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THE POETICS OF NEW CRITICISM

Anjan K. Nath*

The school of New Criticism evolved as a reaction against the growing trend among literary circles to channelize literary criticism into the study of psychology, sociology, biography, ethics, or any one of the contemporary "extrinsic" schools of criticism. These extrinsic schools of criticism sought to consider a work of art in terms of a pre-conceived theory which they embody and not really interpret art as art, or literature as literature. For example, a work of art may be read as a commentary on the social and economic conditions of its period or as a propaganda for class-struggle. But these readings, according to the New Critics, do not justify our calling the work an art form; besides, as Ludwig Wittgenstein says in the *Tractatus Logico Philosophicus*, "everything we see could also be otherwise." The New Critics, basing their theory on a similar premise, therefore, reject "critical relativism" and treat a poem (or work of art) as a definite entity free from any sociocultural or psychological influence in which it is produced and seek to establish a poetics based on absolute standards and principles. The New Criticism, however, does not propound any new theory of criticism, but adds a new emphasis to a set of basic attitudes: what is the literary work; what are its shape and effect; how do these come about? Their main concern is with the search for the form necessary for an understanding of a piece of literary work.

Although the beginnings of the New Criticism can be traced to T. E. Hulme's and Ezra Pound's writings, the movement gained effect after I. A. Richards provided the theoretical basis on which the method of verbal analyses was established, and T. S. Eliot's writings and patronage provided the impetus for further development, so much so, that Douglas Bush comments:

The new criticism, the offspring of Mr Richards and Mr Eliot, has carried the marks of a mixed heredity, but it may be said to have reacted against historical, impressionistic, and moralistic approaches to poetry and to have concentrated upon direct and precise analysis of form and texture. The new critics' close reading of poetry has braced the flaccid sinews of this generation of readers and has had some highly beneficial effects upon teaching and writing.¹

The New Critics included the poet-scholar-teacher, John Crowe Ransom² and Robert Penn Warren, Allen Tate, Cleanth Brooks, R. P. Blackmur, and Yvor Winters. In this study, however, only a few representative critics of the school will be touched upon with a view of working out a "Poetics" of the New Criticism.

In *God Without Thunder*, John Crowe Ransom outlines the poetic attitude towards the natural object as one in which "we regard the endless mysterious fullness of this object, and respect the dignity of its objective existence after all-in spite of the am-

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bition to mastery that has become more and more habitual with us."³ This "objective" view of poetic imagination is the pivot around which the New Criticism revolves, and which Ransom advocates as being the key to the structure and meaning of literary work - a key that inevitably reveals itself as necessary to the experience of the work. He says:

. . . the first law to be prescribed to criticism, if we may assume such authority, is that it shall be objective, shall cite the nature of the object rather than its effects upon the subject Furthermore, we must regard as uncritical the use of an extensive vocabulary which ascribes to the object properties really discovered in the subject, as: *moving, exciting, entertaining, pitiful; great*, if I am not mistaken, and *admirable*, on a slightly different ground; and, in strictness, *beautiful* itself.⁴

This in a way reflects Wittgenstein's observation in the *Tractatus* where he says: "In the world everything is as it is, and everything happens as it does happen: *in* it no value exists - and if it did it would have no value."⁵ And that if there is value it must lie outside happening, since happening is merely accidental. Ransom's theory aims at providing a precision in a literary work without any value judgement except in terms of the work itself. In his lecture, "The Intent of the Critic" (1941), he is of the opinion that the business of the literary critic is exclusively with an aesthetic criticism.⁶ The aesthetic criticism, however, has been subject to some disapproval, notably among the more conventional critics like Douglas Bush, who contend that poetry is not read, any more than it is written, with the aesthetic intelligence only. Bush accuses the New Criticism of denying and evading some of its chief responsibilities:

. . . when Mr John Crowe Ransom declared in 1947 that "For twenty or twenty-five years we have lived with a kind of literary criticism more intensive than a language have ever known," . . . he overlooked the many centuries of classical education, which subjected poetry to the most rigorous scrutiny For a select though large number of literary students the new criticism has been an advanced course in remedial reading.⁷

Contemporary theories about the special language of poetry usually assert that poetic language transforms "real" emotion to art emotion.⁸ Ransom considers poetic language as an inhibition of ordinary language, as opposed to Coleridge's concept of poetic language being an elevation of normal language on a higher level. Ransom further, is concerned with the separation of "structure" from "texture" or "tissue of irrelevance," and his attempt of relieving the poet of complete responsibility for his creation by his theory of "determinate" and "indeterminate" factors.⁹ However, except for providing a repertory of technical jargon and thereby helping to sharpen

our critical tools, Ransom's theory leaves the critic with the time-honoured question of judgement of form and content and little else.

Mark Schorer, at the outset of his essay, "Technique as Discovery," points out that the principles of the New Criticism all derive from the central doctrine of the inseparability of form and content:

Modern criticism, through its exacting scrutiny of literary texts, has demonstrated with finality that in art beauty and truth are indivisible and one. The Keatsian overtones of these terms are mitigated and an old dilemma solved if for beauty we substitute form, and for truth, content. We may, without risk of loss, narrow them even more, and speak of technique and subject matter. Modern criticism has shown us that to speak of content as such is not to speak of art at all, but of experience; and then it is only when we speak of the *achieved* content, the form, the work of art as work of art, that we speak as critics. The difference between content, or experience, and the achieved content, or art, is technique.

[Where technique is everything and it] is the means by which the writer's experience, which is his subject matter, compels him to attend to it; technique is the only means he has of discovering, exploring, developing his subject, of conveying its meaning, and, finally, of evaluating it.¹⁰

This observation of Schorer's reflects I. A. Richards's concern with language and meaning. He says in "The Four Kinds of Meaning":

. . . Language - and pre-eminently language as it is used in poetry - has not one but several tasks to perform simultaneously, and we shall misconceive most of the difficulties of criticism unless we understand this point and take note of the differences between these functions. For our purposes here a division into four types of function, four kinds of meaning will suffice. [Sense, Feeling, Tone, and Intention]:

And,

. . . the *original* difficulty of all reading, the problem of *making out the meaning*, is our obvious starting point. The answers to those apparently simple questions: "What is a meaning?" "What are we doing when we endeavour to make it out?" "What is it we are making out?" are the master-keys to all the problems of criticism. If we can make use of them the locked chambers and corridors of the theory of poetry open to us, and a new and impressive order, is discovered even in the most erratic twists of the protocols . . .¹²

Richards's interest in language was almost Wittgensteinian in that to imagine a language meant to imagine a form of life. The early Richards was a classicist of the nervous system and in his *Principles of Literary Criticism* he maintains that the mind is a nervous system, and argues that the effect produced in the mind by a poem resolves

itself into two axes - the intellectual and the emotional. However, Richards's contribution to New Criticism lies in his theory of the "two uses of language." He distinguishes between the symbolic use of language in science and its emotive use in poetry, and argues that in the reading of a poem, the emotional aspect is more important as it is made up of the readers' interest and is the motivating factor, whereas the intellectual aspect (i. e. the thought process) has no relevance. From this we may deduce that the poet is not important for his ideas, but for his verbal competence only.

In his essay, "I. A. R. and the Concept of Tension," Cleanth Brooks observes that:

In the *Principles*, Richards had offered as a test for the quality of poetry its capacity to sustain the reader's ironic contemplation. The theory of context renders the utility of the test plausible. Exposure to irony reveals the price paid in order to achieve unity. For the ironic exposure amounts to other (and therefore necessarily different) contexts. It is at once disclosed that the unity of such a poem can be maintained only within its hothouse environment.¹³

Richards's criticism encouraged the close study of the texts and rigorous analysis of a poem. This forms the basis of his *Practical Criticism* - the results of his "laboratory technique" of experimentation, which were both interesting and disappointing. It was interesting in view of the varied responses he got to the poems - he records ten types of failures - ranging from "failure to understand the plain sense to sentimentality, inhibition, and doctrinal adhesions." And it was disappointing in view of the high objectives he had proposed: (i) to document "the contemporary state of culture;" (ii) to create a new kind of reading habit "for those who wish to discover for themselves what they think and feel about poetry;" (iii) to reform the teaching of literature.

Richards's failure in his experiment may be attributed to his desire to discuss poetry in terms of stimulus and response. In fact the main features of his theories are based on psychological explanations, not only of human consciousness, but also the nature of language and the progress of knowledge. Thus, Richards's theory of criticism differs from New Criticism except in the close study of a poem as a poem, the rigorous textual analysis of the lines, and the favouring of a style and tone that tended towards irony. Even so, Ransom in his essay, "The New Criticism," refutes Richards's theory on the grounds that "the emotive and the cognitive phases of poetic experience are not sufficient for the valid world view or realistic ontology which poetry should give us."

William Empson takes up where Richards seemed to be wanting and proceeds in his *Seven Types of Ambiguity* to illustrate the "substantial achievement" of semantic analysis. In his "Introduction" to Empson, David Lodge comments that:

Empson's virtuoso feats of explication set new standards for the close analysis

of poetry. His approach also tended to reinforce the shift in poetic taste initiated by Eliot and Pound, away from romantic poetry towards the metaphysical poetry of the seventeenth century, and to encourage the antihistoricism inherent in I. A. Richards's criticism. On these grounds, and perhaps because of his irreverent wit, Empson provoked hostility among more traditional critics, who charged him with many errors of scholarship.

. . . [In the *Seven Types of Ambiguity*] Empson is defending his concern with meaning in poetry against "the objection that the meaning of poetry does not matter, because it is apprehended as Pure Sound, and the objection that what really matters about poetry is the Atmosphere."¹⁴

Empson categorizes his "ambiguities" into seven types, representing "stages of advancing logical disorder", but they are not determinate in the sense that the types often overlap and the definitions, at times, tend to be arbitrary. He, for instance, defines the sixth type of ambiguity as "what is said is contradictory or irrelevant" and "the reader is forced to invent interpretations."¹⁵ Earlier, however, he tells us that an ambiguity is valuable "in so far as [it] . . . sustains intricacy, delicacy, or compression of thought, or is an opportunism devoted to saying quickly what the reader already understands."¹⁶ Empson's ambiguities, thus, extend beyond the poem and the poet to the reader and they speak of a psychological bias. He further says, "which class any particular poem belongs to depends in part on your own mental habits and critical opinions."¹⁷ The obvious inference, therefore, would be that Empson tends to classify poems in terms of the reader's response rather than in terms of the poems.

Though "the method of verbal analysis is the main point of the book," as he himself claims, Empson's interest in psychology makes him ask questions like: why would a reader of such and such a kind find this ambiguous? Did the poet put this in by design or inadvertence? It is probably due to these flaws that one of his reviewers, Mr James Smith, complained that, "Quite a number of Mr Empson's analysis do not seem to have any properly critical conclusion; they are interesting only as a revelation of the poet's, or Mr Empson's ingenious mind." And Douglas Bush, with his characteristic disregard for banality remarks: "When complexity and ambiguity have become a fetish, there seems to be no check upon interpretative irresponsibility except the limits of the critic's fancy. We might perhaps borrow a label for this sort of thing - the fallacy of misplaced concreteness."¹⁸

It is difficult to place Empson among the New Critics. He did not formulate any new technique of verbal analysis, but simply systematized it and added emphasis to terms like "ambiguity," "irony," and "tension." Empson's concept of ambiguity was essentially a refinement of Richards's "emotive" language, but the extent of its influence was particularly felt by the American New Critics such as Cleanth Brooks.

Much of the New Criticism which embody the "close reading of texts," brings

out the subtlety and complexity of meaning which a finely wrought poem can give. Cleanth Brooks, in *The Well-Wrought Urn*, analyses poems of different historical periods in order to arrive at the central idea of what essentially a poem is. He says that, "If we are willing to use imaginative understanding, we can come to know the poem as an object – we can share in the experience."¹⁹ And, "it is far more important to see whether generalisations proposed about the nature of the poem are really borne out by the poem itself."²⁰ Brooks elaborates upon this concept where he maintains that the main characteristic of a poem is in the peculiar handling of language and that this peculiarity lies in the ambiguities, ironies, and paradoxes of the poem, and that this view concerns all imaginative literature. He says:

We may approach the problem in this way: the poet has to work by analogies. All of the subtler states of emotion, as I. A. Richards has pointed out, necessarily demand metaphor for their expression. The poet must work by analogies, but the metaphors do not lie in the same plane or fit neatly edge to edge. There is a continual tilting of the planes; necessary overlappings, discrepancies, contradictions. Even the most direct and simple poet is forced into paradoxes far more than we think, if we are sufficiently alive to what he is doing.²¹

To search for these peculiarities in a poem, however, may seem to the reader to fit the poem to a Procrustean bed for paradox is usually considered as something intellectual rather than something emotional. But Brooks argues that paradox is the language appropriate and inevitable to poetry:

Paradoxes spring from the very nature of the poet's language: it is a language in which the connotations play as great a part as the denotation The poet, within limits has to make up his language as he goes.²²

And:

We have to ask the reader to become acquainted with the poet's language (using the term in its broadest sense). But it is important to note what the reader is *not* asked to do. He is not asked to give up his own meanings or beliefs or to adopt permanently those of the poet. It will be sufficient if he will understand the unit of the meanings with which the poet begins . . . and if he will so far suppress his convictions or prejudices as to see how the unit meanings or partial . . . meanings are built into a total context.²³

Thus, for Brooks, the emphasis on paradox is part of the search for the total meaning of a poem. Brooks sounds convincing, but he also betrays the metaphysical bias in his choice of poems for analysis. "In *Modern Poetry and the Tradition*, [he gives] the impression that nearly all poetry between Marvell and Pound [is] a mistake; and that impression, though avowedly unitted, is not quite effaced by *The Well-*

Wrought Urn, where the free play of Mr Brooks' fine critical faculty is hampered by the virtual identification of poetry with paradox."²⁴ The language of paradox, however, is "entirely characteristic of the New Criticism in seeking a formula or category with which to identify the special character of literary language -- and not only to identify but also to defend literary language as the medium of a special kind of meaning or knowledge, not accessible to science and scientific discourse."²⁵

R. P. Blackmur makes a bid to correct some of the excesses of Empson in his book *Language as Gesture*. His term is "gesture" -- "the outward and dramatic play of inward and imagined meaning . . . gesture is that meaningfulness which is moving, in every sense of the word: what moves the word and what moves us."²⁶ He is interested in "the created or dead-end symbol" where the meaning of the word (symbol) is controlled only by its context, and "it is not at all the meaning the words [have] that counts, but the meaning that repetition, in a given situation, makes them take on."²⁷ Lee T. Lemon succinctly sums up Blackmur's theory thus:

. . . the poet, by varied preparation, builds up to a climactic moment, but, once reached, it makes no difference what words he uses. Fortunately, before twenty pages have passed, Blackmur has his theory safely tucked away and once more shows himself to be among the best of our practical critics. Despite his renegeing on his special theory, he holds on to the notion of closed form somewhat longer.²⁸

From Blackmur's theory we see that the New Critics concerned themselves with "precision and tightness" in a literary work -- they insisted upon a work's containing everything necessary for its interpretation.

