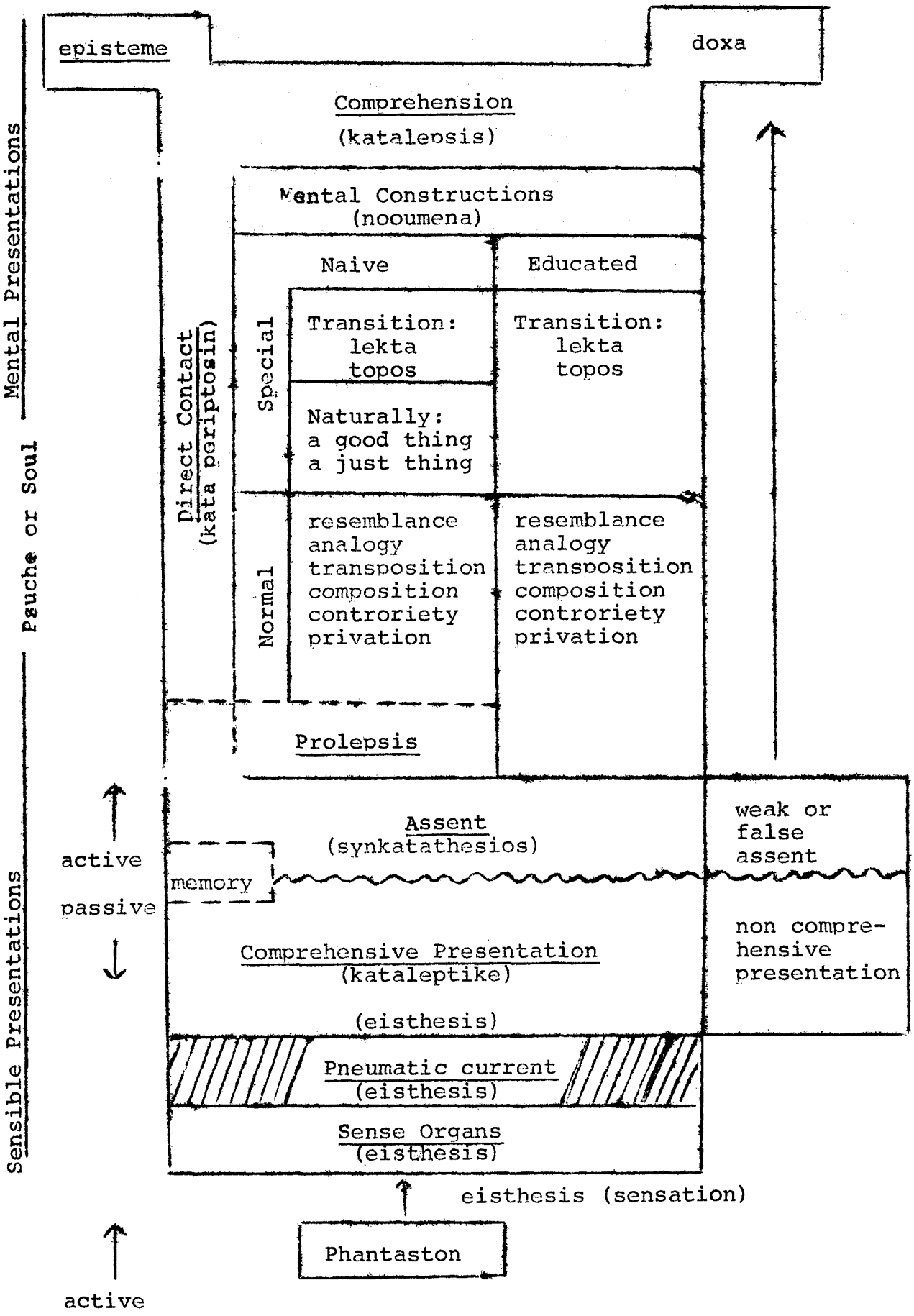
[25]Plac. IV 11; transl. GRPA, p. 68.

Criteriology of Stoic Logic



Essentially, the model expresses the relationship between a man (psuche) and an external object (phantaston) as sensation (eisthesis). In this relationship the object is the active agent and man is passive. However, sensation alone does not yield knowledge. Although it is the ground of knowledge, it is only the first step toward knowledge, i.e., the bridge uniting man with his environment. To achieve knowledge, a second active/passive relationship must be devised, this one totally within man himself. In other words, once the object has affected the senses, the road to knowledge is strictly the business of thesoul, soul, of course, being both active and passive.[26]

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[26]The 'double-agent' nature of soul illustrates the most fundamental distinction the Stoics made as Monists. Whatever took place prior to assent was done 'to the Soul,' i.e., the soul was passive. That which followed after assent was done 'by the soul,' i.e., the soul was active. However, the model should not be used to reinforce the temptation to envisionlevels of soul. The various boxes signify a progression only, not a hierarchy. What appear as levels really telescope into each other, they have been presented here as an extended accordian in order that we could more easily identify soul's varius functions. Of course one can still argue that in actual fact, the Stoics have falsely amalgamated a number of functional modalities together, most obviously, the physical, kinetic, biotic, psychic, and analytic.

Before we run ahead of ourselves any further, let us briefly analyse just that portion of the diagram which lies below assent. Technically, the relata of sensation can be described as (a) a now present active object, and (b) the passive external sense organs. So long as the object remains sensibly present and the sensing organs are properly functioning, the sensations which each organ carries to the hegemonikon are true and never false.[27] Thus, the hegemonikon or data centre, is presented with a complete and true report of the external object, since each sense organ picks up a particular quality of the object and passes it to the heart via the pneumatic ducts. This conglomerate is called a phantasia; it is the intra-human object of knowledge, having faithfully replaced the external object. That is, in knowing the phantasia, one also knows its author.[28] The construction of phantasia was called a process of imprinting or change (of pnuema).[29]

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[27]That sensations are infallible is also upheld in Plato's Theaetetus, 157E-160E.

[28]Remember, the Stoics were strict individualists. No two objects were exactly alike, thus it was impossible for two objects to cause the same phantasia.

[29]This corresponds to the nature of what is passive; as we will remember, the passive arche was the principle of undergoing action, i.e., the principle of change.

Zeno identified phantasia as "an impression" on the soul, however, what he precisely meant by this remained vague. Cleanthes suggested that the theory of impression was similiar to the hollows and projections made on wax by a signet ring.[30] Chrysippus considered this view absurd.

> For first, he said, if the mind should simultaneously present a triangle and quadrangle, this view would require the same body, i.e., the mind at the same time to have in itself the differing shapes of a triangle and quadrangle, or even a circle also, which is absurd. And if we should have a great many presentations together, the soul also would have a multitude of shapes, which is worse than the previous case. But he conjectured that Zeno had used the word impression in the sense of qualitative change, so that the definition should be: "Presentation is a qualitative change of the soul," since it is no longer absurd that the same body at the same time, when we have many presentations, should admit a multitude a qualitative changes. For just as the air, when many people are talking at once, admits in one place innumerable differences and contains many vibrations and qualitative changes, so also the ruling part of the soul somewhat analogously will suffer a variety of presentations.[31]

Chrysippus thus sustained Zeno again with yet another ingenious innovation. Cleanthes' view of soul as a single sided exposed surface could only receive one impression at a time, and even at that, it would blot out or confuse earlier impressions. Chrysippus

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[30] See also Theaetetus, 194 b.f.

[31] SVF II 53, Sextus Empiricus M., VII, 227; transl. GRPA, . 64

maintained a view which not only allowed for multiple simultaneous presentations, but the soul retained these while taking on additional presentations. Thus, the "impression" was not a scooping out of a plane surface, but it was a modification or alteration of the soul. It should also be added that Chrysippus' soul was no less corporeal than Cleanthes' soul.

In sum, the phantasia or presentation is something like a mediary, that is, it reflects in itself the object which caused it. At the same time, the phantasia is not an addition to psuche, but is 'psuche modified.'[32]

The Stoics distinguished several classes of phantasia. Some were directly derived from the senses, i.e., conveyed through the sense organs in the manner described. Others were not, being received through the mind itself, e.g., incorporeals and other "mental" presentations.[33] Among those presentations received from the senses, some were from real objects (comprehensive phantasia) while others were from objects which only appeared to be real (non-comprehensive). Other, non-inclusive distinctions were also possible. For example, phantasia were sometimes logical sometimes non-

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[32]The entire soul system is altered with each phantasia; an example of comprehensive influence.

[33]In the model these phantasia are arranged in the areas above assent.

logical. The former belong to men and were called noesis, the latter have no special name but are attributed to the animals. There are also skilled phantasia and non-skilled, as for example, the difference of presentation which results when an artist and a layman view a painting.[34]

Having such a variety, it becomes evident that not all phantasia are always true, as is the case with sensation proper. Apart from the margin of error which existed between the sense organs and the hegemonikon, phantasia can be initiated under delusion.[35] This brings us back to the question raised by Arcesilaus, how is it possible to distinguish between presentations which truely reflect an external present object and those

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[34]This particular contrast would seem to support the suspicion that the phantasia is not formed without soul activity. This problem was particularly accute with respect to the comprehensive phantasia, for the Stoic position stood upon the assumption that such a presentation was infallible, de facto. The subjective element, as we shall see, was merely a decision-making, that is, whether to accept this infallible presentation as truely representing a real object, or a false one. The actual construction of the phantasia was not part of the subjective task.