Though belonging to the school of New Criticism, Yvor Winters marks a point of departure from the New Critics in that his criticism goes against some of their accepted doctrines. To him, a poem has two major aspects -- "the rational structure" or paraphrasable contents, and the feeling which is largely paraphrasable. He maintains that both features are simultaneously present in a work of art and insists that analysis of literary works must rest on a belief of the acceptance of truths and values and that it is the duty of the writer to approximate these truths in so far as human fallibility permits. A poem is successful if it displays a proper adjustment of feeling and content to a definable rational frame.²⁹ In *The Function of Criticism*, Winters outlines his theory thus:

Poetry, as nearly as I can understand it, is a statement in words about a human experience In each work there is a content which is rationally apprehensible and each work endeavours to communicate the emotion which is appropriate to the rational apprehension of the subject. The work is thus a judgement, rational and emotional of the experience, i. e., a complete moral judgement in so far as the work is successful.³⁰

The New Criticism, it cannot be denied, has brought a new sophistication to the analysis of form, texture, and imagery and has sharpened our perceptions. Starting from the premise that "A poem must not mean/But be" (Archibald MacLeish, "Ars Poetica"), in emphasizing complexity and ambiguity, and yet denying that a poet cannot mean merely what he appears to mean, the critics lead us to a world of meanings, allusions, and overtones that they can force into the texts. In this regard Northrop Frye offers us valuable criticism:

. . . The only weakness in this approach is that it is conceived primarily as the antithesis of centrifugal or "background" criticism, and so lands us in a somewhat unreal dilemma, like the conflict of internal and external relations in philosophy. Antitheses are usually resolved, not by picking one side and refuting the other, or by making eclectic choices between them, but by trying to get past the antithetical way of stating the problem. It is right that the first effort of critical apprehension should take the form of rhetorical or structural analysis of a work of art. But a purely structural approach has the same limitation in criticism that it has in biology.³¹

And Douglas Bush, in the same strain adds:

However valuable the process and results of the new criticism, for some readers its preoccupation with technique, its aloof intellectuality, its fear of emotion and action, its avoidance of moral values, its dislike of "impure" poetry (which includes much of the greatest poetry we have), all this suggests the dangers of a timid aestheticism. Since poetry does after all deal with experience, the most fastidious critics have to touch on it, yet they may give the impression that they are looking, not at human beings, but at specimens mounted on slides. Indeed, though the critics have censured scholarship for aping science, their own aims and methods seem more deserving of the charge Technical aesthetic criticism is of course very important, but it becomes a circumscribed end in itself, it is equivalent of the scientist's escape from life into the laboratory.³²

R. P. Blackmur says that "all our new knowledges [sic] . . . have come out as techniques for finding trouble in ourselves and in the world," but how far this view can be objective is a moot point. Denis Donoghue, however, advocates the cause for an "ordinary universe", and it is only fitting that we give him the last word:

In the third book of *De Oratore* Cicero rebukes Socrates for trying to separate wisdom from eloquence. Men like Themistocles brought their minds into the arena and spoke there with skill, but Socrates turned away, driving a wedge between rhetoric and philosophy. "Hence arose a distinction between the tongue

and the heart, a distinction entirely absurd, useless and reprehensible; as if some would teach us to be wise, and others would make us eloquent." The argument has often been impugned, and yet a direct relation between the tongue and the heart is dearly to be wished. The spirit of modern criticism is Socratic in this respect; if for "heart" we read values, attitudes, motives, choice, preference, commitments; and for "tongue", speech, literature, the artifact, "the poem itself." With Pater we separate the moralist from the poet, for ease and perhaps for peace. With Eliot we separate the man who suffers from the writer who creates, and both from the poem, the verbal icon, the well-wrought urn. These separations have eased our professional lives, and we are furtively grateful to those who sponsored them.³³

Notes

1. Douglas Bush, "The New Criticism: Some Old fashioned Queries," *PMLA* 64 (March 1949), pp. 13-21.
2. The name "New Criticism" was adopted after Ransom's use of that title under which four leading critics were studied. This system of criticism is also known as "Ontological Criticism" and "Formalistic Criticism."
3. John Crowe Ransom, *God Without Thunder* (London: Howe, 1931), p. 129.
4. John Crowe Ransom, "Criticism Inc.," *20th Century Criticism*, David Lodge (ed.), (London: Longmans, 1972), p. 235.
5. Ludwig Wittgenstein, *Tractatus Logico Philosophicus* (London: Kegan Paul, Trench, Trubner, 1922), p. 182.
6. John Crowe Ransom, "The Intent of the Critic," in *20th Century Criticism*, Ed. David Lodge (London: Longmans, 1972).
7. Douglas Bush, op. cit. . .
8. Lee T. Lemon, *The Partical Critics* (New York: Oxford University Press, 1965), p. 118.
9. John Crowe Ransom, *The World's Body* (New York: Charles Scribner's Sons, 1938), p. 349, as referred by Lee T. Lemon, op. cit., p. 119.
10. Mark Schorer, "Technique as Discovery" (*Hudson Review* 1 Spring, 1948), p. 67.
11. I. A. Richards, "The Four Kinds of Meaning," in *20th Century Criticism*, David Lodge (ed), p. 116.
12. *Ibid.*, pp. 115-116.
13. Cleanth Brooks, "I. A. R. and the Concept of Tension," in *I. A. Richards: Essays in His Honor*, (eds.) Reuben Brower, Helen Vendler, John Hollander (New York: Oxford University Press, 1973), pp. 135-56 [152]
14. David Lodge, op. cit., pp. 146-47.
15. William Empson, *Seven Types of Ambiguity* (London: Chatto and Windus, 1930,

- rpt. 1961), p. 223.
16. Ibid., p. 202.
 17. Ibid., p. 73.
 18. Bush, op. cit., p. 19.
 19. Cleanth Brooks, *The Well-Wrought Urn* (New York: Harcourt, Brace, 1947), p. 75.
 20. Ibid., p. 126.
 21. Cleanth Brooks, "The Language of Paradox," in *20th Century Literary Criticism*, p. 296.
 22. *The Well-Wrought Urn*, p. 166.
 23. *The Well-Wrought Urn*, p. 252.
 24. Bush, op. cit., p. 18.
 25. Lodge, op. cit., p. 291.
 26. R. P. Blackmur, *Language as Gesture* (New York: Harcourt, Brace, & Co., 1952), p. 6.
 27. Ibid., p. 13.
 28. Lemon, *Partial Critics*, p. 136.
 29. A. G. George, *Critics and Criticism*, p. 167.
 30. Yvor Winters, *The Function of Criticism* (London: Routledge and Kegan Paul, 1957: rpt. 1967), p. 81.
 31. Northrop Frye, *Anatomy of Criticism* (New York: Atheneum, 1966), p. 82.
 32. Bush, op. cit., p. 20.
 33. Denis Conoghue, *The Ordinary Universe* (London: Faber and Faber, 1968), p. 16. The reference from *De Oratore* is: Cicero, *De Oratore*, edited by A. S. Wilkins (Oxford: Clarendon Press, 1892), III, p. 32.

新評論的文學理論

Anjan D. Nath*

在二十世紀的文學界中，文學評論有種趨勢：專注於心理學、人類學、社會學、傳記文學、倫理觀，或者其他任何一種現代非本質學派（extinsic schools）思想的研究。這些非本質學派的評論，是嘗試用一種預想的理論，去了解一件藝術作品，而且不把藝術解釋成藝術、文學解釋成文學。

新評論派發展成一種反對這趨勢的力量，他們的基本辯則是：潮流所謂以個人專門所學去批評藝術的理論，不能做為我們對藝術作品的評估。

他們拒絕所謂的「批評相對論」，而主張當面對一首詩或文學作品時，把它看作一件完全獨立的實體，不受任何社會文化或心理的影響，而企圖建立一種以絕對的標準及原則性的文學理論。

無論如何，新評論派並沒有提出任何「新」的批評理論。但却在一些基本態度上加入「新」的重點。他們主要關心的是了解一篇文學創作所必須有的形式。

部分作者及其支持者在這篇研究報告裏，提出了一個基本價值觀及他們對於如何求得結構嚴密的文學理論的先見。

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PARAMETERS OF MEANING IN VERBAL FOCUS

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ABSTRACT

The notion of verbal focus in Philippine languages is examined both from an historical perspective and in light of problems inherent in the traditional view. Suggestions are made for a more accurate understanding of the phenomenon. In order to find out more about focus, and to check the feasibility of the proposed solutions to problems in the traditional concept, a particular use of focus is examined. The results of a study which elicited focus choice in the answering of ANIA (what) questions in Ilokano (a northern Philippine language) are presented. The answers of the two groups of respondents, native speakers of Ilokano and native English-speaking students of Ilokano at the University of Hawaii, were compared and found to differ substantially. Reasons for the differences and strategies employed by each group in answering are postulated. The results of the study are applied towards a further understanding of object focus in Ilokano and to the representation of meaning by focus systems in general.

Ever since the turn of the century, linguists have been acutely aware of certain similar properties of the verbal systems of various Philippine languages. These early researchers were concerned with describing the languages completely while avoiding any preconceived notions of their similarity with other languages. Bloomfield's early (1917) work on Tagalog, as well as those that followed, was taxonomic and not concerned with generation of the forms described. The verbal systems were delineated as paradigms, wherein certain verbal affixes were ascribed the role of indicating the relationship between the topic and complement of the sentence. The nature of this relationship was thought to be a kind of voice indication, with a major division between active and passive voice indicating forms. The passives were further divided into object, instrument, and location indicating forms. Over the years, different linguists describing different languages have changed the number and names of the "focus types," but Bloomfield's work has heavily influenced later work on Philippine languages.

In addition to describing the verbal affix systems of the languages analysed, there were a number of concepts expressed either explicitly or implicitly in these early works regarding the nature of the "focus" relationship (as the relationship between the topic and complement of a verbal sentence has come to be called). Each affix was thought to invariantly indicate a particular semantic, or case, relationship between the verb and topic of the sentence. So the descriptions of the verbal system would list the various affixes found in the language in question and ascribe semantic interpretations to them.

The interpretation of the case indicating role of the affixes was that a particular

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affix would focus the attention of the hearer on a particular element in the sentence. This element, preceded by a topic-marking particle, would become the central element of the sentence semantically; the element which the speaker deemed the most important of the sentence, and which would "capture the attention" of the hearer.

Moreover, it was felt that any element which can be highlighted semantically (i. e. actor, object, location, instrument, benefactor) could be brought to attention (brought "into focus") by the simple manipulation of the sentence's word order and the use of the appropriate verbal affix. An example of this so-called sentence convertibility in Tagalog can be seen in Blake (1906):

The sentence "he looked for the book with the light of the room" may be expressed in four different ways according as the agent, the object, the instrument or the place, are specifically emphasized.

If the idea is "he, and no one else, was the one that did the looking," the active of the verb would be used with the agent as subject, e. g. *Siya ang hungmanap nang libro nito-ng ilaw sa silid.*

If the book is uppermost in the mind of the speaker or writer, the book, the object of the action is made the subject of the "in-" passive, e. g. *Ang libro ay hinanap niya nito-ng ilaw sa silid.*

If the idea is that "this light, and no other" was used, the light, the instrument of the search, stands as the subject of the "i-" passive, e. g. *Ito-ng ilaw ay ihinanap niya libro sa silid.*

If the idea is that "the room and no other place" is where the search was made, the room is made the subject of the "an" passive, e. g. *Ang silid ay hinanapan niya nang libro nito-ng ilaw.*

There are some problems with the concept of focus presented above, and before we can try to better understand what focus is, we must determine what it is not. The descriptions of focus by Blake, Bloomfield and the linguists they influenced were logical and tidy, but inaccurate. In the first place, the categorization of affixes into focus types was arbitrarily done (that is, the names given to the focus types were not the only ones which could have been given them, and categorization could have been very differently approached,) but the systems devised by the early writers, especially Bloomfield, heavily influenced future thought on the matter. The problem is related to the notion of a one-to-one correspondence between affix and case relationship. The describers of a Philippine language would list the affixes occurring in the language and ascribe the name of one of the focus types to each. Each focus type, hence each affix, was supposed to represent a particular case relationship in the sentence.

The fact is that there is no simple one-to-one relationship between affix and case. There is considerable overlap. For example, the *i-* verbal affix indicates either

goal, instrumental or benefactive focus in Ilokano. Also, more than one affix is used to indicate actor focus in Tagalog. These affixes do not occur in free variation with all verb roots; certain verbs can be inflected with certain affixes, while others cannot cooccur. It is because of these cooccurrence restrictions that simple sentence convertibility such as was described by Blake is not always possible. Lexical restrictions on verb roots also exist which prohibit certain combinations of verb and focus type.

This leads to another weakness of the historical descriptions; that they do not account for the generation of verbal sentences wherein focus choice is a necessity. They are essentially lists of affixes which have been equated with focus types.

Lastly, although affix use is clearly related to some sort of case relationship in the sentence, this relationship is not focussing the attention on a particular element. For example, let's examine two actor focus sentences in Ilokano:

1) Nagluto ti adobo idia y balayna.

COOK MK STEW LOC. HOME HER/HIS

She (or he) cooked stew in her (or his) home.

2) Nagtudo idia y Laoag.

RAIN LOC. (NAME OF A CITY IN NORTHERN LUZON)

It rained in Laoag.

The actors or agents are not clearly emphasised in these sentences. In fact, sentence number two is commonly called agentless. The case relationships between the verb and other elements differ in each sentence, despite the fact that both have actor focus verbs and even use the same affix. The idea that particular affixes are used in order to focus the attention of the hearer on a particular sentence element thus appears to be an ad hoc semantic interpretation of a syntactic phenomenon - a bit of mentalism which crept into the structuralist descriptions of these verbal systems.

If we reject the traditional concept of focus described above, what then, can we take focus to be? Firstly, we should view verbal affixes as surface level phenomena. We must postulate an underlying semantic level of case relationships which correspond imperfectly with occurrence of particular affixes. In this way we avoid the equation of affixes with focus types. The relationship between this underlying semantic level and the particular affix forms is far more complex than the one-to-one relationship implied by structuralist taxonomies.

To understand these relationships more clearly, a number of other factors must be taken into account; namely, (1) restrictions of verb root/affix cooccurrence (perhaps a lexical feature), (2) semantic relationship between topic and complement in a given sentence (not simply labeling it as a product of the focus type ascribed to the affix), and (3) lexical properties of verbs which govern appropriateness of focus relationships.

The above solutions for the problems inherent in the traditional view of focus

are general and somewhat vague. It may be instructive to examine a particular example of focus use to see whether these objections to the structuralist model hold for it, and to examine more closely the nature of the case relationships expressed by the focus system. The analysis of a narrow example of focus use may give us some applicable information about the nature of focus in general, and about how case relationships are expressed by it. As every language may be presumed to have underlying case relationships expressed somehow in its syntax, and as these semantic relationships may be universal at a certain level, such a study may be interesting to the study of language in general.

To this end, a study was conducted involving 18 native speakers and students of Ilokano, a northern Philippine language, (which is closely related to Formosan languages spoken by Aborigines on Taiwan) attending the University of Hawaii. They were presented with a questionnaire of 15 questions in Ilokano; 10 ANIA (what) questions and 5 SINO (who) questions with cued answers in parentheses appearing after each question. Their task was to answer the questions in full sentences using the cued answers. The task was somewhat contrived, since answers to such questions in normal speech would tend to be simply expressed by the answer without repeating the whole sentence, including verb. However, it was felt that despite the unnatural nature of the task, it was an acceptable way to elicit focus choice from the respondents. The questions were purposely devoid of context. This may have made focus choice in the answers difficult to make for the respondents, but it was done to try to elicit the first reading or preferred response to the questions.

Respondents classified themselves as either native (NL) or nonnative (NN) speakers of Ilokano. The 10 NNs were all native speakers of English and students of Ilokano attending classes at various levels at the University of Hawaii, while the 8 NLs were students or faculty members in various departments at the same university.

The directions accompanying the questionnaire stated, in English, that the questions were to be answered in complete sentences using the supplied word in parentheses appearing after each question. Other than supplying meanings of unknown lexical items occurring in the questions, the administrators of the exercise did not offer further assistance to the respondents. Since the exercise sought to examine the focus of the verbs in the answers to ANIA questions, the SINO questions were not analysed. Responses to ANIA questions were analysed in two ways. Firstly, each respondent's answers to all ANIA questions were considered, and an overall percentage of object focus (OF) and actor focus (AF) responses for both NNs and NLs was calculated (fig. 1, 2). Secondly, responses to each question were viewed, and percentages of AF and OF answers for each question calculated for both groups of respondents. The NL and NN responses to each question were compared (fig. 3, 4 and 5).

There were substantial differences in the way the two groups answered the questions. Native Ilokano speakers' answers were mixed between AF and OF, tending slightly toward a preference for AF forms, while non-native speakers overwhelmingly

tended to choose OF forms in their responses. These results raise interesting questions as to why such a difference should exist. What caused NNs to choose OF forms when NLs did not? What kind of strategies were respondents employing to make their choice of focus? What do the results tell us about object focus in Ilokano and about focus in general?

A consideration of the underlying semantic relationship between topic and complement in the questions, and the one called for in the answers is central to explaining the differences in responses. It has already been argued that focus of attention is not the relationship marked by object focus forms. Instead, the forms seen to be representing a notion of specificity or definiteness. The following examples taken from a beginning Ilokano textbook point to this interpretation: (Espiritu 1983)

Compare the following actor focus verbs with their patient focus counterparts. Notice that the difference in English is only in the patient; the patient of an actor focus verb is indefinite. The patient of a patient focus verb is definite.

- | | |
|----------------|--|
| actor focus: | Agbuyaak ti programa.
I'll watch a program. |
| patient focus: | Buyaek ti programa.
I'll watch the program. |
| actor focus: | Mangalaak ti prutas.
I'll get some fruit. |
| patient focus: | Alaek ti prutas.
I'll get the fruit. |

All verbal ANIA questions contain OF verbs. So focus choice in formulating ANIA questions is very easy; OF forms should be used 100% of the time. However, NLs responses show that such forms are not invariably called for in answering ANIA questions. If they were, then the native speakers would have overwhelmingly chosen them in their answers.

Presumably, context plays a major role in determining how specific the answer to an ANIA question should be. This would explain the mixed responses to the non-contextualized questions. The tendency towards using AF forms in responses by NLs indicates that perhaps in a non-contextualized environment, an indefinite response is most often assumed to be called for by the question. The AF form is neutral, and context signals the shift to OF if necessary. At the very least, we can say that NLs do not necessarily assume that their answers should be definite.

On the other hand, one reason for the overwhelming choice of OF forms by NN respondents may be that they had failed as yet to completely internalize the notion of definiteness and how it is represented by OF forms. So while NLs tended to assume that the answers called for in the questionnaire should be indefinite, NNs assumed that their answers should be definite, and answered using the appropriate OF forms.

There may have been other factors influencing NN responses. These may have been surface-level considerations, and perhaps at least partially caused by the eliciting device. The contrived nature of the task gives it a somewhat pattern practice-like nature, and students used to such drills may have tended to carry the verb form of the question into the answer, using the cued answer without considering the appropriate level of definiteness required.

Also, other "wh" questions in Ilokano (i. e. SINO (who) questions) are more likely to carry the focus of the verb in the question into the answer. Non-native speakers may have been thinking about those forms and overgeneralizing that tendency to include answers to ANIA questions.

Although the above discussion of the strategies employed by the respondents in formulating their answers is speculation at best, the study does shed some light on the nature of object focus in Ilokano, and consequently on focus in general. Clearly, the notion of "focus of attention" does not seem to be a reality in this use of object focus. If we try to explain OF in these terms, then it is incomprehensible that a native speaker would answer an OF ANIA question with an AF verb most of the time.

The results also support the possibility that definiteness is an important semantic factor in OF use. This would at least partially explain the mixed responses by NLs to the questions. Their non-contextualized environment forced the NLs to read into the questions the amount of definiteness called for. The uneven distribution of OF answers by the NLs is not arbitrary, however, and this supports another of the speculations about focus expressed in the arguments against the traditional structuralist interpretation. Certain verbs seem to give NLs more clues than others and make them choose OF forms in their answers (i. e. questions 6, 7, 8, and 10). This may be the result of the postulated lexical properties of verbs which govern the appropriateness of focus relationship.

As the elicitation device used in this study may have influenced the results obtained, repetition of this kind of experiment done with contextualized questions - and a different kind of questionnaire would be instructive. A less contrived way to elicit focus could be employed, perhaps by the use of a written text or narrative with the verbs in question deleted and cued by their roots. Eliciting native speaker intuition to have them explain their choices would also be helpful. The contextualization could be done so that "limits of specificity" could be explored, and other factors, such as influence of the newness of information could also be dealt with. The resultant information could contribute to improved understanding of the representation of case relationships by verbal focus systems.

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Figure F-1

I. Non-native learners of Ilokano (NN)

Number of responses are out of 10, unless otherwise noted.

Responder	N.OF responses	% OF respon.	N.AF respon.	% AF respon.
NN1	10	100%	0	0%
NN2	8	80%	2	20%
NN3	2(of 8)	25%	6(of 8)	75%
NN4	10	100%	0	0%
NN5	10	100%	0	0%
NN6	10	100%	0	0%
NN7	10	100%	0	0%
NN8	10	100%	0	0%
NN9	3	30%	7	70%
NN10	10	100%	0	0%
Median		100%		0%

Figure F-2

II. Native Speakers of Ilokano (NL)

Responder	N OF responses	% OF respon.	N.AF respon.	% AF respon.
NL1	2	20%	8	80%
NL2	4	40%	6	60%
NL3	10	100%	0	0%
NL4	4	40%	6	60%
NL5	0 (of 2)	0%	2 (of 2)	100%
NL6	6 (of 7)	86%	1 (of 7)	14%
NL7	5	50%	5	50%
NL8	10	100%	0	0
Median		45%		55%

Figure F 3

Non-native learners (NN) - answers out of 10 unless otherwise noted.

Sentence N.	N. OF Answers	% OF Answers	N.AF Answers	% AF Answers
1	8	80%	2	20%
2	8	80%	2	20%
3	7	70%	3	30%
4	8	80%	2	20%
5	9	90%	1	10%
6	9 (of 9)	100%	0	0%
7	8	80%	2	20%
8	9(of 9)	100%	0	0%
9	8	80%	2	20%
10	9	90%	1	10%

Figure F-4

Native Speakers (NL) - Answers out of 7 unless otherwise noted.

Sentence N.	N.OF Answers	% OF Answers	N.AF Answers	% AF Answers
1	2	29%	5	71%
2	3	43%	4	57%
3	3	43%	4	57%
4	4	57%	3	43%
5	2	29%	5	71%
6	6	86%	1	14%
7	7	100%	0	0%
8	5	71%	2	29%
9	4	57%	3	43%
10	5 (of 6)	83%	1	17%

Figure F-5

Sentence #	% Answers in OF		% Answers in AF	
	NN	NL	NN	NL
1	80%	29%	20%	71%
2	80%	43%	20%	57%
3	70%	43%	30%	57%
4	80%	57%	20%	43%
5	90%	29%	10%	71%
6	100%	86%	0%	14%
7	80%	100%	20%	0%
8	100%	71%	0%	29%
9	80%	57%	20%	43%
10	90%	83%	10%	17%

ANIA QUESTIONS

1. Ania ti ginatangmo idia'y Ala Moana ? (sapatos)
WHAT MK PAST BUY YOU LOC SHOES
(What did you buy at Ala Moana Shopping Center ?)
2. Ania ti kanen ni Juan idia'y restauran ? (adobo)
WHAT MK EAT MK JOHN LOC RESTAURANT STEW
(What does John eat at the restaurant ?)
3. Ania ti linuto ti kabsatmo idi kalman ? (lumpia)
WHAT MK PAST COOK MK SIBLING YOU YESTERDAY SPRING ROLLS
(What did your sibling cook yesterday ?)
4. Ania ti isuratmo para kenni Maria ? (daniw)
WHAT MK WRITE YOU FOR OBL MARY POETRY
(What do you write for Mary ?)
5. Ania ti binuya da Joe ken Maria iti TV idi rabii (M*A*S*H)
WHAT MK PAST WATCH JOE AND MARY OBL LAST NIGHT
(What did Joe and Mary watch on TV last night ?)
6. Ania ti inlakom ? (karro)
WHAT MK PAST SELL YOU CAR
(What did you sell ?)
7. Ania ti inumen ni Rosie ? (serbesa)
WHAT MK DRINK MK BEER
(What does Rosie drink ?)
8. Ania ti birbirokem ? (kuarta)
WHAT MK SEARCH YOU MONEY
(What are you searching for ?)
9. Ania ti adalen ni manangmo ? (Ingles)
WHAT MK STUDY MK OLDER BROTHER YOU ENGLISH
(What is your older brother studying?)
10. Ania ti kantaenyo iti programmatayo ? (Pamulinawen)
WHAT MK SING YOU OBL PROGRAM OUR NAME OF A SONG
(What will you sing at our program ?)