[35]Although, the mind also initiates phantasia, the latter originally came to mind via the senses. The mental phantasia therefore depend upon previous sensation and memory. Even the concept of centaur depended upon sensible phantasia, i.e., of a horse and a man. Thus, mental phantasia are not co-extensive with false object phantasia.

which arise from false objects (leading to doxa or opinion)? To answer this question, one must consider a number of Stoic concepts, viz., comprehensive phantasia, assent, and comprehension.[36]

The question can be rephrased to ask 'when should the ruling of part of soul assent to a presentation, i.e., recognize it as valid?[37] Of course, the question which

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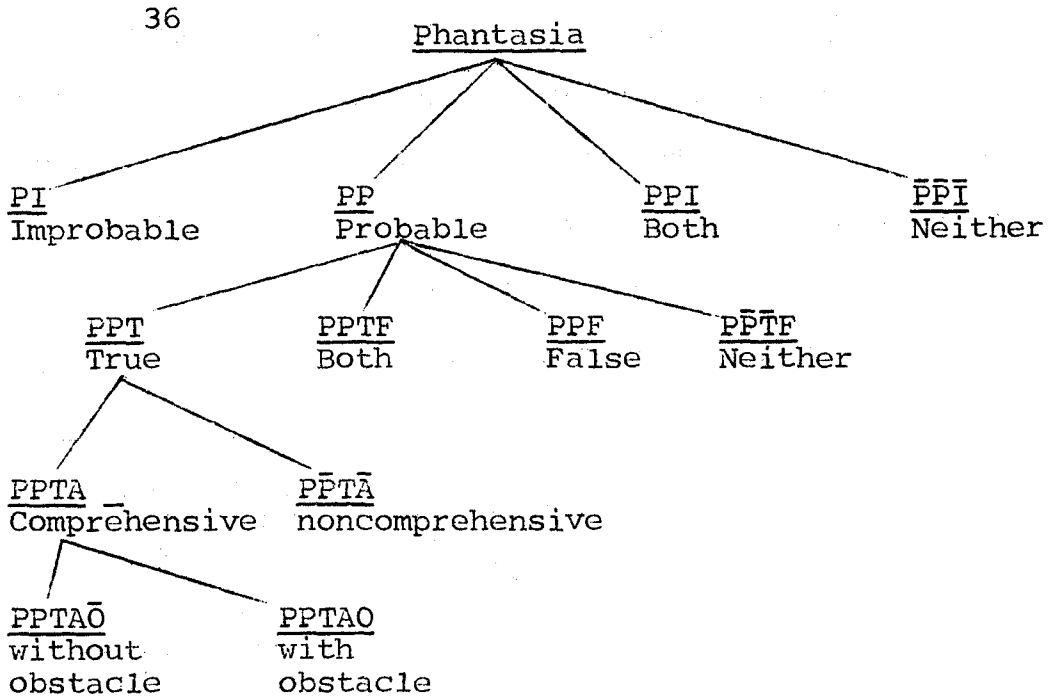
[36]



The above table comes from Andriopoulos, STKP, p. 317. Because the model is specifically focused on the comprehensive phantasia--being the primary cirterion of truth and the ground of mentalisms--we do not see how it fits into a schema of logical functionality.

[37]In the process of sensation, man is passive. Up to the point of the ruling soul's deliberation whether to grant assent or not, the phantasia has something of an ad hoc status. There is no identification. Through assent all that is at stake is deciding if the soul has been presented with a true or false phantasia.

is really at stake is how do you know for sure? All of these questions are answered by the criterion for truth. Although several different criteria are to found in the fragments, the most referred to is the comprehensive phantasia. The phantasia kataleptike is the basis upon which we can say "I know for sure," "I give 'assent'," or "this phantasia is truely from a real external object." The comprehensive phantasia is always true, by its very nature. That is, it reveals itself[38] to the ruling soul in such a manner that the soul knows it could not have been initiated by a false object.[39]

Assent activates a direct channel to knowledge (episteme).[40] Zeno illustrated this by a gesture:

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[38]The comprehensive phantasia was said to operate like light, i.e., revealing itself as well as the object. Thus, the soul is integrally aware of its undergoing modification. This consciousness is essential for rationality. The Stoics tried to support this analogy on the basis of etemology, i.e., phantasia and phos (light) were supposedly from the same root meaning. Such contrived etomologies were often employed by the Stoics.

[39]The next objection raised by the sceptics is that assent was determined. Indeed "Their view of apprehensions, placed them in a somewhat ambiguous position, since it involved the existence of impressions such that, although assent to them is still theoretically in our power, they nevertheless grip us in such a way that assent cannot be with held." Graeser, PATS, p. 38.

[40]This is true of the comprehensive phantasia only, for the soul can decide wrongly, and this too is assent. The latter assent however leads to opinion.

> For when he showed his hand with the fingers extended, he would say, perception is like this. Then when he closed his fingers a little, he would say, assent is like this. Then when he had completely closed his hand and made a fist, he would say that that was comprehension....When, finally, he brought his left hand against his right fist and grasped it tightly, he would say that such was knowledge and no one but the Wise Man was capable of it.[41]

Thus, Knowledge and opinion were contrasted:

> The Stoics, i.e., Zeno and Cleanthes say that three things are joined together: knowledge, opinion, and comprehension which stands between them. Knowledge is comprehension which is sure, certain and unchangeable by argument, whereas opinion is weak and false assent. Comprehension which stands between them is assent to a comprehensive presentation. Now, a comprehensive presentation, according to them, is one that is true in such a way that it cannot become false. They say also that knowledge occurs only in wise men, opinion occurs only in foolish minds, but comprehension is common to both and is the criterion of truth.[42]

After the comprehensive phantasia has been given assent it was called comprehension, i.e., it now had the status similiar to things grasped by the hands. So grasped, it could not be removed, that is, reason could not destroy it. Should it prove to be destructible,

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[41]SVF I66; Zeno quoted by Cicero; Acad-pr.II 144; transl., GRPA, p. 68. In another place assent is likened to a cylinder, once a presentation gets it r lling it moves or under its own power.

[42]SVF II 90; Se tus Empiricus, VII, 151; transl., GRPA, p. 69.

then it was ignorance or opinion all the while. Comprehension is something of a nuetral feature. It is neither right nor wrong; but believed. In one case, what is believed is called knowledge, in the other, opinion.

Thus far we have described the direct conduit of knowledge. However, the Stoic theory of knowledge is much more complex after assent;[43] Knowledge also pertains to mental presentations. The relevent questions to be answered now are, how do concepts arise?, and secondly how are they grounded into the empirical pipeline?

Each phantasia leaves a trace in the mind which can be recalled.[44] After many presentations of the same object and/or similiar objects, the mind recognizes a general permanent modification, i.e., a permanent pattern of motion.[45] This permanent pattern of motion

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[43]Assent is a key concept since it functions as the pivot from sensible to mental: "Without assent, there can be neither memory, concepts, nor acts and most important of all, though some things may be in our power, nothing is in the power of the man who never assents to anything. Where then will virtue be, if nothing is in our power?" SVF II, 115; Cicero, Acad., pr. II 37; transl., GRPA, p. 71.

[44]For this reason, memory is a corporeal figure. A notion is a remembered phantasia.

[45]This pattern, as it becomes more prominent, also functions as a criteria for future assent. That is, whenever a presentation reaches the hegemonikon, which has certain agreeable features, the conforming pattern is activated and sanctions the assent.

is a "common notion," that is, "a family" of presentations.

We have now arrived at the gulf. Though the Stoics have narrowed the gap between sensation and conception to the point of ambiguity, making the stepover appear fluid, the two sides in fact never touch. Chrysippus cannot avoid the 'leap' to the notion of generality forever. Indeed, it is not clear whether any mental phantasia was ever believed to be of a real individual body.[46]

> The notions of Zeno, they say, are neither things nor qualities, but are images of the soul, i.e., fictitious objects--like things and like qualities. The ancients called them ideas. For the ideas belong among those things subsumed under the notions, as men and horses, or to speak more generally of all living things and of the other things, of which they say there are ideas. But the Stoic philosophers say that ideas are unreal, and that we share in notions, but that we only chance upon their modifications which they call common nouns.[47]

Mental phantasia thus had a quasi-existence. It was an image of sensible phantasia; i.e., in just the same way that a sensible phantasia was aroused on the sense organs when the color white was perceived, the active soul was affected when it thought of whiteness. In other words, the mind received within it self an image of what it thought.

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[46]"A family" might be a singular, but it was not a real body; Chrysippus was therefore a nominalist.

[47]SVF I, 65a; Stobaeus, Ecl. I p. 136, 21 W; transl., GRPA, p. 67.

As the model illustrates, general notions were obtained in a variety of ways:

> By incidence or direct contact have come our notions of sensible things; by resemblance notions whose origin is something before us, as the notion of Socrates which we get from his bust; while under notions derived from analogy come those which we get (1) by way of enlargement, like that of Tityos or the Cyclops, or (2) by way of diminution, like that of the Pygmy. And thus, too, the centre of the earth was originally conceived on the analogy of smaller spheres. Of notions obtained by transposition creatures with eyes on the chest would be an instance, while the centaur exemplifies those reached by composition, and death those due to contrariety. Furthermore, there are notions which imply a sort of transition to the realm of the imperceptible: such are those of space and of the meaning of terms (lekta). The notions of justice and goodness come by nature. Again, privation originates notions; for instance, that of the man without hands.[48]

I have lumped the methods of resemblance, analogy, transposition, composition, contrariety, and privation together in one class since their products are all derived in an unqualified manner. These methods are kinds of mental manipulations of straight-forward sensible phantasia. There are two methods of obtaining general notions which are qualified; I call them special. One group includes the lekta, one of the most controversial

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[48]Diogenes Laertius, LEP, VII, 53.

concepts in Stoic philosophy.[49] The second group is only slightly less famous, the notions called prolepsis.

The notion of prolepsis is in many ways the most important as well as the most difficult to understand element in the Stoic theory of knowledge model. Aetius provides us with one of the most telling fragments:

> The Stoics say: When a man is born, the ruling part of the soul is like a sheet of paper suitable for writing. On this he writes off each single thought....That which comes through the senses is the first thing written down. For those who perceive something, like white, have a memory which comes from it. And when many similar memories have arisen, then we say people have experience, for experience is the manifold of similiar presentations....But of thoughts, some arise naturally in the ways already mentioned, without technical skill, while others come by our teaching and conscious effort.

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[49] Literally, lekton means "sayable". In Stoic philosophy "judgement" is the understood noun that accompanies it; so that lekton means "sayable judgement", i.e., a judgement which can be expressed.

> "This lekton remains only in the intellect, for which reason it must be considered to be invisible, inaudible, and imperceptible. Therefore, it is said by the Stoics to be incorporeal, although in a remarkable way, the soul is held, by these same philosophers, to be material. Lekton is one of four incorporeal entities; Lekton (sayable judgement), kenon (the void), topos (space), and chronos (time); but the lekton is, besides, a mental object founded in reality (ens rationis cum fundamento in re) whereas these other three are not mental objects (entia rationis)." E. Orth, "Stoicorum lekton," Emmerita XXX, p. 59, 1962; trans. Dr. Albert Wolters.

> These latter are called thoughts only (ennoia) but the others are also termed preconceptions (prolepsis). Now reason, because of which we are called rational, is said to have received all its preconceptions by the time a child is seven years old. And a notion is an image of the mind of a rational living being--for when the image strikes a rational soul, then it is called a notion, taking its name from that of mind.... Therefore all those which strike irrational are images only, but those which we or the gods have are both images generally, and notions, specifically...[50]

If we can assume that by "some thoughts arise naturally in the ways already mentioned," Aetius was referring to the several ways of obtaining notions stated by Diogenes Laertuis,[51] then we can conclude that the Stoics were aware of an across-the-board distinction of naive and educated notions. The latter were more sophisticated (abstract) than the former, requiring academic training. Such an interpretation is possible I think with the only difficulty springing from the applicability of prolepsis in the two passages. In the Diogenes passage, naturally derived notions are those such as one gets of the good or just, while for Aetius, all naive notions are proleptic. This ambiguity returns in other passages as well. Trusting that our model is still trustworthy, a further discussion of prolepsis is in order.

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[50] SVF II 83; transl., GRPA, p. 68.

[51] Such an assumption is merited on the sense it makes out of a number of otherwise unclear fragments. Since little evidence is available to prove or disprove its validity, our criterion seems viable.

Two separate debates have arisen in the effort to understand the Stoic notion of prolepsis (preconceptions). One debate concerns the apriori nature of prolepsis, i.e., were the preconceptions in born or not? The question to be answered in the other argument is whether or not the preconceptions were synonomous with common notions of an ethical nature.

With respect to the latter debate, A. Bonhoffer (Epiktet und die Stoa) has championed the traditional view that the preconceptions were restricted to moral notions which all men held in common; e.g. the notion of the good thing, or the just thing. Refuting this theory, F.H. Sandbach ("Ennoia and Prolepsis," CQ 24:44-51, 1920), suggests that the prolepsis need not be limited to ethical notions, but in fact, they signify the first naive conception of anything, whether the notion has come from memory[52] or from one of the several ways concepts are made, e.g. analogy, etc. According to Sandbach, it is not merely a matter of widening the scope of the prolepsis--making preconceptions synonomous with common notion--but, prolepsis is the ground of conceptualizing. Thus, finding Sandbach's arguments more agreeable than Bonhoffer's, it appears that prolepsis grounds mental phantasia in the same way that the comprehensive presentation grounds sensible phantasia. Indeed, there are

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[52]According to Sandback this meaning of prolepsis, i.e., that it was a naive rememberance, was borrowed from Epicurus.

references to the preconceptions as a criterion of Truth.[53]

The preconceptions are therefore, mentalisms, but not analytically developed. One is tempted to call prolepsis intuition. In Sandbach's words "Preconception, according to the Stoics theory of knowledge made possible the search for and discovery of new knowledge (SVF II 104). That is, having a general idea of the characteristics of a thing, we have an indication of the lines to follow in a search for more definite knowledge....Again, a man's reason is said to be formed from his preconceptions (SVF II 841)."[54]

Common to both sides of the above argument is the view that prolepsis are naturally derived, that is, no education or special environment is necessary for a human to have such a notion. This brings us to the discussion of the other debate: How is one to understand 'natural'? Does it mean in born, or something else?

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[53]SVF II 105; LEP, VII, 54; transl. GRPA, p. 70: "According to Chrysippus, in the second book of his Physics, the standard of truth, or criterion, is said to be the comprehensive presentation, i.e., that which comes from a real object....but (later) in the first book of his treatise On Doctrine, he declares that sensation and preconception are the only criteria."

[54]EP, p. 47

Each side of this debate has one very clear fragment to support its case. Those, including Sandbach, who reject the inborn hypothesis, base their argument primarily on the first part of SVF II 83, quoted above. If Aetius has reported correctly, the mind was a 'tabula rasa' at birth according to the Stoics. The opponents, e.g., J. Christensen (EUSP), argue that the preconceptions are 'innate' on the basis of SVF III 69, where Plutarch reports Chrysippus as saying the preconceptions are "emphutos." Once again, the limited evidence on both sides has stalemated the debate. Neither fragment alone sufficiently prejudices a choice. However, in view of the general theory of knowledge which we obtain from the fragments, it appears more likely that the preconceptions were not in born, but acquired at an early age (SVF II 764, Aetius). The preconceptions are thus at least indirectly dependent upon sensation; on this view Stoic empiricism is perserved.

By once again agreeing with Sandbach on this second issue, one does not necessarily jettison the notion of epistemological apriori. Indeed, it would appear that man had an innate <u>power</u> or <u>capability</u> (logos) to conceptualize.

C. Conclusions

The fundamental conclusion made in part A. of this chapter was the irreducibility of Stoic logic to Aristotelian logic. The Stoics were essentially interested in propositions and the laws of formal thinking. Their view of signification was compatible with the desire to isolate logical relationships, however, the latter were simultaneously cosmic relationships, suggesting that the Stoics were subjectivists. Accordingly logical modality was co-extensive with cosmic modality.

In part B we discovered the Stoics claiming to know for certain that things exist. This knowledge was supported by certain criteria. The foremost criteria was the sensible presentation which was obtained from a present, real, external object. Therefore in epistemology, the theory of assent, comprehension, and thought needed the theory of phantasia as its foundation. Herein lies the basis of Stoic empiricism. Sensible phantasia however, do not qualify as knowledge (or doxa), knowledge presupposes assent, and assent is the bridge which modifies the sensible into the mental. Mental phantasia differ from sensible phantasia since the former have but a quasi-real status. Those mental phantasia which are the result of assent to comprehensive presentations, follow a direct path to comprehension and knowledge. Other mental phantasia, those which require conceptual acrobatics, are valid in as much as they are

plugged into the conduit of knowledge. They are indirectly dependent upon sensation, but dependent nevertheless. Of these phantasia, some are technically produced (i.e., the two right-hand quadrents of mental constructions on the model), and others are "mysteriously" incorporeal (e.g., the lekta). In terms of the model we have used, the validating or grounding directions of phantasia move to the left and downward. Thus, the most clearly grounded knowledge is that of a present external object, the most removed knowledge is that of dialectic, the technical study of propositions. Finally, we concluded that prolepsis refered to the primitive and naive mental notion of any thing. It was not inborn, but the power to obtain it was.

III. STOIC ETHICS

A. Living According to Nature.

For the purposes of our special interests, very little is necessaryto report under Stoic Ethics. All that is required is to point out some Ethical implications of the Physics and Logic. That is, how do the theories we have discussed so far relate to the question "What is the final end in life?" The answer the Stoics offered was this: one ought to live in accordance with one's experiance of the things which come about by nature (LEP VII, 87). From our earlier discussions this is understood to mean that we should live according to our mental-ity. Our mentality is of course a small part of the universe logos. Reason and nature are one.

Hence, living according to Nature is a singular process; described physically it is called oikeiosis, logically it is termed logos, and ethically it is known as virtue. Although these three approaches to the same process are of equal value in principle, one is tempted to say that logic predominates and thereby prejudices the essence of nature in its favor. Living according to nature primarily means living logically or rationally.

Of course, man is able to do it. Even though the Stoics did not consider themselves instanciations of the wise man (a creature as rare as the phoenix), it was essentially in man's nature to avoid that which was irrational and nurish himself with things allied to logos.

For this reason, doxa had an ethical value attached to it, as did episteme. A person who falsely assented to doxa was thereby a fool and a base person. Right and Wrong were inextricably associated with true and false.

To conclude, it must be admitted that as yet much of the insight gleaned from this study of Stoicism is at loose ends with respect to the context and goals developed in the Introduction. Indeed, a much more penetrating analysis of the Stoics is in order. Still, some small but significant steps have been taken already. Certainly the point ought to be well taken by now that the Stoics have played a partial role in the formation of the Western notion of theory, which has exalted the significance of science in our culture, and secondly, it should be equally clear in what areas of their philosophy the Stoics made their most influential input for this side of the philosophical tradition.

A Stoic Reference Guide

agathon
ananke
anapodiktoi tropoi
apoios ousia (see hyle)
apriori theme (see prolepsis)
arche
asomaton
body (see soma)
chronon
corporeal (see soma)
dialectic
divination
doxa
eisthesis
element (see stoicheia)
empeiria
energeia
ennoia
    koine ennoia
    physicai ennoia
episteme
ether
fate (see ananke)
hegemonikon
hexis
hyle
hyparchein
incorporeal (see asomaton)
katalepsis
kenon
kinesis tonike (see pneumatic current)
krasis
lekton
logos
matter (see hyle, ousia)
modality
nature (see pyr technikon)
necessity (see ananke)
oikeiosis
ousia
    Prote ousia
Pathos
phantasia
Phantasia Kataleptike
Phantasma
physis
Pneuma
Pneumatic current
Prolepsis
Proposition
    conditional
    universal
    hypothetical
Psyche
Pyr technikon
semainomena
semainonta
semeion
seneioton
Sensation (see eisthesis)
Soma
Soul (see psyche)
Stoicheia
Synkatathesis
tropos

Agathon -- the good, or the blessing of a person.