「動詞選用法則」所代表的意義

James E. Martin*

本文從語言演變史的觀點，及傳統根深蒂固對語言的看法，來探討菲律賓語系中對選用動詞的概念，並提出作者獨特的見解。爲了進一步了解此種動詞的用法，並探測作者所提建議是否可行，其實驗方法爲收集學生在用「伊落卡諾語」(Ilokanano) (菲律賓北部方言)，回答 what 的問句時，所選用的動詞。在夏威夷大學中，以伊落卡諾爲母語的學生及母語爲英語者作比較時，由說伊落卡諾語的學生的答案中，發現兩組學生所用的動詞有明顯的差異。產生此種差異的原因及兩組學生所選用的動詞，都在此本中分別討論到。此次研究結果，有助於進一步了解伊落卡諾語中，是否受詞影響動詞的形式；亦有助於了解此種「動詞選用法則」所代表的一般意義。

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說明認同的新史學——錢穆“國史大綱”的史學功能

胡 昌 智

摘 要

- 一、前 言
- 二、國史大綱的敘述性與提供認同的功能
- 三、認同的問題與經世思想
- 四、結 語

一、前 言

“經世”這個概念在翻譯成外文時，有其困難。這項困難顯示出這個概念涵蓋面的廣大：對現存的社會、國家及世界秩序有任何肯定或否定的態度，都能被這個概念所包涵。在內容上張灝教授及劉子健教授都把經世分成三個部門：道德、制度及事功。藉著這三個部門，他們建議，處理傳統學者的經世思想時，將它們分類，並放置於一定的位置中加以瞭解。這一個內容分類法，有它多面的用處；尤其是經世思想的派別可以因此而清晰的呈現出來，其演變也能因此而有效地掌握。

傳統的經世思想——尤其是史學的經世思想——在內容的差異上，也許其形式是一致的：不管經世學者三個層面中的那一個層面出發，也不管他們對世界秩序的看法各如何，他們所提出的，可以說都是人們——預定的讀者——應該遵行的、具體的行為條規及人事的原則。一條條的行為規範及人事原則可以在制度層面中提出，也可以針對君主道德修養，或針對官僚實際的政務而提出。明顯的例子是，司馬溫公藉著“資治通鑑”，說明歷代君主用人賞罰之得當與否，進而提出君主在不同情況下，該遵守的不同條規，以及揭櫫君主應有的仁、明、武等道德原則。顧炎武以一切秩序的本源在於風俗道德。風俗要淳厚，君主、宰相及地方官都有責任；而且必須依照一定的規範去做。日知錄條記的事項，大體均各自呈現一項行為準則。晚清龔自珍解經時，論及官僚人員、師儒及人君，在據亂世、升平世、太平世各應做的事，他也提出一條條的規範。

劉子健教授在經世思想研究的建議中談到，經世思想可以用解經的方式來表達，或用心性哲理的論述方式表達，或用歷史研究加以呈現。不管那一類材料——尤其是歷史事件方面的材料——其目的不外使其讀者知道在某特定的狀況下，該如何舉止，以及知道自己如此行為的意義何在。“歷代名臣奏議”、“經世文編”、“資治通鑑”以及“通鑑綱目”等書的經世方式，我們似乎都可以這樣加以瞭解。

我們這樣粗略的提出傳統史學經世思想及史學功能的共同性質，目的是要顯示，二十世紀初

年形成的一部史學作品——錢穆的“國史大綱”^①——在經世思想的表達方面，有了很大的變化。“國史大綱”影響讀者行爲的方式已經不再是藉著史事說明具體的行爲規範、不再說明具有超乎時空限制特性的人事原則。它從說明讀者他們是什麼人，他們的特色、能力及環境，也就是說，它從說明別人的認同（Identity）^②去影響別人的行爲。

事實上，要影響一個人價值導向性（normative）的行爲，除了替他標立一條條的行爲規範以外，也確實可以藉著說明他的處境，達到目的。因為，一個人的社會行爲，最終而言，沒有不是根據他對處境的瞭解而展開的；而且，處境的說明及瞭解也恒具有價值導向的性質；不同的人對他們共同的處境會有不同的描述。因此，一個人替別人說明他們的處境時，他已經把他的價值觀參雜於其中，傳達給了對方，指示了對方一個行動的方向。如果對方接受前者所瞭解及陳述的處境，他的行爲將受其導引。

處境（situation）這個詞我們可以把它區分爲某人生活的外在條件、結構的一面，以及個人內在特質、能力的一面。處境的說明可以用歷史的材料，從這兩個方面展開。人們生活結構的特色可以藉它形成的過程加以說明；同樣的，人們的特質及能力，也可以藉著它在時間過程中的發展而指出。

用歷史的過程來說明國人的處境，是“國史大綱”的特色。從這個特色而言，我們可以說，“國史大綱”以一種異於傳統史學的方式，展現它經世的功能。它異於編年史、類書、劄記體、以及正統紀傳體史書的經世方式；因為它敘述一個與當時處境相關的發展過程。它敘述特定的一個發展過程，它有一個一貫的主角及主題，並且有很非明顯的因果關聯的說明。我們可以稱它爲一部敘述性（narrative）的歷史作品；因為“敘述性”（“narrativity”）這詞在 Arthur Danto 嚴格的定義之下，正是指有一定主體（Subject，或稱主詞），以及有因果關聯的一連串事件，共同表達出的特色。^③

錢穆“國史大綱”脫離傳統史學經世的方式，而以說明國人的認同，展現其經世的功能。這個論點，我們可以從該書的敘述性方面加以說明。

二、“國史大綱”的敘述性與提供認同的功能

民國廿年錢穆任教於北大時，他無疑是被認爲是政治態度偏向保守的教授。他所以要開的“中國政治制度史”在當時曾遭遇阻力。^④歷史系或認爲中國歷史政治史即專制帝王史，這種歷史於民國時代已不值一提，更不得宣揚其中之精神。政治上採取保守態度的錢穆，爲的是要保存某些中國政治人物的價值觀。在對歷代政治現象的看法方面，他承襲宋儒，以及明清以下學者的看法。雖然他在對歷史事件的看法上與傳統學者有相近之處：認爲某些特定的歷史事件有其歷史意義，接受這些事件，視之爲國史中的基本事實，而未嘗以全新的觀點採用其它史料，譬如有關民間法律意識、經濟活動、商業組織等方面的資料；但是，他把傳統儒家學者所整理出來的歷史現象放在一個完全不同的結構之中。這點是他的史學特色之一。

他在內容上有時候完全接受傳統學者所賦予了意義的歷史事件。不同的是，錢穆沒有將那些事件視爲是顯示各別行爲規條的例子。相反的，他將它們放在一個發展的過程中，賦予它們發展上的地位及意義。從歷史思考的觀點說，他不是保守的，他明顯的拋棄了舊史學以事例提供行爲條規的歷史思考方式。

錢穆敘述宋代史事時，借用“日知錄”的「御試黜落」條。顧炎武記宋代在仁宗以前的殿試

屢有黜落，可以有累經省試取中，而被擯棄於殿試者。「自張元以積忿降元昊，爲中國患…嘉祐二年詔，進士與殿試者皆不黜落…。」顧炎武提出這段事例的原因，是要用以爲戒鑑，視此決定爲因噎廢食，不可爲法。錢穆引用“日知錄”原文，但是把進士御試例不黜落放在宋代冗吏形成的過程中，視其爲原因之一；而冗員之形成，在“國史大綱”中更進一步要說明宋代變法則政制之發展。

同樣的情形，趙翼“廿二史劄記”之「宋制祿之厚」條也被錢穆說明宋代冗吏時所採用(385)。趙翼以劄記方法歸納出「宋制祿之厚」，所擬擷取出的意義是：「此宋制之不可爲法者也」。趙翼提出歷史事實，其目的在說明政府用人時之規則。錢穆完全採用這段歷史事實；但是，却將它放在宋代冗員加上厚祿造成的財政困難，以及繼之而起的變法，這樣一個過程中。

王夫之在“宋論”中評論的史實，亦爲“國史大綱”所採用。王夫之論及北宋諫官與宰相爭執的故事。他所要藉以說明的是一項他所認爲不變的政治原則，以及設立政治制度時應該遵循的一些條規。他說：「聖人樂聞於天下之言，而惡天下之以言爲尙。」“聖人”一詞之使用，目的在，確立該文句中，所提出的行爲規範的正當性。「不要以言爲尙」即此規範。以現代的話說，即：「不要爲批評而批評，這個目的設立制度」；諫官的設置，正是走到以言爲尙之制。王夫之在這段史實中所欲闡明的，用他的話說，即「治道」之一^⑥。錢穆採用同樣的史事，因襲其文字；然而，這段史實之於他，不因呈現行爲法則而具有意義，它的意義來自於它在一段發展過程中的地位。北宋宰相之與諫官相互爭執於朝廷，在“國史大綱”中被安排在缺乏決策力的政治特色的形成過程中。

錢穆襲用趙翼“廿二史劄記”之「明初文人多不仕」及「胡藍之獄」兩條中的文字。趙翼以明太祖「猜忌好殺」人君不德的故事，反襯出人君應有的德行^⑦；錢穆却無意要用它們說明任何規範。它們是被放在「傳統政治之惡化」這樣的題目下，加以敘述的。「惡化」是一個變化的過程；「明初文人多不仕」以及「胡藍之獄」的意義在於它們呈現一種發展過程。

事實上，錢穆呈現歷史事實的意義的方法，正是把它們連結成一個過程，在過程的轉承角色中，獲得其意義。“國史大綱”的體裁雖然是傳統的綱目體；但是，錢穆將綱目體很明顯的轉換成爲敘述脈絡的工具，而脫離了傳統綱目體條列的性質。各綱所列舉的事實不再是自成一個道德教訓的單元；相反的，它們前後相承，有其關聯性。如果我們細察“國史大綱”綱中的文字，可以輕易發現，它們包含著大量因果解釋(causal)、連結時間前後事件的用詞。各條高出目文一格的綱文，其根本的性質，在於前後發生的事件的聯結。

在綱文中，他最常使用的連接詞是「因此」；譬如：「因此宦官逐漸驕橫跋扈」(484)、「因此元代稅收有撲買之制」(459)、「蒙古人的倒退政治，到底不能成功，因此社會變亂百出」(473)、「宋儒的自覺運動自始即帶有一種近於宗教的嚴肅的道德觀念，因此…助成他們黨爭意見之激昂。」(428)與「因此」有相同功能的詞，如「遂」、「於是」亦爲綱文經常使用：如，「及翰林院既不能培養人才，…而選舉遂不可問。」(498)、「於是諫垣與政府不相下…。」(393)「及門弟勢力已成，他們遂變成變相的貴族…」(134)、「於是遂有漢武帝之誘亂政策」(147)。

因果性質的用語大量使用，事實與事實的關聯及發展被表現出來。“國史大綱”使用綱目體寫國史，但却已經捨棄了舊綱目體例證的性質；不但如此，而且比一般不用綱目體寫的歷史發展，有更強烈的解釋性質，以及發展因果的性質。因爲，屬於綱的文字大約只佔全文的五分之一；

目中引述的史實主要是作為網文內容上的補充。這樣綱目使用的結果，使得解釋過程的文字，得與繁瑣的史實分開。過程解釋的特色越發的清晰。

如果錢穆僅僅止於將傳統史家塑造出的歷史事實，相互結合，並且也使用許多因果性連接詞；這樣並不足以使“國史大綱”構成一個國史的發展脈絡。因為，如果各條因果句並沒有它們共同的主詞的話，因果句之間仍然是獨立而分散的。A. Danto 在說明何謂分析句子，以及說明何以任何敘述都同時是對事件的解釋 (explanation) 時，提到：因果關聯及事件發生的時間秩序，只是敘述句的條件之一。另外一個必要的條件是，各個因果句必須呈現出一個一貫的主詞。只有這個項條件同時出現時，才能構成一個有效的敘述 (valid narrative) ⑧。換句話說，要表達出一個發展過程 (即 A. Danto 所謂的有效的敘述)，必須有時間前後的因果秩序以外，各事件間還必須顯示出一個一貫的被解釋項 (explanandum)。

從 A. Danto 分析敘述句得到的結論出發，我們除了可以指出：錢穆在“國史大綱”書中把傳統史家用的歷史事件，以因果關係的方式，重新組合；並且，把傳統例證鑒戒性的綱目體裁變成了因果關係表達的體裁以外；我們還可以進一步指出：“國史大綱”中有一貫的主詞。

我們在檢視“國史大綱”這部書的主詞——被解釋項——時，我們很容易發現，一九四〇年成書的“國史大綱”留下了錢穆在北大所講授的“中國近三百年學術史”及“中國政治制度史”痕跡。“國史大綱”關心的對象是學術思想與政治組織；這兩個因素貫穿全書。這兩項因素之間有主從的關係。學術思想是政治活動及制度沿革背後的決定因素。後者有從屬性的角色：它一方面只是學術思想的外在表現，是其理想實現之工具；另一方面，它也是推動學術思想發展的學者，賴以生存活口之外在憑藉；學者之政治活動，使他們不致流入農、工、商、軍等職業中，能使他們繼續從事政治最後所依靠的學術思想工作 (611)。

政治秩序及制度沿革，從量的觀點看，顯然佔“國史大綱”中的主要部份；但是，書中主導的角色是由學術思想所扮演。學術思想是錢穆藉歷代政治上的變化所要說明的主要對象；它是該書中的被解釋項及主詞。譬如，錢穆視中國第一個大一統帝國的出現為一重要的事項；在論及「第一次統一政府之出現及其覆滅」之前，他先討論先秦的學術思想，說：它的態度及傾向，已經塑造完成；這些思想有其核心觀念，「…創建中國之政治制度，對內對外，造成此偉大崇高之中國國家，…胥由此種觀念為之核心…。」(84)

“國史大綱”第三篇「秦漢之部」以文治政府為重點說明漢朝政府成立及墮落的經過時，錢穆明顯的以學術思想的變化為其原因。在敘述到漢末魏晉政治上的混亂時，他對漢初以下的政治發展有一段很清晰的回顧性解釋：「西漢初年由黃老清淨變而為申韓刑法。再由申韓刑法變而為經為儒術，一步踏實一步，亦是一步積極一步。現在儒術轉而為法家，再由法家轉而為道家，正是一番例捲，思想秩序及政權的分崩禍亂，恰與世運升降成正比。」政治秩序及政權的分崩禍亂，是這裏所謂的世運；而世運變遷，繫之於學術思想的變化。

學術思想是政治秩序變遷的底層，這種歷史解釋的方式，在南北朝分裂及唐的統一，錢穆又有充份的表現。論及北朝時，所用的題目是「北方政權的新生命」。在這一章錢穆首先說明「北方的儒統」。這裏所指政權的新生命，不是只對北朝而言。實際上，隋唐政治秩序及制度的恢宏，錢穆都歸之於學術思想在北朝時期的蘊釀，他說：「從北朝儒學，逐步轉變，而有唐代政府之規模…。」(287)