Sources:

Primary -- SVF[1] II 1176; III 43,54,80,83, 526,587,640,658.
LEP, vii, 100.
Plutarchus: de Stoic repugn.
cp 13, p. 1038c.
cp 26, p. 1046c.
cp 35, p. 1050e.

Secondary -- EP, p. 47f.
PIS, p. 154f., 202f.; DS, II 68-69; PAAS.

Ananke -- it is necessary that such and such; fate.

Sources:

Primary -- SVF II 913, 940-1, 960-2, 974-6, 997; III 658.
-Everything occurs according to fate:SVF II 915.
-All phenomena are caused: SVF II 973.
-Proof for the existence of fate: SVF II 939.
-See also SVF II 912, 916, 915; GRPA, p. 101-110.

Secondary -- GSE, p. 135-155; SP, p. 112-132; PX, 19:288-297, 1965 (Reezor); PL, 18: 329-343, 1968 (Long); AGW, Kl 3, 26, 1940, p. 105-108 (Pohlenz); PIS, p. 186f.; PS, p. 73f, 130f.; PATS, p. 48f.

anapodeiktoi tropoi -- indemonstrable moods, or the five valid inference schemata:

(1) If the first, then the second; but the first: therefore the second.
(2) If the first, then the second; but not the second; therefore not the first.
(3) Not both the first and the second; but the first; therefore not the second.

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[1]All SVF references in this Guide indicate volume and fragment numbers. Note: in the Index of SVF page numbers are given and not the fragment number.

(4) Either the first or the second; but the first; therefore not the second.
(5) Either the first or the second; but not the second; therefore the first.

Sources:

Primary -- AM, viii, 224f.
Sex. Emp. Pyrrh-Hyp., ii, 157f.

Secondary -- DL, p. 163.

apoios ousia -- unqualified matter. See "hyle".

Apriori theme -- See "prolepsis."

arche -- Principle. In Stoic philosophy the arche was not identified with "prime substance" as was the case in pre-Socratic thought. Rather, here the arche was considered an aspect of it. The Stoics had two arche(s), but remained monists due to this aspectual nature they portrayed with respect to "prime substance". These arche(s) were in a "tensional" relationship with one another. One arche was active (poioun) and called god (theos) or logos, and the other was passive (paskon) and refered to as "matter" (hyle). One of the most crucial questions pertaining to Stoic Cosmology is whether or not the arche(s) are corporeal.

Sources:

Primary -- (Since the notion of arche appears frequently in the ancient commentaries on the Stoics, I have selected only a few for general reference: SVF I 85, 493; II 300-3, 312, 316-7, 1027.
-on the inseparability of the arche(s): SVF II 306-8, 318, 1042, 1054.
-on their separability: SVF I 155; II 302, 380.
-on their corporeal nature: SVF I 98, 153; II 1032, 1051.
-on their incorporeal nature: SVF II 299, 408, 409.
-See also LEP, vii, 134.

Secondary -- EUSP, 11f; DS, p.67; PC, p. 102, 201; PS, chap 1; PATS, part I; and PSC, p. 241-244. For a good discussion of the question of corporeality, and a listing of the sides in the debate see PSC, p. 253f, and STK, p. 11f. See also PHP, 133sqq.

asomatos -- nonbody or incorporeal. There are at least four classes of incorporeals in Stoic philosophy, everything else is body. The most famous and controversial class is the "lekton". ("meaning"). The others are kenos (the void of space), topos (place), and chronos (time).

Sources:

Primary -- SVF II 218, 331, 336, 509; GRPA, p. 82f.

Secondary -- PC, p. 108; PSC, p. 264; STK, p. 38f., and AGP, 22: 114-125, 1909.

body -- See "soma".

chronos -- Time. One of the four classes of incorporeals. Also, along with all bodies and places, time can be divided to infinity.

Sources:

Primary -- SVF II 331, 491, 514, 520, 521. AM, X, 142, 218. LEP, VII, 140

Secondary -- STK, p. 38f.; PS, p. 100f.; SP, 273-288.

corporeal -- See "soma".

dialectic -- One of the three (sometimes four) main subdivisions of logic. Dialectic is made up of 'discourse' and 'language'. This constituent of logic was the most highly developed.

Sources:

Primary -- For the full description of dialectic and the curriculum: LEP, VII. SVF II 127, 132, 144a, Also GRPA, p. 73-76.

--as the means of reason to discover truth: SVF II 129.
--as forms of argument: SVF II 241, 242, 244-6.
--The Liar-paradox: SVF II 282.
--definitions: SVF II 229.

Secondary -- DS, p. 37, 49, II 19, 219.

divination -- the ability to predict the result of physical causation.

Sources:

Primary -- AM, IX, 132; LEP, VII, 149. Cicero, De divinatione

Secondary -- PS, p. 66f, 133f; STK, p. 74f.; PATS, p. 64.

doxa -- opinion; the opposite of "episteme".

Sources:

Primary -- SVF I 67, 190; III 70, 119, 122, 127, 129, 378, 380-1, 463, 548.
AM VII, 151; LEP, VII, 104, 106.

Secondary -- STK, p. 53f., 70f.; DS, p. 142f.

eisthesis -- sensation. Just what sensation includes is not clear. It seems to be mutually inclusive with the passive part of soul in the process of knowing, but this cannot be assumed. At a minimum it does circumscribe the act of "presenting" the external object to the ruling soul. (See model, infra p.42a). For sources, see those listed under phantasia kataleptike.

element -- See "stoicheia".

empeiria -- experience; i.e., without the knowledge of principles.

Sources:

Primary -- (General) SVF I 216; II 83; III 4, 12, 15, 563, 567.
Things are known by experience: SVF II 88; LEP, VII, 135.

ennergeia -- actuality or existence in action; usually characterizes the active arche's influence.

Sources:

Primary -- SVF II 173, 175, 179, 318, 848; III 63, 97, 104-5, 113, 242, 393; LEP VII, 98; CN, cp 45, 1084a.

Secondary -- STK, p. 4, 36;

ennoia -- a notion or thought; an intellectual phantasia. The ennoia are grounded in 'that which is assented to by the soul.' There are many kinds of notions, see model infra p. 42a.

Sources:

Primary -- SVF I 65; II 83, 104, 115, 223, 764, 1009; III 188, 218.
-as stored up phantasia: SVF II 17, 847.
-as products of the Soul: SVF II 841.
-as a criteria of truth: SVF II 473.

Secondary -- DES, p. 228-276; EUDS, p. 187-232; EP STK, p. 24f., p. 43f.; DS, p. 56, II 32f.; EUSP, P.57f.

Koine ennoia -- Common notions (noumena), constructed from the "memory" and indirectly grounded in sensation. Not universals.

Sources:

Primary -- SVF I 65, II 87; Seneca, Epet., 117, 6; CN, 1060a.

Secondary -- STK, p. 24f., DS, I, p. 56, 426; EP; EUDS.
-as apriori: EUSP, p. 58.
-as criteria of Truth: PC, p. 63f.
-as prolepsis: PC, p. 63f.
See also HOP, i., 418.

hysikae ennoia -- natural notion. See SVF II 104, PS, p. 355, 408, 429.

episteme -- intuitive knowledge or integral knowledge; the end or goal of philosophy. See also the references for phantasia kataleptike.

Sources:

Primary -- SVF I 60, 65, 66; II 83, 313, 318, 473, 1047.

ether -- A pure fire. Sometimes called the fifth element. The active arche or god.

Sources:

Primary -- SVF II 580, 601, 634, 642, 664, 1014, 1027, 1061.
LEP, VII, 135, 137, 147; AM, IX, 86; Cleanthes, Hym to Zeus.

Secondary -- STK, p. 11; DS, p. 320; PS,p. 37f.

fate -- See "ananke".

hegemonikon -- ruling soul; seated in the heart (and perhaps including the canal of pneuma connecting the heart to the sense organs.) What gives or holds back assent with respect to the phantasia.

Sources:

Primary -- SVF II 59, 83, 96, 132, 836, 842, 863, 879; III 29, 306, 459, 471; AM, VII, 38.

Secondary -- PS, p. 23f; DS, p. 83, 95, 162; EUSP, p. 55, 68;

hexis -- the cohesive unity of a body.

Sources:

Primary -- SVF II 368, 708-13.

Secondary -- PS, p. 7f, 84f., 143f.; STK, p. 15f., DS, II 49; PATS, p. 27.

hyle -- unqualified matter; the passive arche correllate to theos. It is sometimes confused with 'prote hyle' or prime substance.

Sources:

Primary --
-as unqualified matter: SVF I 85; II 318, 380, 1047.
-a dubious list of its various meanings: SVF II 318.
-Inseparably tied to theos: SVF II 306-8, 318, 1042, 1054.
-Separable from theos: SVF I 155; II 302.

Secondary -- PSC, p. 242f; EUSP, p. 11f. PSC, PATS, p. 13, 36; DS, p. 65f., 390f. See also ASPW, p. 37-8, 353-67; DPMP, p. 31-9; LMPS, p. 158sqq.

hyparchein -- What is real; in epistemology, the present external object.

Sources:

Primary -- II 509; AM, VIII, 10.

Secondary -- EUSP, p. 27, 56, 60; STK p. 40, 54.

incorporeal -- See "asomatos".

katalepsis -- The mental grasping of a presentation after the Soul has given assent, this, leading to a bit of knowledge.

Sources:

Primary -- SVF I 60, 66, 69; II 17, 52, 70, 90, 91, 96, 108, 121; III 189, 213, 548; AM VII, 151 and VIII, 356; LEP, VII, 49; CN, cp 7, p. 1061c; GRPA, p.66f.

Secondary -- EUSP, p. 60; PS, p. 9-21, 101f; DS, p. 60f, 174f, 248f; STK, p. 34f., 66f., and SP, p. 133-151;

kenon -- the void of space; one of the four classes of incorporeals.

Sources:

Primary -- SVF II 424, 432-3, 477, 504, 524, 505, 535, 543, 619.
AM, IX, 332 and X, 3; LEP, VII, 140, 143.
Plutarchus, de Stoic repugn. cp 44, p. 1054b.