錢穆敘述唐代租庸調制演變成兩稅制，由府兵制到方鎮與禁兵時，他認為，原始良好制度背

後的思想的消失，是該制度變化的原因：「一項制度的創建，必先有創建該項制度之意識與精神。一項制度之推行，亦同樣需要推行該項制度之意識與精神。此種意識與精神逐漸晦昧懈弛，其制度亦即趨於腐化消失。」（300）

學術思想是政治發展的動因，這個主題，毫不例外地也出現在宋代的部份。宋代的政治革新運動——慶曆及熙寧變法——是錢穆第三十二章敘述的主題；而第一節，他安排的是「學術思想之新曙光」。慶曆變法固然是范仲淹學術思想的外現；熙寧變法之所以展開，也必須溯因到新學（412）。

政治秩序及政治制度的變遷，原本可以用人口增減、氣候變遷、農產量的變化或外族力量的介入等各種因素，加以說明。「國史大綱」並不否認政治活動受到這些因素的影響；但是，却始終一貫的強調學術思想這個因素。政治秩序及制度變遷，被安排成爲學術思想變遷之外在表現。「國史大綱」中對這些「外在表現」長篇的敘述，實際上都是用以說明學術思想的變遷。再用A. Danto的術語，「國史大綱」有其一貫的主詞——學術思想。

我們用「學術思想」作爲「國史大綱」一書的主詞，仍然不十分恰當；因爲該書中「學術思想」並非一個同質體。錢穆在中國歷史發展中所強調的：「從學術影響到政治…走上一條合理，努力造出一個合理的政府來。」這裏所說的學術，應該不是泛指老莊釋道的學術，也非泛指籠統的儒家。尤其當他談到一個「合理政府」產生的原因時，「學術」一詞是指著特定的對象。「國史大綱」中所要敘述的政治發展，是一個有「合理」發展方向的政治。這個發展方向指兩件趨勢：一個是大一統的形成及其不斷的鞏固；有權力及效率的中央政府；一個是中央政府與民衆不斷緊密的結合；平民參政的制度化，以及以人民爲念的政策的不斷充實。他所論述的考試制度、諫官、宰相制度、文人政府、府兵、均田制等，其中的關聯及變遷，大致都可以說是要表現上述兩個相關的政治發展方向。錢穆所使用的「學術思想」一詞，因此必須用這個他所在國史中見到的政治發展，作爲標準加以界定；與它相關的，才真是所謂的「主詞」。

大一統國家的思想基礎是大我，以及群體的觀念；而政府與人民結合的思想根源是對個人的尊重、對人民的愛護。錢穆對一切思想界現象的分析，都從政治觀點出發。確切的說，他是從大我、小我的觀點分析各種學術思想。只有儒家才是兩者兼顧：「儒家以仁濟禮，在大群的凝合中，充份提高了一般人的地位。」（254）「禮」是與大一統及國家組織相配合的思想，而「仁」是對小我尊重的思想。墨家「一方面注重大群的凝合…而其缺點，則在個人之依然無地位。」（254）「道家則專意要向大群體中解放個人，而結果達於群體之消失。」（254）群體之消失，即一切權力關係，包括政府及一切政治秩序之消失。在錢穆國史中政治發展的觀點下，道家代表典型反歷史發展的思想。陰陽家是錢穆認爲比較複雜的思想。它的五行觀與儒家的與時轉移、無奪民時、順應民心的思想——仁的思想，相合。（253）同時，又有與儒家「仁」的思想基礎：人道觀，相反的天道觀。而法家只知道提出君主統治的方法，而未尊重個人。

道家、陰陽家、儒家及法家等思想，交互影響下的發展，構成漢初到魏晉政治發展的底層伏流；但是，這些論述的焦點，却一致地指向儒家。譬如，王莽受禪與變法的失敗，他認爲「即陰陽家學派思想之失敗」；而陰陽家學派思想失敗之真正意義，他說：不是儒家思想發展中，嘗試將禮與感召、方術相結合的失敗。王莽的失敗，代表的是，儒家在發展中，嘗試走了一條沒能走通的路。又譬如，他提出西漢初年，由黃老經申韓，到經學儒術之大盛；東漢以後，由經學儒術，再回法家，以至魏晉之道家思想；在這一段裏面，當他論及申韓、老莊時，無不以儒家的標準

，分析其特性。

南朝與北朝的佛教思想對該時期的政治，各扮演著不同的角色。北魏佛教直接影響到政治的聞爭。錢穆分析此時佛教思想，特別強調其中「大群之人文集業」與儒家相近。(270)並且特別敘述禪宗結合佛義於中國傳統之大群心教。宋儒在思想上能繼唐後，補先秦儒學之不足，尤其在心性存養的理論方面，正是受佛教思想的助益。(581)我們可以說，佛教思想並非錢穆在此段史事中，真正要說明的對象；提及它的原因，明顯的，還是在說明儒家思想的發展。

即使是儒家，錢穆也再將它區分為文學之儒、與經史之儒。在經史之儒中，又有訓詁之儒與經世之儒之區分，而各在唐、宋及清代各有其政治上不同的影響。

我們在這樣檢視其書中的主詞後，可以毫不遲疑的說，貫穿全書的學術思想，其實是一種特定的政治意識：對一統國家的忠誠，與對人民的責任感。

“國史大綱”書中的這個主詞，可以幫助我們說明，該書中的因果句，是有一個一貫的主詞，將它們連結在一起。它們不是獨立而彼此不相關的。一貫的主詞的存在，顯示了，因果句的使用，是爲了建立一個國史發展的脈絡。照A. Danto的說法，有一貫的主詞及時間次序的先後事件，才能構成一個敘述整體。錢穆的“國史大綱”正是一部敘述性的——有突顯的(explicit)解釋脈絡的通史著作。我們可以大膽的說，它異於以各別事例鑒戒、以事件說明法則的傳統史學。“國史大綱”書中所呈現出的國史發展的特性，使它異於，把過去的經驗當作聚寶盆、把「歷史」當作複數名詞的傳統史學^⑨。史學經世的形式；因此，也有它質上的變遷。

錢穆藉著傳統史家所用的材料，說明國人在兩千年左右長期而富有變化性的活動中，具有一個一貫的特色及能力：國人能在不同的環境中，不時的增益及保持自己，使得對統一國家的忠誠與對人民的責任感，能不斷的凝聚、強化，進入後起人們的意識之中，成爲政治行動的方向及力量。“國史大綱”說明了我們一貫的特色及能力，實際上，也就等於說明了「我們是誰？」這個深層的問題。中國人的自我瞭解、中國人與歐美人及其它民族的差別，都是“國史大綱”針對的問題。「我們是誰？」、「人我之區別」、「自我的瞭解」這些概念，如果用「認同」這個概念來統攝，那麼，我們可以稱錢穆的“國史大綱”爲提出國人認同的新史學，有別於提出行爲規條的舊史學。

三、認同的問題與經世思想

梁啟超在民國十一年提及他對舊歷史作品意義已經不甚具有信心的事，他說：「每遇青年學子叩吾以治國史宜讀何書，輒沉吟久之，而卒不能對。」^⑩他所遲疑的是，不知道到底那本舊史書，提出的事理、法則，對當代的青年還具有遵循的價值。我們反觀他在報章上的大量作品，實際上，他指點別人方向時是毫不遲疑，而且幾乎無時無刻不在這樣作。這樣的情形在當時應該不是孤立的現象。新思想、新行爲標準、新社會秩序的構想紛紛呈現時，傳統史學例證中提出的行爲規範，越發受到懷疑及排斥。我們幾乎可以說當時一般人否定及懷疑中國舊史中記載史事的意義，正是他們證明自己有行爲能力的一個部份，而且是自我肯定最簡單的一種方式。如果自己的行爲方式，被自認爲與過去毫無淵源；自己所想建構的社會秩序，也必須先完全棄絕一切過去的束縛才能展開。過去的經驗及事蹟無法說明我是誰，這樣的狀況應該是典型的認同危機。

事實上，國人在上個世紀轉換之際，天下觀必須轉換爲列國並立的世界觀；與這個轉換相伴隨，應該有強烈的「我們是誰？」的問題。而傳統批判者對這個問題，完全沒有提出加以說明；

不但沒有加以說明，相反的，這個潛存的問題，在對傳統全盤性 (totalistic) 的批判之下，益不得其解^⑪。

錢穆藉著“國史大綱”的撰述，提出國人的認同，這項工作應該一方面放在例證史學失去其提供意義效力的史學體例危機中看；另一方面放在世界觀改變之下，認同的需求及認同危機的背景中看。他轉換了舊史學中歷史事件組織的方式，用舊有而通俗的史事，寫成一個與當時社會相銜接的、有正面發展意義的過程，提供了國人認同的說明，也使舊史事再度具有它的意義；他同時處理了兩項相關的危機。

當然，他所提出的國人的認同，也有其規範性。它包含一種對社會秩序及世界秩序的看法及要求於其中。如果對社會秩序及世界秩序的要求與說明，算是經世思想，那麼，他史學作品提出認同的工作，正是他的經世思想之表達。

“國史大綱”提出的中國人的認同，顯然是站在知識份子立場所做的說明。肩負中國人特質的——忠於一統、勇於替人民負責的思想的——只是知識份子。實際上，他是以知識份子的一個特定傳統去說明中國人這個異質體。這樣的立場，顯示出他對社會秩序的看法：中國的社會，在他的觀念中，應該以有上述政治意識的知識份子為骨幹。政治活動是他們的權利，以及他們的職業（生活的資源）。軍人、商人、農人與工人，原則上，只該自限於其職業中；政治的活動，他們不必也不該以任何角色參與；漢代士人政府的形成，他認為是國史理性發展的第一步，「讀書通博之士，在政治上所表現的成績，究竟比貴族、軍人和商人來得高。」知識份子參政，在唐代進一步得到了制度化的保障。而考試制度施行到清末，錢穆認為，它鞏固的是，漢代文治政府的精神；他說，唐代以下的考試制度，在使該精神「不過更活潑、更深廣的透進了社會的內層。」

如果我們肯定錢穆替某些價值觀相近的知識份子，提供了他們認同的說明，告訴了他們，他們得到政治行為上的方向及力量。這同時，我們也必須指出，社會上的其它階層，在這樣的認同說明下，因為他們被放在中國歷史發展——政治發展——中附屬及被動的地位，並不充份具有「中國人」的特質；因此，他們失去了他們行為——特別是政治行為——的能力。

“國史大綱”作為北大學生講義，或是，僅在傳統性質的社會精英中流傳，其認同說明中隱會的局限性，不易被查覺；但是當它成為幾乎是一切中國通史的藍本時，並擴大成為一切學生群——他們將來各有其工商方面的職業——的讀本時，它的局限性將會清晰呈現。“國史大綱”書中認同問題的特色，應該放在它成書背景中瞭解，指出其原始讀者為北大歷史系學生。

如果我們說，“國史大綱”替國人提出認同說明時，站立在知識份子立場上；我們還必須再進一步說明：當時主張議會民主政制及工農革命、無產階級專政的知識份子，顯然不包括在其中。錢穆在“國史大綱”中費了許多心力與篇幅，說明國史中參政制度的合理性、制衡的存在，不需要議會民主制度^⑫。中國社會中錢幣一直未有理性化的發展，商業不盛，商人勢力小，未造成剝削及兼并；更無社會階級的形成^⑬；以工農革命追求無產階級專政，根本不合當時需要。“國史大綱”說明了國人的特質以後，議會民主及無產階級的民主，自然已被界定為非中國的思想，這些思想失去其歷史發展的根據 (historical legitimation)。信仰及傳播這些思想的知識份子，誇張的說，也被界定為非中國人。從這個觀點看，這本通史的撰述，在三十年代的政治意見衝突中，顯然是思想的武器之一。

事實上，議會民主及無產階級民主制，當時頗為一般人視為是世界性的文化，不論是信仰前者或後者，多視之為，是放之四海而皆準的制度；他們頗有以“西方”的思想取代儒家思想的傾

向；因此舊的天下觀，其形式並不受動搖，變換的只是其中心內容。“國史大綱”提出國人的特質，錢穆的工作顯然基於一種完全不同的世界觀之上：認為世界是由各個具有特質，各行其制的諸多民族單位所共同組成的。它們必須按照自己內在的性質繼續發展。民族及其制度無價值高下之分，只有性質的差異；而且彼此之自我發展，為世界和諧之基礎。“國史大綱”之寫作，應該是基於這樣的世界秩序看法；而他以提出中國歷史發展的特色來肯定這樣一個世界秩序。

從上述的觀點看，以議會民主及無產階級民主為中心的新天下觀，才是與傳統相承襲的，保守的；而錢穆的“國史大綱”反而在形式上脫離了舊天下思想，成了進步的代表；就如同它在史事撰述的結構及形式上脫離了舊史學例證的形式，而具有其進步性一樣。^⑭

四、結語

鑒戒式史學在變遷不激烈的社會中，似乎足以提供人們行為的方向及意義。史學經世，在形式上，不必依賴發展過程的提出。在中國近代各方面有相當大變化之際，例證式的史學失去了它行為指導的說服力。行為方向及力量的獲得，必須藉著明白自己是站在怎樣的發展過程中。同時，在世界觀的變動下，如果根本拒絕接受以歐美文化為中心的新天下觀取代儒家文化為中心的天下觀，史學就必須用來表達自己民族的特質。在這兩個需求的背景下，有錢穆“國史大綱”出現。從上述兩方面來說，它都具有它明顯的進步性。但是，從它提供出的認同中隱含的社會秩序而言，它顯然有它的局限性；錢穆“國史大綱”所率先跨出的進步步伐，事實上也是我們後起者所行走的方向；在學術的研究範圍中，似乎沒有人再走回頭路；以歷史研究來說明為法為鑒的條規。相反的，不同的研究題目似乎都在匯集說明「我們是何處來的？」「我們怎麼變成今天這個樣子？」，說明認同的問題。正因為如此，我們對所提出的認同的內在性質，有分析及說明的必要。

分析史學作品中認同的內在性質，是分析歷史知識的主觀性，這個主觀性的提出及討論，是它能擴大修正的前題，也正是能走向相互主觀性的必要的步驟。歷史學術的「客觀」性基礎即奠基於此。同時，在主觀性提出討論、修正擴大時，歷史作品提供的認同功能，也將突破自己的局限性，不致造成，以犧牲別人的自我認識與自我肯定，來成就自己的認同說明。歷史學知識的基礎，實際上是與它經世的功能相結合成一體的。^⑮歷史知識中反省、討論的要求，實際上是經世的保障。

註釋：

- ①錢穆，國史大綱，（重慶一九四〇第一版）台北一九六七台十一版。以下引用書中文字均出自第十一版，頁碼括於引文之後。
- ②認同（identity）若指個人認同，它的意義與集體認同，有很大的差別；「個人認同」的定義，無法直接轉用於「集體認同」。個人認同，指一個人在時間過程中能夠掌握住自己有一貫的特色及能力；而且，這項自認的一貫能力及特色，也被其它人所肯定。集體認同，是一群人在他們彼此互異的個別性之上，有其一致的對現在、過去及未來的態度及看法者。歷史解釋對集體認同有確定及鞏固的作用，但却並等同於集體認同。集體認同的達成也不是由歷史解釋單獨能夠達成的，它勿寧代表人與人之間溝通的過程。歷史中的過程，因為都是解釋出來的，因此，歷史本身是無法賦與某些人一個集體認同；任何解釋出來的歷史過程，如果它被衆人所接受，

這段歷史解釋只是更鞏固了既有的一致性。個人的認同，除了有自己在時間中見到的一致性以外，還有自己在不同社會角色中安排出不矛盾的一致性 (Social Identity，相對於上述的 personal Identity)，而所謂個人的認同應解釋為 (或譯自) Ich-Identität 或 I-Identity。集體認同 (collective Identity) 與歷史解釋提供的認同 (historical Identity) 之間的關係與個人認同中的 Social Identity 與 personal Identity 之間的關係不同。以上說明出自，Jörn Rüsen 等編 *Handbuch der Geschichtsdidaktik*, Stuttgart 1984.

- ③ A Danto Historical Explanation: The Role of Narratives 章說到: Logically, we want the same variable to be replaced by the same constants throughout. The narratives analogously might be spoken of as unity of subject. . . . Narratively, "the continuity or persistence of elements which a characteristically historical explanation emphasizes may be of a kind which serves to render the explanandum—when it is some human action or sequence of actions—intelligible or justifiable." There is an immensely difficult problem here in historical ontology, the problem, namely, of what are the elements which persist through a change . . . However this issue is to be decided, from a formal point of view a narrative requires a constant subject. 參見 A.C. Danto, *Analytical Philosophy of History*, Columbia 1965. 引自: 台北虹橋版民六十年, 第 249-50 頁。
- ④ 錢穆, 八十憶雙親 . . . , 台北民七四第七三頁。
- ⑤ 顧炎武, 日知錄, 黃侃 / 張繼校勘, 台北明倫民五九年三版, 第十九卷, 四九一頁。
- ⑥ 王夫之, 宋論, 世界書局版台北民六七年, 第七八頁。
- ⑦ 趙翼, 廿二史劄記, 鼎文書局版, 台北民六四年, 卷三二, 第七三七, 七三八頁。
- ⑧ 參見註③
- ⑨ 有關傳統史學, 視「歷史」為複數名詞可參見: 胡昌智, 由鑒戒式到演化式的歷史思想: 一個中國近代史學結構變遷的初步觀察, 刊於: 中興大學歷史系編, 中西史學史研討會論文集, 台南民七五年, 第一四一至一八〇頁。把經比喻為太陽 (單數) 把歷史比喻為天上之星, 這是最典型的例子; 此外, 如稱「史事之林」, 道無所不在「散在事為之間」「事為」也是複數的概念。中文無複數名詞之表現方式, 而傳統史學家常以複數形式用它。
- ⑩ 梁啟超, 中國歷史研究法, 台北民六六年 (中華書局版) 第廿七頁。
- ⑪ 林毓生先生對五四前後中國知識份子全盤性的批判中國的過去闡述最為清晰, 有時稱之為「五四式反傳統思想」。參見: Lin, Yü-sheng, *Redical Iconoclasm in the May Fourth Period and the Future of Chinese Liberalism* 刊於: Benjamin I. Schwartz, *Reflections on the May Fourth Movement*, Harvard Uni. 1972. pp.23-58. 特別見第 27-29 頁, 稱, 當時知識份子以欠分析性的態度, 將一切的舊秩序歸之於文化智識的單一因素, 而視以智識思想的變革為唯一工作。
- ⑫ 錢穆論及唐代政治制度時說: 「代議制之所起, 由於宰相之權不重、無參署之制 . . . 考試權不獨立 . . . 無審駁、監察、彈劾之官 . . . 」而這些官制都在國史中充份的得其發展。錢穆之敘述這些官制, 目的在說明代議制這種次等性補救性的措施, 於中國之社會是不必要的。上述引文出自第一〇四、一〇五頁。
- ⑬ 錢穆對中國在周朝幣制至唐代貫徹到稅收制度中去這種發展之不重視並非偶照; 宋代紙幣的使用並沒有賦予正面的意義; 而王莽之失敗, 他也惋惜其中廢除貨幣之意旨無法得其實現。這個與市場分工, 階級劃分相關的貨幣制度, 錢穆是以「社會和諧」的觀點去說明及敘述的。有關這點, 參見: 胡昌智, 錢穆的「國史大綱」與德國歷史主義, 刊於: 史學評論, 第六期, 第十五至三八頁。
- ⑭ 有關中國近代史學結構變遷, 參見: 胡昌智, 註⑨引文。

- ⑮有關歷史知識理論與其生活界 (Lebenswelt) 的基礎，參見：Jörn Rüsen, Historische Vernunft. Grundzüge einer Historik I: Die Grundlagen der Geschichtswissenschaft, Göttingen 1983, 特別見第二章，Pragmatik—Die lebenspraktische Konstitution des historischen Denkens.

**THE KRETA AYER INCIDENT:
A Case-study of the Kuomintang's Activities
in Malaya**

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Introduction

The political activities of the Kuomintang (KMT) in Malaya¹ have been an interesting and controversial topic in the study of Malayan Chinese. The British colonial government in Malaya adopted a strong stand against any disturbance. Many of the KMT's activities were simply branded as communist conspiracies, aiming at the overthrow of the colonial rule. The KMT was outlawed and its activities were banned. The KMT and its proponents on the other hand, not only claimed the legitimate nature of its various movements, but also denied that the KMT had any intention of challenging the colonial rule. This paper intends to make an inquiry into the KMT's activities in Malaya in the 1920s in general and the Kreta Ayer Incident in 1927 in particular, with the hope of providing a better understanding of the nature and scope of the KMT's activities in this period.

In response to the forcible coming of the Western powers, the patriotic Chinese -- reformists as well as revolutionaries -- rose up to save their country. The Malayan Chinese were sought by both of them to support their movements.² Their activities inevitably stimulated the awakening of the political consciousness of these overseas Chinese.

The successful revolution of 1911 brought Sun Yat-sen and his revolutionary body Tung Meng Hui, the forerunner of the KMT, to a high place. Many Malayan Chinese joined Sun's party. The KMT branches were set up in Singapore as early as 1912. Later, branches were also established in Kuala Lumpur, Ipoh, Penang and other cities in Malaya.³ Nevertheless, the outlawing of the KMT by Yuan Shih-k'ai's new government in 1913 caused troubles for the KMT branches in Malaya. Since Great Britain was maintaining a friendly relationship with Yuan's government, the Malayan government adopted a hostile attitude towards the KMT branches in Malaya. In 1914, the Singapore branches ceased to exist officially, while some other reduced their political activities.⁴ The KMT in Malaya thus suffered a decline in the years following the action of Yuan. Meanwhile, without any effective organ, Yuan's government failed to nourish the growth of the political consciousness of the Malayan Chinese. Except for the anti-Japanese boycott in 1915, the period between 1913 and 1919 was marked by the absence of active interest in China's domestic politics on the part of the Malayan

Chinese.⁵

Reflecting the May Fourth Movement in China, students and teachers of Chinese schools in Malaya organized anti-Japanese activities.⁶ Sun Yat-sen, as an old revolutionary active abroad, taking advantage of the rising political consciousness of the Malayan Chinese, launched a new campaign to revive his influence among them. As early as 1920, some KMT members came to Malaya to propagate Sun's Three Principles of the People.⁷ As the KMT was making efforts to re-enlist the support of overseas Chinese in Malaya, the KMT in China, under the leadership of its founder, Sun Yat-sen, adopted the Bolshevik type of party system and reorganized itself into a tight party. It also made a fundamental change in its policies towards the masses.⁸ The KMT's reorganization had profound repercussions on its Malayan branches. Many of them showed their disapproval with the new policies. Some of them even denounced Sun for his alliance with Soviet Union and the communists. To the dissenting branches, Sun responded by expelling their committee members from the party.⁹

The KMT's Mass Movement in Malaya

Armed with the tight party organization and its new policies towards the masses, the KMT branches in Malaya launched a campaign to speed up the growth of "China-oriented" political consciousness among the Malayan Chinese.¹⁰ A considerable quantity of nationalist propaganda materials, printed in Canton, the nationalist capital at the time, were distributed. These materials were strongly anti-British in tone.¹¹ When the KMT intensified its efforts to mobilize the masses, it paid special attention to the intellectuals and the working masses.¹² In addition to various Shu-pao shes (reading societies), the reorganized KMT in Malaya devoted a great part of its efforts to maintaining and setting up many Chinese schools. By 1925, there were eleven schools directly under the control of the KMT branches, and many more under the auspices of the KMT members.¹³ As for the teachers in the Chinese schools, a high percentage of them were either members of the KMT or its sympathizers. They were considered by the Malayan government to be people with "strongly leftist beliefs."¹⁴ To counter-attack the KMT's political activities, the Malayan government declared the ban on the KMT in 1925.¹⁵ Nevertheless, despite the restrictions, the KMT continued to grow in Malaya. Under the guidance of the South East Head Branch in Canton, new party branches were set up in Malaya.¹⁶ In the area of Singapore, the KMT seemed to have made a special effort to strengthen its position. By 1926, there were seven sub-branches established in Singapore.¹⁷

Besides having penetrated the formal educational systems, the KMT set up many night schools for those employed during the daytime. These schools were opened primarily to the adults and were described as "progressive" and regarded as the pioneers in the use of Kuo-yü (Mandarin) as the medium of instruction.¹⁸ It seems that the KMT used them as the important organs to spread its ideas. As a Malayan

government report stated, "the subversive propaganda is carried out by speeches, pamphlets and by lectures in night schools."¹⁹ Although the repeated raids on these night schools had cut down the number of them from 76 in 1925 to 62 in 1927, the total number of the students in the night schools increased from 2,321 in 1925 to 2,822 in 1927.²⁰ Of these night schools, about thirty or so were in Singapore in 1927.²¹ Since most of the students in the night schools were young workers, they were easily attracted to the aggressive propaganda of the KMT. As the champion for Chinese nationalism and the vowed promoter of the interests of the working masses, the KMT's principles and policies thus had a tremendous appeal for the politically unsophisticated young students and workers. Meanwhile, the KMT in Malaya also had its own newspapers to promote its prestige and propagate its ideas among the Malayan Chinese. By 1925, the KMT at least had four party newspapers in Malaya.²² These newspapers usually carried a full report on important events which were beneficial to the KMT and would neglect those having harmful effects on the KMT's positions. They would also take the lead in creating favorable public opinion for KMT activities.²³

Furthermore, the KMT also organized drama societies and speech associations to reach the common masses. These organizations adopted the vernacular Chinese as their medium to propagate and promote the nationalistic sentiments.²⁴ Although the KMT at no time regarded Malaya as a terra irredenta, KMT's efforts to promote a "China-oriented" Chinese community in Malaya did alarm the colonial authorities and thus were harshly suppressed.²⁵ The suppression in turn irritated the nationalistic youth and strengthened their devotion to China during this period.

The untimely death of Sun Yat-sen in 1925 did not hinder the development of the KMT in China, but in fact speeded up the growth of the KMT's prestige among the Chinese. After his death, Sun gradually became the symbol of China's national unification.²⁶ His political doctrines were further publicized by the KMT. Within a short time, Sun's ideas and political programme were highly admired and respected, that they had an almost irresistible appeal to patriotic Chinese.²⁷

The increasing popularity of Sun also had its repercussion in Malaya. When Sun died on March 12, 1925, the Chinese community in Malaya was shocked and many of them followed the instruction of the Chinese Consulate-general to fly the flags at half mast.²⁸ However, except for in a couple of schools, there was no public memorial service to mourn Sun's death.²⁹ While the intellectual circle honoured Sun as the "National Father (Kuo-fu), the Singapore Chinese Chamber of Commerce only sent a telegram to express its sympathy "to the late Provisional President's family."³⁰ Later, the KMT in Malaya conducted a huge memorial service for Sun in April.³¹

In 1926, some KMT members in Singapore planned to repeat the 1925 service and combine it with an anti-Japanese boycott. The preparation was not only discouraged by the local authorities via the assistance of the Chinese Chamber of Commerce, the preparation meeting was also raided by the police. About forty teachers and

students of the night schools were arrested.³² The arrest prevented any further preparation and the 1926 anniversary passed without ceremony or services anywhere in Malaya.³³

One year later, public memorial services again took place in various parts of Malaya. Some schools in Kuala Lumpur and Segamat, apparently strong supporters of the KMT, passed out the handbills to call for a fervent commemoration of the National Father on March 12. The Chinese community in Singapore, with sponsorship of the Thong Yan Club,³⁴ was able to secure the permission of the colonial authorities to hold a huge memorial service.³⁵ This time, the committee members for the service were for the most part not KMT members, though the KMT might have been the group behind the scene. During the ceremony, Sun was formally honoured as the National Father and a song dedicated to Sun was sung by the whole audience.³⁶ With all of its efforts, the KMT gradually brought the working people as well as the intellectuals to its side, and the whole Chinese community under its influence. Nevertheless, partially due to the lack of able cadres and partially due to the KMT's priorities, the KMT in Malaya, unlike its parent organization in China, had not developed well the tight mass organizations, such as student unions and labor unions, among the workers and the intellectuals.³⁷

The Kreta Ayer Incident

In 1927, the first move to hold a commemorative service on March 12 was initiated by the *Sin Kuo Min Poh* on March 3. After the efforts of some middle-ranking Chinese community leaders, the permission to hold the memorial service was granted by the colonial authorities. The Chief Police Officer was informed by the Inspector-general of the Police that there was no official encouragement of proposed demonstration. The formal processions through the city with display of KMT flags or any speech making would also not be allowed.