Secondary -- DS, p. 65-72; PS, p. 110f., 143f.

kinesis tonike -- tensional movement. The general notion of coherence and unity physically explained in terms of opposite equal "forces" held in a balance. In perception theory, it is characteristic of the field of pneuma between the hegemonikon and the sense organs

Sources:

Primary -- SVF II 446, 451, 453.

Secondary -- PIS, p. 119; PS, p. 29 f.; STK, p. 16; EUSP, p. 66.

krasis -- A type of complete mixture whereby the components still keep their internal properties

and can be extracted in tact. This theory seems to militate against the physical law that two things cannot exist in the same place at the same time.

Sources:

Primary -- SVF II 470-3, 479, 481, 487. LEP, VII, 151; CN, cp 40, p. 1080e and 1078e; GRPA, p.87.

Secondary -- PS, p. 7, 11f., 125f.; PIS p. 24, 44; STK, p. 18; LEP, p. 7, 15; See also as an opposite of DeAnima 418, B17. LMPS, p. 162-4.

lekton -- "that which can be expressed," or a "meaning." A precise definition is impossible because of Stoic ambiguity. Assuredly it is one of the classes of incorporeals.

Sources:

Primary -- SVF II 87, 132, 166, 168, 170, 181, 187, 331, 335. GRPA, p. 175-178; AM VIII, 11, 12, 38, 70; X, 218; XI, 224. LEP, VII, 51, 52, 63; CN, cp. 30, p. 1074d.

Secondary -- DL, p. 138-158; PIS, p. 75-90; PSC, p. 245; STPK, p. 306, n.3; STK, p. 41-48; PCSP, p. 114; DS, p. 39-65; PATS, p. 33. EUSP, chap. 3. Also see -- STL; AFL, p. 84 and HOL, p. 421.

logos -- The rational nature of the cosmos. Logos has a host of modified meanings, ranging from rational discourse to being god. (There are countless appearances of this concept; I have listed only a few below).

Sources:

Primary -- SVF II 135, 841, 879, 988, 913; III 178, 390, 462, 477; LEP, VII, 85.

Secondary -- STPK, p. 309f.; STK, chap. 2, 3, and conclus.; DS, p. 34, 68, 111f., 143f., EUSP, chap 1 and 3; PATS, p. 35 and 41; GDL, p. 98f.
--See also the references under "theos".

matter -- See "hyle" or "ousia".

modality -- Logical modality: possible/impossible, necessary/non-necessary.

Sources:

Secondary -- DL, p. 117-128.

nature -- See "pyr technikon."

necessity -- See "ananke."

oikeiosis -- An organic power of assimilation or disposition. The power of survival, taking in only that which is beneficial to the organism.

Sources:

Primary -- SVF I 181, 197; II 724; III 188, 229, 492, 497.

Secondary -- STK, p. 22; Brink, "oikeosis and oikeiotos;" GP, III, p. 86&128; DS, p. 57, 253f., PIS chap 6., 199f.

ousia -- Substance or prime matter (prote ousia or prote hyle.)

Sources:

Primary -- SVF I 85, 87; II 309, 316-8, 323, 374; GRPA, p. 80f.

Secondary -- PSC, p. 243f.; PIS, chap 3, 98f.; EUSP, p. 12f.

pathos -- Passions, a non intellectual movement of the Soul. It is in a sense logos, but leads to doxa not episteme.

Sources:

Primary -- SVF I 208, 212, 215; III 407 412, 452-3, 459, 461. LEP, VII, 110-111; GRPA, 127f.

Secondary -- PATS, p. 28-30; PIS, chap 9; STK, p. 61f.

phantasia -- Presentations; "images" of the external object which are presented to the hegemonikon as an impression or alteration of the pneuma.

Sources:

Primary -- SVF I 58; II 88, 131, 994; GRPA, p. 60-67
--kinds of presentations: SVF II 61
--modification of Soul: SVF II 54, 56
--internal SVF II 882
--false presentations SVF III 177
--common notions SVF II 473
--tensional movement SVF II 458

Secondary -- PIS, p. 22f., DS, 87f, II 51f., STPK, p. 311; PATS, p. 24, 33; EUSP, p. 45, 56f.; STK, p. 24-43; CHR, p. 164ff.

phantasia kataleptike -- A true presentation, one which properly images the external object and therefore makes it known truely when it is given assent. It is a criteria for truth.

Sources:

Primary -- SVF I 59, 624, 625; II 53, 56, 60, 63, 67, 69, 90, 97, 105, 131, 276, 850; III 18. AM, VII, 151, 227; LEP, VII 54; GRPA, p. 62f.

Secondary -- PIS, p. 9-21; DS, p. 59-63; STK, p. 34-7; SP, p. 133-147; EUDS, p. 138-187 (esp. 160-8); Barth, Die Stoa, p. 104-5; CHR, p. 80-107; SAE, p. 69-73; PAAS, p. 74; also SAP, p. 35-39; PATS, p.33.

phantasma -- An image which does not correspond to a real external object.

Sources:

Primary -- II 54, 55, 83; LEP, VII, 50.

physis -- Nature of, or the Structure of. The structure of organic being comparable to hexis for inorganic being, and psyche for animals and men.

Sources:

Primary -- SVF II 458, 708-13, 716.
-The Nature of words: SVF II 146.

Secondary -- STK, p. 16, 44; EUSP, p. 55-73; DS, p. 65-68, II 219f.; PS, p. 8-10.
See also PATS p. 54.

pneuma -- The physical binding agent of the universe. Fire and air together. Also, the active arche. The universal continuum which is in a tensional motion and which excludes any "void".

Sources:

Primary -- SVF I 135-8; II 416, 442, 446, 697-8, 708-16, 787, 841; III 305, 370; LEP VII, 152, 157; AM, IX, 130.
-as fire and air: SVF II 310, 786.
-as theos: SVF II 310, 1009, 1027.
-just air: SVF II 471.
-the tensional flow from hegemonikon to sense organs: SVF II 802.
-universal continuum: SVF II 425.

Secondary -- PSC, p. 273f.; DS, p. 73-5; PS, p. 21-48; PC, p. 43f.; SAP p. 35-39; STK, p. 14f., EUPS, p. 33, 55; PSP; DATS, p. 44; LDP, p. 39-40.

neumatic current -- The physical continuum as "tensional motion".

Sources:

Primary -- SVF II 449, 471
-Extending from ruling part of Soul: SVF II 836.
-Carrier of "sense" data: SVF II 826.
-of the Soul: SVF 841, 879.
-active principle, motion: SVF II 413, 449.
-as sound waves: SVF II 872.
-in vision; SVF II 867.
_Spider web analogy: SVF II 802.

Secondary -- EUSP, p. 33; STK, chap 2; PS, p. 332f.

prolepsis -- Anticipation or preconceptions. A "natural" conception of the general characteristics of a thing. The opposite of the "essential definition". It is debated whether or not some of these are inborn and therefor function as apriori.

Sources:

Primary -- SVF I 149; II 83, 87, 105, 242, 841; III 69. LEP, VII, 54: GRPA, p. 68-70; AM, VIII, 223, 228-9.
-as inborn: SVF III 69.
-as natural concepts, not inborn: SVF II 83.
-as common notions: SVF II 87.
-as criterion for truth: SVF II 105.
-as non-universal: CN, 1084d & 1081b.

Secondary -- STPK, p. 314f., EUDS, p. 187-232; EP; STK, chap. 2, esp. 28f., DL, p. 164; DS, 56-58; DES, p. 228-276.
-as Empirical concepts: EUSP, p.57.
-as common notions: EUDS, p. 199f., EUSP, p. 58; PC, p. 62f.
-as criterion of truth: PC, p.63f., CHR, p. 103.

proposition -- conditional, universal, and hypothetical.

Sources:

Primary -- AM, VIII, 96; GRPA, p. 75f., 103-106.

Secondary -- SL, chap. 3 & 4; DL, p. 146; AFL, p. 88f.

syche -- Soul; opposed to "hyle", but is itself a "body."

Sources:

Primary --
--is corporeal: SVF I 136-8, 518; II 4,7, 247, 773-5, 780, 785, 790f.
--interpenetrates with 'body': SVF II, 471, 473, 634.
--Parts of: SVF II 875, 880, 885, 894, 910.
--in the Knowledge process: SVF II 879.
--States of: SVF III 47a.
--Immortality of: SVF II 811, 815.
--a Rational unity: SVF II 906.

Secondary -- EUDS; STK, chap. 1, PATS, 25-33, 44-46; PIS, chap. 9; PS, p. 8, 10, 16.

pyr technikon -- a working fire on its way to create; prime substance. What the cosmos comes out of and eventually returns to.

Sources:

Primary -- SVF II 1132f.,; LEP, VII, 148,156.

Secondary -- PS, p. 3f., STK, p. 1f., DS, I. p. 73; See also DASN p. 96-7.

semainomena -- things which are signified (lekton)

semainonta -- things which signify

Sources:

Primary -- SVF II 122, 166, 298a; LEP VII, 62; AM VIII, 11,12, 245, 255-6.

Secondary -- DL, p. 138-158.

semeion -- a natural sign

semeioton --what is known via a natural sign

Sources:

Primary -- AM, VIII, 143-7.

Secondary -- DL, p. 138-158.

sensation -- See "eisthesis".

soma -- Body. That which can act or produce effects. All that exists; having length, breadth, and heighth. What is corporeal; but not necessarily "material".

Sources:

Primary -- SVF II 336, 469; LEP, VII, 56; GRPA, p. 143
--What has length, breadth and heighth: SVF II 382.
--These three plus resistence: SVF II 381.
--theos as: SVFII 302, 1027, 1029.
--accidents as: SVF II 377.
--Soul as: SVF II 518; II, 790f.
--qualities are corporeal: SVF II 323,383.
--causation is corporeal: SVF I 90; II 311, 340-1, 363, 387.
--the arche(s) are corporeal: SVF I 98, 153.
--all that exists is corporeal: SVF II 320, 525.