On March 12, about 20,000 Chinese gathered at a place in Singapore called Happy Valley.³⁸ The pavillions on the grounds were all flying the Chinese Nationalist flag, and the blue KMT party flag with a white star was used in the memorial hall where Sun Yat-sen's portrait was set. The service proceeded in an orderly manner and according to plan. Then the Hainanese came in a group of about 2,000. And some of them began to make speeches. Those who tried to prevent the speeches were assaulted. After the speeches, the crowd went out of Happy Valley, marching down to the downtown area. As they proceeded, they passed out pamphlets warning against "plutocracy." The procession numbered about 1,000 individuals, of whom about 700 were adults aged 18 to 25. Apart from occasional cheers and shouts, the procession was quite orderly until a trolley-bus came on the scene. The bus, driven by Thompson, continued to its predesignated route and ran into the crowd. Then the masses

attacked the bus and followed the bus to the Kreta Ayer Police Station. And it was in front of the station that the crowd and the police had their confrontation. When the crowd made attempts to rush to the station, the police fired. The result was six dead and fourteen wounded. On the dead body of a Hainanese, some inflammatory documents were found. This was the Kreta Ayer Incident and was also referred to by some Chinese newspapers as the Incident of National Memorial Day.³⁹

Within a few days, large quantities of what British media called "inaccurate and untruthful propaganda" were secretly distributed among the Chinese, chiefly by Hainanese organizations. In Ipoh it was reported that thousands of pamphlets making "false allegations" in connection with the incident were distributed among the Chinese, and in Singapore a printing press without a license at a night school was seized. The press was believed to be used to print inflammatory materials. And in Selangor, a Singapore March 12th Massacre Aid Society was founded to collect contributions.⁴⁰

As a result of the Kreta Ayer Incident, a trolley bus boycott was launched. The boycott began on March 24th. When the trolley buses stopped, pamphlets were thrown in directing the Chinese passengers not to use the vehicles. The efforts seemed to be successful. By March 26th, even during the rush hours, the buses contained few passengers, and the Chinese were absent. On the other hand, the small motor buses, entirely owned by the Chinese, were all full. Meanwhile, stones were thrown at trolley buses from time to time. By March 28th, eleven trolley buses had been badly stoned and damaged, and some trolley poles were removed. Besides the boycott against the trolley buses, there were several attempts to launch strikes by domestic servants, mainly the Hainanese, and to spread the boycott to other British industries.⁴¹ As time passed, the situation became more serious. In the downtown area, riots occurred. The Fire Brigade and then military forces were called to disperse the crowd. This was the first time since the anti-Japanese riots in 1919 that the military were called out."⁴²

In response to the disturbances, the British colonial authorities not only employed military forces to maintain the peace and order, they also intensified their raids on night schools. As of May, 1927, five night schools were declared unlawful and shut down.⁴³ Meanwhile, in order to pacify the Chinese community, a five-member jury was formed to inquire into the incident. Of the jury, there were well-known Chinese not associated with the British authorities. In the trial, a lawyer representing the Chinese Consulate-general was present. After long deliberation, the jury simply announced that the victims of the incident died of gunshots fired by the police into a crowd gathered in unlawful assembly.⁴⁴

Realizing that the British colonial authorities might adopt a strict action against the boycott, the Singapore Chinese Chamber of Commerce tried to calm down the anti-British feeling among the Chinese. As early as March 28th, the SCCC discussed means to restore peace and order. The next day, the members of the SCCC, riding in motor cars, carried counter propaganda banners down to the streets urging the Chinese

to maintain law and order. Several Chinese Justice of the Peace also used their influence on the side of the British colonial authorities. The "public spirited efforts" of these gentlemen to spread counter propaganda were met by a threatening rush of the masses. The police then employed their batons, and twenty nine persons were arrested this time. According to the British report, "most of the 29 arrested were of the lowest types of coolie."⁴⁵

As the boycott dragged on, many Chinese lost their zeal to continue. Although some agitators employed intimidation to prolong the boycott, it gradually died out in late May.⁴⁶

Discussion

Despite all the efforts of the KMT in attempting to create a mass base and to implant anti-imperialist sentiments in the minds of the Chinese in Malaya, the development of the Kreta Ayer Incident suggests that these efforts had only limited success. For one thing, from the beginning the KMT failed to enlist the avowed support of top-ranking businessmen or communal leaders for organizing the memorial ceremony. The colonial authorities concerned were baffled by the conspicuous absence of such persons among the representatives who came forward to request permission to hold the ceremony.⁴⁷ For another, the fact that the dead and the wounded of the Incident were overwhelmingly Hainanese points to the parochial, communal nature of the mass base, at least of the activists in the KMT and its frontal organizations. Thirdly, it took the KMT more than ten days after the Incident to stage the boycott. Moreover, the boycott was both limited in scale and moderate in intention. It was directed against the Singapore Traction Company, which suggests that at the time the KMT had not developed the muscle to attempt a planned, more direct confrontation with the colonial authorities. And the failure to incite sympathy strikes in other industries reveals the still very limited capacity of the KMT for mass mobilization.

The reasons for the limited nature of success are many. As was indicated above, special efforts had been made since 1924, by the reorganized KMT to revive the martyr activities in Malaya. These efforts did succeed in a substantial enlargement of party membership and a noticeable increase in its activities. However, evidence suggests that no effective mass organizations, such as general labour unions or student unions, seemed to have developed. It was true that the South Seas General Labour Union was reportedly formed in 1926, but no evidence indicates that the Union was more than minimally active and influential.⁴⁸ This contrasted sharply with the parallel efforts in China, which by 1925, as the May Thirtieth Incident witnessed, had succeeded in developing very effective organizations for mass mobilization. In the absence of such mass organizations, through which party cadres could move the masses into action at short notice, the KMT in Malaya must have found it difficult at the time to launch massive collective actions of any long duration to capitalize on op-

portune moments or when circumstances demanded. Without organization, masses may occasionally be mobilized to initiate a boycott or a strike, but they cannot be relied upon to shoulder a sustained movement. The Kreta Ayer Incident undoubtedly provided a good opportunity for instigating and propagating anti-British sentiments, and the boycott had indeed arisen from such attempts to take advantage of the situation. Without strong organizational backing and connections, however, the KMT in Malaya failed to develop the collective action into strikes in other industries, and the boycott turned out to be of no substantive consequence.

When the KMT was first reorganized, its main drive was to mobilize Chinese peasants, workers, women and youths to support its national revolutionary movement. For each of these categories of people there was a Department in the party hierarchy under the jurisdiction of the Central Executive Committee. Sun was then quite critical of merchants. More than once he accused the merchants of "exploitation" and advocated the socialization of distribution through the development of consumer cooperatives. His attitude antagonized various merchant groups. Their discontent eventually developed into the Merchants' Volunteer Corp Incident in late 1924. The incident resulted in a change in the KMT's policy, and a separate Department of Merchants was added in November of the same year.

In order to mobilize the Chinese masses in Malaya to support its political struggle in China, the KMT in Malaya following the instruction of its parent organization, set up Divisions of Workers and of Youths in 1924. It was not, however, until 1927 that a Division of Merchants was introduced into the party apparatus in Malaya.⁴⁹ It is interesting to note that, at least after the reorganization, the majority of the cadres in the KMT branches in Malaya seemed to consist of workers, school teachers and educators; merchants generally did not make up more than a small proportion.⁵⁰ What is more, documents seized during the Kreta Ayer Incident show that the cadres were campaigning for uniting with the labourers and peasants;⁵¹ not only was there no mention of the merchants as a possible partner in the party's mass movement, but there were in fact slogans calling for fighting down "plutocracy." Thus, anti-merchant ideology and sentiments seemed to have been quite prevalent and influential among the cadres of the Malayan KMT branches in this period.

With the ideological climate such as it was, it is not difficult to understand why the business circles should have reacted in the way they did to the development of the Incident. When the Incident occurred and later developed into a boycott, the Singapore Chinese Chamber of Commerce came out with counter-propaganda calling for a stop to the boycott and the restoration of law and order. As a matter of fact, in 1925 there had already been incidents of clash in various places in Malaya when some shops refused to close to mourn for the death of Sun.⁵² And historical documents of some KMT branches record incidents of disaffected merchants allegedly betraying them to the British colonial authorities, resulting in massive raids and the deportation of important party cadres.⁵³ There was then, quite clearly, an obvious and deep gulf

between the KMT branches and the local business circles in Malaya during this period.

To point out such organizational and ideological factors is not to under-estimate the important role that self-interest played in the reaction of the business circles in this Incident. The importance of business self-interest can be seen readily when we compare the different involvements of the business circles in different events. Most revealing, perhaps, is the observation that hardly more than one year after the Kreta Ayer Incident, in May of 1928, when the Tsi-nan Incident broke out in China, the Malayan Chinese reacted most strongly by launching a vigorous anti-Japanese boycott. This time, a number of important businessmen were ready to take up leadership roles with devotion and enthusiasm. In fact, studies have showed that in two other boycotts against the Japanese, one in 1915 and the other 1931, and in the anti-Japanese national salvation movement of 1937-41, the business circles led in the initiation and organization of the collective actions.⁵⁴ On the other hand, during the long period of the massive 1925-26 Canton-Hongkong general strike in defiance of the British authorities, no evidence whatsoever of collective actions to show sympathy could be found in Malaya.

Such differing reactions are not hard to understand. In launching anti-Japanese collective actions, there was no risk of having a head-on confrontation with the local government. The expansion of economic interests of the Japanese in Southeast Asia since the First World War threatened the British as much as the Chinese in Malaya.⁵⁵ Anti-Japanese boycotts were to the immediate benefit of both the British and the Chinese business circles. Often than not, their launching was with the tacit approval of the colonial authorities with the provision that law and order would not be disturbed to the extent as might affect the entrepot trade of the area. On the other hand, whenever the actions might irritate the local authorities, as sympathy actions after the Kreta Ayer Incident and during the Canton-Hongkong strike probably would have, the business circles could not be too careful to avoid involving themselves. There was the fear that the colonial authorities might retaliate by taking actions that would seriously affect their economic interests adversely, if not something worse than that. Deportation, for example, was a measure often employed by the colonial authorities to eliminate "subversive elements." The measure proved to be one of the most effective methods in checking the propagation of anti-imperialist ideas and the organization of specifically anti-British collective actions in Malaya.

This factor of business interests goes some way to explain why the KMT should have been more successful in China than in Malaya in mobilizing the support of the business circles for its anti-imperialist cause. In China, the KMT could claim that its anti-imperialist policy, such as the elimination of the unequal treaties, would benefit China's business circles, and the abolition of fixed tariff on foreign goods would protect the development of native industries. On this basis the anti-imperialist policy of the KMT could appeal to at least some sections of businessmen in China. The same could not be said for Malaya, however. In Malaya, the interests of Chinese business-

men were tied to the ability of the British colonial authorities to maintain law and order; they would suffer to the extent that social disturbances would obstruct their business activities. The KMT's anti-imperialist policy not only could not provide the same appeal to the Chinese circles in Malaya as in China but, particularly in this call for anti-British actions, would most probably do damage to their interest. Thus, in addition to the ideological and organizational factors already mentioned, there was this conflict between policy and economic interests. The lukewarm even hostile response of the business circles in Malaya to the KMT's mass mobilization efforts was indeed only too natural.

The KMT records reveal that the Hainanese were among the earliest of the different Chinese dialect groups to respond to Sun's revolutionary cause. Hainanese members must have been sufficiently large as to justify the establishment, as early as in 1911, a separate Hainanese sub-branch. This sub-branch later developed into the second of the three sub-branches in Singapore when the KMT reorganized itself in 1924. Because of the large number of Hainanese activists, the mass mobilization efforts of the KMT in Malaya after the reorganization proved particularly successful among the Hainanese.⁵¹

In the 1920s, the Hainanese in Malaya were predominantly labourers, occupying the lowest status in the social hierarchy of the Chinese community. The greater success in the recruitment of the Hainanese, consequently, resulted in the strong representation of workers among the party cadres and members. This helps to explain the prevalence of antimerchant ideology that had coloured the KMT's activities and propaganda at least during the short period before the Kreta Ayer Incident.