Secondary -- PSC; PC, p. 107-8; STK, p.9; PS, p. 95f., PIS, chap 5; PATS, p. 24, 40.

soul -- See "psyche".

stoicheia -- Temporal, corporeal constituents of the cosmos, i.e., fire, water, air, and earth. The four elements.

Sources:

Primary -- SVF II 408; LEP, VII, 134f.

Secondary -- EUSP, p. 11f, 33f., PSC, p. 262f. On the "5" elements see P. Moraux, PRE, 33; coll 1171-1263, 1963.

synkatathesis -- assent; the souls acceptance of a presentation as valid.

Sources:

Primary -- SVF II 974, 991, 1000.

Secondary -- PIS, chap. 1.

theos -- god, the active arche.

Sources:

Primary --
--as qualified matter: SVF II 314, 320.
--as a creative force of fire: SVF I 7, 23, 157, 171, 513; II 1031-2, 1045, 1133-4.
--as the purest body: SVF II 302, 1027, 1029, LEP, vii, 136.

Secondary -- SP, p. 259; PSC, p. 253, 257; POS; PELS, p. 24-46.

BIBLIOGRAPHY

Highly recommended sources will be marked with an asterisk.

Part One: Primary Sources and Editions.

Adam, J., Texts to Illustrate Greek Philosophy after Aristotle, (Macmillan, N.Y., 1902), p. 28-55.

Arnim, J. Von*, Stoicorum Veterum Fragmenta, 4 Vols., Leipzig, Teubner, 1905-1924; Stuttgart, 1964. Note: This is the excepted standard collection of the fragments. Modern research has since uncovered additional fragments, but nothing which renders this work impotent. Von Arnim's rule of thumb, unlike Pearson, was that "the Stoics say" means "Chrysippus." One should also be aware that in the index volume, the number following the Roman numeral is a page reference and not a fragment number.

Capella, Martianus, Opera, Ed. A. Dick; Leipzig, Teubner, 1925.

Cicero, Academica; De Natura Deorum, tr. H. Rockham, Loeb Classical Library, G.P. Putnam's Sons, N.Y., 1933.

_____, De Divinatione; De Fato; Timaeus, Ed. W. Ax; Leipzig, Teubner, 1938.

_____, De Finibus, tr. H. Rockham, Loeb Classical Library, The Macmillan Co., N.Y., 1914.

_____, Topica (in Opera Rhetorica), Ed., G. Friedrich; Leipzig, Teubner, 1893.

Diogenes Laertius,* Lives of Eminent Philosophers, tr. R.D. Hicks, Loeb Classical Library; London, Heinemann, 1925, 2 vols.

Edelstein, L. & Kidd, I., Posidonius I: The Fragments, (Cambridge, 1972).

Festa, Nicola, I frammenti degli Stoici Antichi, Vol. II, (Bari: Guiseppe Laterza e Figli, 1935.)

Galen, Einfuhrung in die Logik, tr. Jurgen Mau, (Deutsche Akademie der Wissenschaften zu Berlin, Berlin, AkademieVerlag, 1960.)

Hadas M., ed., Essential Works of Stoicism, (Bantam Books, N.Y., 1961.) Includes "Life of Zeno," by Diogenes Laertius) and "Hymn to Zeus," by Cleanthes.

Kieffer, J.S., tr. Galen's 'Institutio Logica', (The John Hopkins Press, Balt., 1964.)

Pearson, A.C., The Fragments of Zeno and Cleanthes, (London: C.J. Clay and Sons, 1891.) Note: Pearson supported the thesis that Chrysippus merely preserved the original work of Zeno and Cleanthes.

Plutarchus,* de communibus notitiis, Vol. XIII of Moralia, Loeb Classical Library, London, Heinemann.)

Saunders, J.* Greek and Roman Philosophy after Aristotle, (The Free Press, N.Y., 1966), p. 59-150.

Schneider, R., and G. Uhlig, Grammatici Graeci, Leipzig, Teubner, 1878 (Vol. 1, fasc 1), and 1910 (vol 5).

Seneca, Epistulae Morales, tr. Richard M. Gummere, Loeb Library, London: Heinemann, 1917-34.

Sextus Empiricus, Adversus Mathematicos and Outlines of Pyrrhonism, tr. R.G. Bury, Loeb Classical Library, London: Heinemann, Vol. 1-4, 1935-49.

_____, Opera, ed. H. Mutschmann and J. Mau, Leipzig, 1912-54, (3 vols). 1958 (1 vol.).

Part two: Foreign Language Bibliographies

Hoven, Rene,* Stoicisme et Stoiciens - Face au Problem de L'au-dela, Stociete d'Edition ((Les Belles Lettres)) Paris, 1971.

Jadaane, Fehmi, L'Influence Du Stoicisme sur la Pensee Musulmane, Dar El-Machero Edit eurs, Beyrouth, 1968. Includes many Arabian titles.

Mignucci, Mario IL Significato della Logica Stoica, Cosa Editrice Prof. Ricardo Patron, Bologna, 1967.

Pohlenz, Max,* Die Stoa, 2 Vols., (Gottingen, 1952).

Van Straaten, M., De Stoa, (J.J. Romen and Zonen, ut gevers, Roermond, 1969.)

Part Three: General accounts of Stoic Philosophy

Barth, Paul,* Die Stoa (Stuttgart: Fr. Frommann, 1903). Note: Still among the best scholarly studies of Stoic philosophy.

Bevan, Stoics and Sceptics, (Oxford, 1913 and N.Y., 1959.)

Brehier, E.*, Les Stoiciens, collected articles of one of the most influenctial French Stoic Scholars, ed., De Pierre-Maxime Schuhle, Bibliotheque de la Pleiade, 1968.

Bridoux, A., Le Stoicisme et son Influence (Librarie Philosopheque J. Vrin, 1966, Paris.)

Brun, J., Le Stoicisme, (Presses Universitaries de France, 1969).

Capes, Stoicism, (London, 1880).

Christensen, J.,* An Essay on the Unity of Stoic Philosophy, (Scandinavian University Books, Copenhaghen, 1962). Note: This is one of the few really philosophical treatments of Stoicism in English. It is a challenging piece of work. However it has one major flaw: poor documentation.

Dreisor, T., The Stoic, (Doubleday, Garden City, N.Y., 1947.)

Edelstein, L., The Meaning of Stoicism (Cambridge, Mass., 1966).

Elordury, Eleuterio,* "Die Sozial Philosophie der Stoa," Philologus, Supplement band 28.3, Leipzig, 1936. Note: like Christensen the stress here is on the unity of Stoic philosophy.

Goldschmidt, v.,* Le System Stoicien et l'idee de temps, (Incl. Ed., Paris, 1969; Vrin, 1953.)

Hicks, R.D., Stoic and Epicurean, (Russell and Russell, N.Y., 1962; Scribner's, 1910.) Note: This is a popular work in the field, however I found it outdated and not very helpful.

Hoven, Rene,* Stoicisme et Stoiciens. Face au Problem de L'audela, Societe d'Edition ((Les Belles Lettres)) Paris, 1971.

Murray, G., The Stoic Philosophy, (London: Watts, 1915.)

Ogereau, F., Essai sur la Systeme Philosophique del Stoiciens, (Paris, 1885).

Pohlenz, Max,* Die Stoa, 2 Vols., (Gottingen, 1952). Note: This is the best single work on Stoicism today. Pohlenz supports the thesis that "the Stoics say "means "Chrysippus."

_____,* "Grund fragen de Stoichen Philosophie," Abendlandischen der Gesellschaft der Wissenschaft zu Gottingen, Phil. - Hist. KL.3, 26, 1940.

_____,* Stoa und Stoiker, (Artemis-Verlag, Zurich und Stuttgart, 1964.)

Rist, J.M.* Stoic Philosophy, (Cambridge University Press, 1969.) Note: This has been a very popular book. However, as one might expect from a classicist, the approach is more philological than philosophical. Contains a good bibliography.

Van Straaten, M., De Stoa, (J.J. Romen and Zonen, Utgevers, Roermond, 1969.) Note: contains a good bibliography.

Wenley, Stoicism and its Influence, (Marshall Jones, Co., Boston, 1924.) Note: The emphasis here is on Stoicism from Rome to the 19th Century.

Zeller, E., The Stoics, Epicureans, and Sceptics, tr. O.J. Reichel, (Longmans, Green & Co., London, 1870.) Note: Once a classic, this work is now obsolete. It contains many false assumptions.

Part Four: Ontology and Physical Theories

Bloos, Lutz*, Probleme der Stoischen Physics, (Helmet Bushes Verlag, Hamburg, 1971.) Note: A short but good account; especially good on pneuma. Includes a good bibliography.

Hahm, D., "Chrysippus' Solution to the Democritean Dilemma of the Cone," Isis, 63: 205-220, Je. 1972. Note: This article is helpful inasmuch as it describes a concrete problem dealt with by the Stoics.

Hunt, H.K.,* "Some Problems in the Interpretation of Stoicism," A.U.M.L.A. 27:165-177,1967. Note: Defense of the position that there is a separate store of 'matter' which stands in opposition to 'theos'.

Lapidge, M.,* "A problem in Stoic Cosmology," Phronesis, 18: 240-278, 1973. Note: An extremely beneficial article. I found it to provide the most stimulating analysis anywhere of the two 'arche' principles.

Reezor, M.,* "Fate and Possibility in Early Stoic Philosophy", Phoenix, 19:288-297, 1965.

Sambursky, S., "Atomism Vs. Continuum Theory in Ancient Greece," Scientia, 96:376-381, 1961.

_____, "On Some Refernce to Experience in Stoic Physics," Isis, 49:331-335, 1958. Note: Not concerned with the technical term "emperia", but with experimental grounding of theory.

_____,* The Physics of the Stoics, (Routledge, Kegan Paul, London, 1959.) Note: Sambursky is always helpful and reliable. He has probably written more on Stoic physics than any other English Scholar.

Part Five: Epistemology and Anthropology

Andriopoulos, D.,* "The Stoic Theory of Perceiving and Knowing," Philosophia (Athens), p. 305-325, 1972. Note: Basically a restatement of Sandbachs views.

Barwick, K., "Probleme der Stoischen sprachlerhie und Rhetorik," Abend landischen der Gesellschaft der Wessenschaft zu Leipzig, phil.-hist. Kl. 49, 3, Berlin, 1957.

Bochenski, I.,* A History of Formal Logic, (University of Notre Dame, 1961.) Especially p. 105-132.

Brochard, V., * "Sur la Logique des Stoicens," Archiv fur die Geschichte der Philosophie, 5: 449-468, 1892.

Chartier, E.,* La Theorie de la connaissance des Stoiciens, (Presses universitaires de France, 1964).

Hamlyn, D.W., * Sensation and Perception, (Routledge and Kegan Paul, London, 1966.) Note: A very helpful, though short account of Stoic perception.

Hay, W., "Stoic Use of Logic," Archiv fur die Geschichte der Philosophie, 51:145-157, 1969.

Hurst, Martha (Mrs. Kneale), "Implications in the 4th Century B.C." Mind, 44:484-495, 1935.

Jaskowski, Stanislaw,* "On the Rules of Supposition in Formal Logic," Studia Logica, #1, Warsaw, 1934.

Kahn, C., "Stoic Logic and Stoic Logos," Archiv fur die Geschichte der Philosophie, 51:158-172, 1969.

Kneale, W. & M.,* The Development of Logic, (Oxford, 1962.) Note: Already a classic. The Kneales were among the vanguard for the rival of Stoic scholarship in the last two decades. This work describes the major features to Stoic logic and advances the significant thesis that Stoic and Peripatetic logic are actually compatible rather than mutually exclusive.

Krokiewicz, Adam, "O Logice Stoikow," Kwartalnik Filozoficzny, 17, 1948.

Lukasiewicz, J., * Aristotle's Syllogistic, (Oxford, Clarendon Press, 1957).

_____., * Selected Works, ed., L. Borkowski, (North-Holland Publ. Co., Amsterdam, 1970.), p. 197f.

_____., "zur Geschichte der Aussagenlogik," Erkenntnis, 5: 111-131, 1935.

Mates, B., Stoic Logic,* (University of California Press, Berkeley, 1961.) Note: The most popular full account of Stoic Logic.

_____., "Stoic Logic and the Text of Sextus Empiricus." American Journal of Philology, 70: 290-298, 1949.

Mau, J., "Stoische Logik," Hermes, 85:147-158, 1957.

Mignucci, Mario, IL Significato Della Logica Stoics, (Casa Editrice Prof. Ricardo Patron Bologna, 1967.) Note: Includes an extensive bibliography.

Mueller, "Stoic and Peripatetic Logic," Archiv fur die Geschichte der Philosophie, 51:173-187, 1969.

Pohlenz, Max, "Die Begrundung der Abendlandischen Sprachlehre durch die Stoa," Nochricht von der Gesellschaft der Wessenschaft zu Gottingen, Phil.-Hist. Kl, N.F. i,3, 151-198, 1939.

Schmidt, R.T., Storicorum Grammatica (A.M. Hakkert, Amsterdam, 1967.)

Stein, L.,* Die Erkenntnistheorie der Stoa, (Berlin: S. Calvery and Co., 1888.) Note: Still one of the classic pieces of stoic scholarship.

_____., Die Psychologie der Stoa, (Berlin: S. Calvery and Co., 1886.) Note: Extremist stand that "the Stoics say" equals "Chrysippus; later modified slightly by Pohlenz, Von Arnim, and others.

Virieux-Reymond, A., La Logique et l'epistemologie des Stoiciens, 'Lusanne, 1949.

Watson, G.,* The Stoic Theory of Knowledge, (The Queens University, Belfast, 1966.) Note: I found this to be about the clearest and all around the most useful English text.

Wisniewski,* Bohdan, "The Problem of Cognition in Stoic Philosophy," Classica et Mediaevalia, 19:110-119, 1958. Note: This is an important study which isolates a traditional western problem of knowledge the relationship between "sense derived knowledge" and "intuitive knowledge."

Part Six: Ethics or Practical Philosophy

Bonhoffer, A.,* Die Ethik des Stoikers Epictet, (F. Enke, Stuttgart, 1894.)

_____., * Epictet und die Stoa, (F. Enke, Stuttgart, 1890.)

Dryoff, A., Ethik der alten Stoa, (Berliner Studien N.F. 2, 1897.)

Haynes, R., "The Theory of Pleasure of the Old Stoa," American Journal of Philology, 83:412-419, 0', 1962.

Harowitz, M., "The Stoic Synthesis of the Idea of Natural Law in Man: Four Themes," Journal of the History of Ideas, 35:3-16, 1974. Note: Includes an analysis and definitions of many key technical terms.

Hubby, P., "The First Discovery of the Free Will Problem," Philosophy, 42:353-367, 1967.

Kidd, I., "The Relations of Stoic Intermediates to the Summum Bonum with Reference to change in the Stoa," Classical Quarterly, 6:181-194, 1956.

Long, A.A., "Aristotles' Legacy to Stoic Ethics," Bulletin of the Institute of Classical Studies, 15:72-85, 1968. Note: Contains references to Edelstein's, The Meaning of Stoicism and Bevan's Stoics and Sceptics.

_____., "Carneades and the Stoic telos," Phronesis, 12:59-90, 1967.

Reith, Otto,* Grundbegriffe der Stoischen Ethik, (Berlin: Weidmannsche Buckhandlung, 1933.) Note: An analysis based on the assumption that the Roman Stoa was a restatement of Chrysippus.

_____., "Uber das telos der Stoiker," Hermes, 69: 13-45, 1934.

Part Seven: Works on Individual Stoics

Baguet, F.N.G., De Chrysippo, (Annales Academiae Lovaniensis, 1822.) Note: Postulation of the idea that Chrysippus was the one who made logic an important ingredient of Stoic philosophy. This is now widely accepted.

Brehier, E., Chrysippe* (Paris, 1910.) Note: Still remains one of the finest works on Chrysippus.

_____., Chrysippe et l'ancien Stoicisme,(Paris, second ed., 1951.)

Chroust, A., "Zeno's Republic," Review of Politics, 27:173-183, 1965.

Edelstein, L., "The Philosophical System of Posidonius," American Journal of Philology, 58:286-325, 1936.

Gould, J.,* The Philosophy of Chrysippus, (Sunny Press, Albany, N.Y., 1970.) Note: a notable representative of the revival of Stoic scholarship in the last two decades. Gould's eristic principle of using as evidence only those fragments which specifically mention Chrysippus by name has both advantages and disadvantages. While Gould provides us with a competent minimum statement his research is greatly limited in scope and quite unsatisfactorily incomplete.

Peterson, C., Philosophiae Chrysippi Fundamenta, (Atonc and Hamburg, 1827.) Note: Yet another of the early studies supporting the view that a reference to "the Stoics" by the commentators, was a reference to Chrysippus.

Pohlenz, Max, "Zennon und Chrysipp," Nachrichten aus der Altertumswissenschaft, Philologisch-Historische Klasse, Neue Folge, Fachgiuppe I, 1936-38, (Gottingen: Vandenhoech und Ruprecht, 1938), pp. 173-210. Note: Develops the theory that the Stoic phantasia was an impression on the soul.

Von Arnim, H., "Chrysippos," Paulys Real-Encyclopadie der Classischen altertumswissenschaft, (Stuttgart: Alfred Druchenmuller, 1899), Cols. 2502-2509.

_____., "Kleanthes," Paulys Real-Encyclopadie der Classischen altertumswessenschaft, (Stuttgart: Alfred Druchen-muller, 1899), cols. 574-588.

Von Fritz, K., "Zeno," Pauly's Real-Encyclopadic der Classischen altertumswessenschaft, supplement 10A.

Part Eight: Analysis of Technical concepts.

Aall, A., Geschichte der Logosidee, (Leipzig; 1896).

Adorno, F., "Sul significato del termine 'huparkon' in Zennone Stoico," La Parola del Passato, XII;156-161, 1967.

Apuleius, "De philosophia Rationali = 'perihermenias,'" in Opera III, ed., P. Thomas, Leipzig, 1908.

Baeumker,* Das Problem der Materie.

Brehier, E.,* La Theorie des Incorporels dans l'Ancien Stoicisme, (Paris, 1908, second ed., 1920), especially p. 10-13.

Brink, C.O., "'oikeiosis' and 'oikeiotas': Theophrastus and Zeno on Nature in Moral Theory," Phronesis, 2:123-145, 1956.

DeLacy, P., "Stoic Categories as Methodological Principles," (Transactions and proceedings of the) American Philological Association, 76:246-263, 1945.

_____., "Stoic View of Poetry," American Journal of Philology, 69:241-271, 1948.

Gould, J.,* "Chrysippus: on the Criteria for Truth of a Conditional Propositon," Phronesis, 12:152-161, 1967.

_____., "The Stoic Conception of Fate," Journal of the History of Ideas, 35:17-32, 1974.

Grumach, E.,* Physis und Agathon in der Altern Stoa, (Berlin, 1932.)

Long, A.,* ed.,Problems in Stoicism, (The Athlone Press, London, 1971.) Note: Includes articles by Long, Sandbach, Rist, Lloyd, Pembroke, Kidd, and Watson. Topics discussed range from Phantasia Kataleptike, ennoia, and proleysis to the categories, oikeiosis and Natural Law.

_____., "The Stoic Concept of Evil," Philosophical, 18:329-343, 1968.

Mattingly, J.R.,* "Early Stoicism and the Problem of its Systematic Form," Philosophical Review, 48:273-295, 1939.

Nebel, G., "Der Begriff des 'Kathakon' in der alten Stoa," Hermes, 70:439-460, 1935.

Orth, E., "Storicorum Lekton," Emerita, 30:59-61, 1902.

Pire, G., Stoicisme et Pedogogie, (Libraire Philosophique, J. Vrin, Paris, 1958.)

Reesor, M., "The 'Indifferents' in the Old and Middle Stoa," (Transactions and Proceedings of the) American Philological Association,82:102-110, 1951.

_____., The Political Theory of the Old and Middle Stoa, (N.Y., 1951.)

_____., "The Stoic Categories," American Journal of Philology, 78:63-82, 1957.

_____., * "Stoic Concept of Quality," American Journal of Philology, 75:40-58, 1954.

Sandbach, F.H.* "ennoia and prolepsis in the Stoic Theory of Knowledge," Classical Quarterly, 24:44-51, 1920. Note: A detailed study of concepts and preconceptions, and whether the latter are inborn.

Simon, H. & M., Die Altere Stoa und ikre Naturbegriff, (Berline, 1954)

Todd, R., "Chrysippus on Infinite Divisibility," Apeiron, 7:21-26, 1973.

Van Winden, J.M.C., Calcidius on Matter, (Lenden, 1959.) p. 93-103.

Verbeke,* G., L'Evolution de la Doctrine du Pneuma du Stoicisme a S. Augustine, Paris: Desclee de Brouwer, 1945.

Voelke, Andre-Jean, L'idee de Volente dans Le Stoicisme, (Presses Universitaires de France, 1973.) Note: Contains a good bibliography.

Wiersma, W., "telos und Kathakon in der alten Stoa," Mnemesgne, 3-5, 219-228, 1937.

Part Nine: Book Reviews

Christensen, J., The Unity of Stoic Philosophy:
reviewed by P. DeLacy in Gnomen, 35:308-310, 1963.

Gould, J., The Philosophy of Chrysippus:
reviewed by J. Philip in Dialogue, 10:802-804, 1971.
by A. Preus in Stud, Int. Filosof., 4:215-218, (4), 1972.
by J. Rist in Phoenix, 25:386-388, 1971.
by R. Sherman in Journal of Thought, 7:132-134,1972.
by Salignor in Archiv fur die Geschichte der Philosophie, 35:680, 1972.
by G. Watson in Philosophical Quarterly, 22:268-2;9, 1972.

Pohlenz, Max, Die Stoa:
reviewed by L. Edelstein* in American Journal of Philology, 72:426-432, 1951.
by H.J. Mette in Gnomon, 23:27-39, 1951.

Reesor, M., The Political Theory of the Old and Middle Stoa:
reviewed by O. Luschnat in Gnomon, 24:381-382, 1952.

Rist, J., The Stoics:
reviewed by J. Gould in Journal of the History of Ideas, 9:81-86, 1971.
by P. Hubby in Philosophical Quarterly, 21:75, 1971.
by H. Long in American Journal of Philology, 92:748-749, 1971.
by H. Rankin in Australian Journal of Philosophy, 49:223-225, 1971.
by M. Reesor, M in Phoenix, 25:78-80, 1971.
by C. Stough in Philosophical Review, 80:407-411, 1971.

Sambursky, S.,* Physics of the Stoics:
reviewed by Luman in Gnomon, 32:575-576, 1960.

Von Arnim, H.* Stoicorum Veterum Fragmenta, Vol. II:
reviewed by M. Pohlenz in Berliner Philologische Wochenschrift, 23:962-971, 1903.

Part Ten: Background Material

Armstrong, A.H., ed, The Cambridge History of Later Greek and Early Medieval Philosophy, (Cambridge, 1967.)

Arnold, E.V.*, Roman Stoicism, (The Humanities Press, N.Y., 1958, first publ. 1911.) Note: a general description of the entry of Stoicism into Roman culture. Arnold develops the view that Chrysippus put all of his energies into systematizing and strengthening the basic Stoic position of Zeno and Cleanthes.

Babut, D., Plutarque et le Stoicisme, (Paris, 1969.)

Bakwell, C., Source Book in Ancient Philosophy, (Scribners, N.Y., 1907), especially p. 269-290.

Baldry, H.C., The Unity of Mankind in Greek Thought, (Cambridge, 1965).

Callahan, Four Views of Time in Ancient Philosophy, (Harvard, 1948).

Chroust, Anton-Hermann, "Late Hellenistic 'Textbook of Definitions' of Philosophy," Laval Theologique et Philosophique, 28:15-25, 1972.

Clagett, M., Greek Science in Antiquity, (University of Wisconsin, 1963.)

Cornford, F.M.* Before and After Socrates, (Cambridge University Press, 1960.)

DeLacy, Estelle, "The Meaning and Methodology of Hellenistic Philosophy," Philosophical Review, 47: 390-409, 1938.

De Vogel, C., Greek Philosophy, 3 vols, (Leiden, Brill, 1959.)

Dijksterhuis, E.J.* The Mecohanization of the World Picture, (London, 1961), especially p. 42f.

Faj, Attila, "Platonic Anticipations of Stoic Logic," Part I Apeiron, 5:1-19, Ag. 1971; Part II Apeiron 6:1-24, Mr., 1972.

Farrington, B., Greek Science, (Penguin Books, N.Y., 1961.)

Fuller, B.A., A History of Ancient and Medieval Philosophy, (Holt, N.Y., 1938), p. 203-235.

Graeser, A.,* Plotinus and the Stoics, (Leiden, 1971).

Jadaane, Fehmi, L'Influence die Stoicisme sur la Pensee Musulmane, (Dar El-Machers Edit eurs, Beyrouth, 1968.) Note: Has an excellent bibliography for a study of Medieval Islam.

Jagu, Armand, Epictete et Platon; essai sur les relations du Stoicisme et du Platonisme a propos de la Morale des Entretiens, (Paris: J. Vrin, 1946.)

Jones, W.T.* A History of Western Philosophy, (Harcourt, Brace, and Co., N.Y., 1952), p. 266-272.

Long, A.A.,* Hellenistic Philosophy, (Duckworth, N.Y. 1924.)

_____., "Stoic Determinism and Alexander of Aphrodisias, De Fato (I-XIV), "Archiv fur die Geschichte der Philosophie, 52:247-268, 1970.

Maurice, F, Moraland Metaphysical Philosophy, Vol 1, (Macmillon, N.Y., 1890), p. 238-245.

Merlan, P. Monopsychism, Mysticism, Metaconsciousness. Problems of the Soul in New-Aristotelian and Neo-Platonic Tradition, (The Hague, 1963).

Moore, C., The Religious Thought of the Greeks from Homer to the Triumph of Christianity, (Cambridge, Mass., 1916.)

Moore, P.E., Hellenistic Philosophies, (Princeton, 1923.)

Moreau, J.* L'Ame du Monde de Platon aux Stoiciens, (Paris, 1937.)

Owens, J., * A History of Ancient Western Philosophy, (appleton, Century and Crafts, N.Y., 1959), p. 385f.

Pfeiffer, R., History of Classical Scholarship, Vol 1, (Oxford, 1968.)

Pohlenz, Max, "Plutarchs Schriften gegen die Stoiker," Hermes, 74:1-33, 1939.

Sambursky, S., "On the Possible and the Probable in Ancient Greece," Osiris, 12:35-48, 1956.

_____., The Physical World of the Greeks, (London, 1956).

_____., The Physical World of Late Antiquity, (London, 1962).

Sandbach, F.H. "Plutarch on the Stoics," Classical Quarterly, 35:20-25,1941.

Saunders, J.* "Stoicism," The New Encyclopedia Britanica: Macropedia, Vol. 17, (Wm. Benton, Chicago, 15th ed., 1974), p. 698-702.

Theiler, W., "Plotin zwischen Platon und Stoa," Entretiens Foundation Hardt, 5:63-86, 1960.

Thompson, Manley, "Logic, Philosophy, and History," Review of Metaphysics, 8:97-104, Sep., 1954.

Uberweg, F., * History of Philosophy, Vol. 1, tr. G.S. Morris, (Charles Scribner's Sons, 1884), p. 185-200. Note: contains a comprehensive account of all important Stoic scholarship to his day.

Verbeke, "Aristat ebsme et Stoicisme dans le De Fato d'Alexandre d'Aphrodisias," Archiv fur die Geschichte der Philosophie,50:73-100, 1968.

Windelband, W., A History of Philosophy, tr. J.H. Tufts, (The McMillan Co., London, 1926), part II.

Wolfson, H.A., Philo: Foundations of Religious Philosophy in Judaism, Christianity, and Islam, 2 vols., (Cambridge, Harvard Universtiy Press, 1947.

Part Eleven: Related Issues

Adkay, R.C., "The Conception of 66:154-155, 0, 1939.

Close, Antony, "Philosophical Theories of Art and Nature in Classical Antiquity," Journal of the History of Ideas, 32:163-184, 1971.

Divine, F, "Stoicism on the Best Regime," Journal of the History of Ideas, 31:323-336, 1970.

Edelstein, L,* "Motives and Incentives of Science in Antiquity," Scientific Change, ed. A.C. Crombie, (London, 1963), p. 15-41.

_____., "Recent Trends in the Interpretation of Ancient Science," Journal of the History of Ideas, 13:373-604, 1952.

Kramer, H.J., Platonismus und Hellenistische Philosophie, (Berlin, 1971).

Reiche, H., Empedocles' Mixture, Eudoxan Astronomy, and Aristotle's Connate Pneuma, (Adolf M. Hakkert, Amsterdam, 1959).

Reinhardt, K., Kosmos und Sympathie, (Muenchen, Beck'sche Verlagsbuckhandlung, 1926.)

Solmen, F.,* Aristotle's System of the Physical World, (Ithaca, N.Y., 1960.)

Tatarkiewicz, W., "Two Philosophies of Classical Art," Journal of Aesthetics and Art Criticism, 22:3-8 1963-4.

Witt, R.E., "The Plotinion Logos and its Stoic Basis," CQ, 25:103-111, 1931.