As I have maintained, such ideological and organizational factors account in part for the less than enthusiastic support that the business circles rendered to the KMT in Malaya. On the other hand, this lack of strong support of the business circles could in turn have thwarted the KMT's efforts at mass mobilization. The business circles, particularly the Chinese Chambers of Commerce, provided the leadership function in a number of anti-Japanese collective actions in Malaya in the twentieth century.⁵⁷ Although their role may have been exaggerated in a number of studies, and the historical trend of mass participation in these collective actions seems to have been increasingly independent of the direction of the business circles, the role of important businessmen as "bureaucratic" leaders in these events cannot be slighted.⁵⁸ The mass mobilization would have been made easier if part of the efforts had been channelled through the traditional authority and social networks of some of the leading businessmen. The efforts could have succeeded in gaining for more recruits if the KMT in Malaya had been able to obtain more support from the business circles. What is more, because many of the leading businessmen belonged to the major dialect groups of the Hokkienese, the Teochew, and the Cantonese, their support could have meant better recruitment from these major groups. The mass mobilization efforts would not have been so communally biased towards the Hainanese.

The communal bias of the KMT's mass base could have importantly affected the

development of the Incident. In 1927, communalism was still powerful in the minds of many Malayan Chinese. The full blossoming of Chinese national identity had to wait until the Sino-Japanese War broke out ten years later in 1937, and especially until 1941 when the whole Chinese community was immediately threatened by the Japanese invasion into Malaya. The Hainanese dead and wounded in the Kreta Ayer Incident might have won the sympathy of many Chinese from the other dialect groups, but to expect more involvement on their part would have been unrealistic given the dominant communal frame of mind at the time. The audience at the official inquiry for the Incident reportedly consisted largely of the Hainanese.⁵⁹ Such a phenomenon may indicate some communal nature of the response towards the Incident.

It is also important to observe that the indirect rule of the British colonial policy involved recognizing and taking advantage of the pre-existing communal differentiation among the Chinese immigrants. This official policy, I have reason to believe, must have helped to perpetuate their communal identity. In the Kreta Ayer Incident the colonial authorities did not fail to highlight the fact that the "unlawful elements" were predominantly "of the lowest types of coolie" from the Hainanese group. Deliberate or not, the policy could have had the effect of "divide and rule," tending to play up both communal and class bias. Furthermore, the KMT's politicization efforts in Malaya mainly aimed at the creating of a "China-oriented" political consciousness among the Malayan Chinese. These efforts though might enlist the support of these overseas Chinese for the KMT's revolutionary movement in China, they would, on the other hand, reduce their interests in the local politics and not to offend the colonial authorities. Under such circumstances, any attempt to develop the Kreta Ayer Incident into a full scale anti-British violence involving the whole Chinese community would have been difficult if not impossible.

Notes

1. The term "Malaya" here refers to the Malay Peninsula, including Singapore and the British Malaya.
2. Ch'u-yun Yang introduced the Hsin-chung-hui, the fore-runner of the KMT, to Malaya in 1900, not long after the arrival of K'ANG Yu-wei, the well-known reformist. Yang was soon followed by SUN Yat-sen who came to Malaya in the middle of 1900.
3. A total of thirty branches were formed in Malaya. For details, see Png Poh-seng, "The Kuomintang in Malaya," in *Papers on Malayan History*, edited by K. G. Tregonning (Singapore, 1962), p. 215.
4. Evelyn Sim Cher Lan, "The Kuomintang-Communist United Front in Malaya, 1924-1927," (Singapore, B. A. Honour Thesis, University of Singapore, 1974), p. 4; The Penang branch was refused registration on the ground that it was likely

- to be used for plotting against the Yuan Shih-k'ai's government. See, Png Poh-seng, *op. cit.*, p. 217.
5. In 1915 Japan, taking advantage of the war situation, presented to China the notorious Twenty-One Demands. Led by the Chinese Chambers of Commerce, Malayan Chinese boycotted Japanese goods. The intensity of Chinese ill-feeling towards Japan and the boycott effect could have been stronger if Malaya had not been under war-time martial law. See Yoji Akashi, "The Nanyang Chinese Anti-Japanese Boycott Movement, 1908-1928," *Journal of South Seas Society*, Vol. XXIII, p. 72, 1969.
 6. Supported by the press and schools, the anti-Japanese activities in Malaya were quite vigorous. Although I still have some reservations about whether all of these anti-Japanese activities were the manifestation of nationalism, I do think that those intellectuals who led the movement made a great contribution in promoting the growth of political consciousness among the Malayan Chinese. For details on the response of these overseas Chinese to the May Fourth Movement, see Chui Kwei-chiang, "The Response of the Straits Chinese to the May Fourth Movement," *Journal of South Seas Society*, Vol. XX, pp. 13-18, 1966.
 7. Yoji Akashi, *The Nanyang Chinese National Salvation Movement* (Lawence, University of Kansas Press, 1970), p. 2; The First KMT sub-branch in Singapore was set up in late 1920. Soon after its establishment, it carried out its activities in association with Chen-chin School. Later, the sub-branch founded another school, Ch'i-min School. At the same time, its membership increased rapidly from just over fifty in the beginning to more than 350 in 1924. See *History of the First Sub-branch in Singapore*, KMT Archives, Document No. 002-33, dated, 1934.
 8. In order to have a tight control over various mass organizations, KMT ordered its members to form a solid group inside various civilian organizations. Article 77 to the KMT Constitution of 1924 explicitly stated, "In any secret, public, or semi-public non-Party organizations, such as labour unions, clubs, associations, chambers of commerce, schools, city councils, district councils, provincial councils and national congress, the KMT members should form party fractions (tang-t'uan) within these organizations, with the purposes of expanding the influence of our Party and of directing the activities of these organizations." Article 79 further states that the party members in these party fractions should be under the instructions of local party branches. For the full text of the Constitution, see Chun-kuo-kuo-min-tang, tang-shih pen-chi wei-yuan-hui, *K'o-ming wen-hsien*, (The records of revolution) (Taipei, 1955), hereafter referred as *K'o-ming wen-hsien*, VIII, pp. 128-140.
 9. Evelyn Sim Cher Lan, *op. cit.*, p. 12.
 10. Many years later, Victor Purcell, a British colonial official at the time, still could recall some of the KMT's anti-British propaganda, such as "British imperialism feeds on blood. . . ." Of course, this kind of anti-British literature was condemned

by the British censorship. See Victor Purcell, *The Chinese in Southeast Asia* (London, Oxford University Press, 1952), pp. 358-9.

11. The KMT was declared an illegal society in the Straits Settlements in 1914, but it was permitted legally in the Federated Malay States until 1925. See Alun Jones, "Internal Security in British Malaya, 1895-1942," (Ph. D. Dissertation, New Haven, Yale University, 1970), p. 194; Although the Malayan governments started to suppress the KMT in 1925, the KMT remained well established there. See Victor Purcell, *op. cit.*, pp. 358-9; It was only after Cecil Clementi assumed the posts of Governor of the Straits Settlements and Resident-General of the Federated Malay States in February, 1930, that an effective ban on the KMT was carried out in this area. For details, see *Anniversary Souvenir of the Association of the Expelled Overseas Chinese* (Nanking, 1934,) KMT Archives, Document No. 482/1, dated, 1934.
12. "Report of KMT Central Executive Committee, Office of Overseas Chinese Affairs," KMT Archives, Document No. 002/50, dated, 1925.
13. A report from the KMT South Seas Head Branch, KMT Archives, Document No. 002/21, dated December 10, 1932.
14. The labour movement and student movement were the two most important parts of the KMT's urban mass movement. The organization of the KMT branches in Malaya followed very closely the KMT's regulations on its overseas branches. Immediately after the reorganization in 1924, KMT branches in Malaya added Divisions of Workers and Youths into their party apparatus, with the apparent purpose of launching a mass movement among the youths and workers. See KMT Archives, Document No. 002/33; *K'o-ming wen-hsien*, VIII, pp. 59-69.
15. "Report of KMT Central Executive Committee, Office of Overseas Chinese Affairs," KMT Archives, Document No. 002/50, dated, 1925; Among these schools, one was Ch'i Ming School in Singapore Which was repeatedly raided by the local authorities and finally closed in 1926. See *History of First Sub-Branch in Singapore*.
16. The United Chinese Library not only had its own night classes, it also on many occasions performed plays to collect donations to grant financial support to Nanyang Girl School in 1924. See *Lat Pau* (a Chinese newspaper in Singapore), March 16, 1924; *Nanyang Girl School 50th Anniversary Souvenir* (Singapore, 1967), p. 24; One of the most zealous supporters of the KMT, The Kah Kee, made great contributions to help Tao Nan School from 1921 to 1929. See *Tao Nan School 60th Anniversary Souvenir* (Singapore, 1967), pp. 45-46; It should be noted that Tao Nan School was the first school to hold a memorial service for Sun in 1925. See *Lat Pau*, March 14, 1925.
17. Gene Hanrahan, *The Communist Struggle in Malaya* (Kuala Lumpur, University of Malaya Press, 1971,) p. 33.

18. Gwee Yee Hean, "Chinese Education in Singapore," *Journal of the South Seas Society*, XXV, p. 105, 1970.
19. C. O. 273/538, Report of Inspector-General of Police (Straits Settlements), Enclosure No. 1 to Straits Despatch No. 493, dated, August 27, 1927.
20. Yung Yuet-hing, "Contributions of the Chinese to Education in the Straits Settlements and the Federated Malay States, 1900-1941" (M.A. Thesis, University of Malaya, 1967), p. 72.
21. *Straits Times* (an English newspaper published in Singapore), March 14, 1927.
22. Namely, *Sin Kuo Min Poh* in Singapore, *Yik Khuan Poh* in Kuala Lumpur, *Nanyang Si Poh* in Sungei Patani and *Kwaong Wah Jit Poh* in Penang. See KMT Archives, Document No. 002/50, dated, 1925.
23. For example, *Sin Kuo Min Poh* was the first to initiate a commemorative service for Sun Yat-sen in 1927. See *Sin Kuo Min Poh*, March 3, 1927; C. O. 273/538, Report of IGP, Enclosure No. 2 to Straits Despatch No. 493 to Colonial Office, dated, August 27, 1927.
24. KMT Archives, Document No. 022/50, dated, 1925.
25. Png Poh-seng, *op. cit.*, pp. 220-221.
26. All the cabinet members of the Peking Government went to pay their tribute to Sun, and many warlords, even his bitter enemies paid lip service to Sun and admitted the greatness of his personality. See *Lat Pau*, March 13, April 11, 1925.
27. The famous warlord Chang Tso-lin in his eulogy admired Sun for his ceaseless efforts to advocate the Three Principles of the People. See *Lat Pau*, April 16, 1925; On the first anniversary of Sun's death, Sun Ch'uan-fang personally went to Nanking to pay his tribute at Sun Yat-sen's grave site. *Lat Pau*, March 11, 1926; Feng Yü-hsiang stated more than once that he would be a true follower of Sun Yat-sen. See Feng Yü-hsiang, *Wo-ti sheng-huo* (My life) (Shanghai, 1947).
28. *Lat Pau*, March 13, 16, 1925.
29. *Sin Kuo Min Poh*, from March 12 to April 10, 1925; *Lat Pau*, from March 12 to April 10, 1925.
30. *Lat Pau*, March 16, 1925.
31. *Kuo Wen Weekly Illustrated* (published in Shanghai), Vol. II, No. 18, May 17, 1925; *Lat Pau*, April 11, 1925.
32. *Sin Kuo Min Poh*, March 12, 1926; *Straits Times*, March 12, 1926.
33. C. O. 273/538, Report of IGP, Enclosure No. 2 to Straits Despatch No. 493, dated August 27, 1927.
34. *Straits Times*, March 14, 1927. The representatives Thong Yan Club were J. P. s or members of Chinese Advisory Board. They can be regarded as middle-ranking leaders in the Chinese community.
35. In 1926, the conservative *Lat pau* gave a detailed report on Whampoa Military Academy. The report appeared as a serial article, lasted for nine days. The report not only introduced the origins, purposes and structure of the Academy, it also

clearly stated the political principles of the KMT and the entrance requirements of the Academy. It looks like an advertisement for the KMT. Such a report more or less reflects that the conservative intellectuals as well as the common masses were attracted by the KMT. For the full text of the report, see *Lat Pau*, March 8 to 17, 1926. The growth of the prestige of Sun Yat-sen might also be reflected in an incident over Sun's portrait in a British liner, *Tai Shan*. In late February, 1927, when the ship owners found and took away Sun's portrait and Sun's teachings from a cabin of the ship, the Chinese crew started agitation. Later, through the good offices of the local Seamen's Union and the Shipping Company, the owners had to return the seized portrait and books. All the Chinese vessels in the port (Hongkong) simultaneously set off firecrackers in celebration of the "victory." For details, see *Straits Times*, March 12, 1927. Furthermore, soon after Chiang Kai-shek took the office as the Commander-in-Chief of the KMT's Northern Expedition Army, the KMT troops reached the Yangtze Valley, where the vital interests of Great Britain laid. A general strike against the British were called on December 4, 1926. In view of the rapid advance of the KMT troops and the rising anti-British sentiments in China, Great Britain wanted to make some compromise with the KMT. The newly appointed British Minister to China was instructed to visit Wuhan, the KMT headquarters at the time, before his proceeding to Peking. Meanwhile, Great Britain issued a memorandum which stated that Great Britain had always been willing to negotiate with the Chinese. For details, see *North China Herald* (published in Shanghai), December 17, 24 and 31, 1926. It seems that these new developments probably led the British colonial authorities in Malaya to change their decision of 1926 and to grant the Chinese community in Singapore to hold a huge memorial service for Sun in 1927.

36. *Nanyang Siang Pau* (a Chinese newspaper published in Singapore), March 15-17, 1927; *Sin Kuo Min Poh*, March 14, 17-21 and 31, 1927; *Lat Pau*, March 14-21, 1927. *Union Times* (a Chinese newspaper published in Singapore), March 14-21, 1927.
37. Among the sixty or so KMT members in Kuala Lumpur in 1924, nineteen of them were classified as school staff and thirty one of them were workers. See KMT Archives, Document No. 482/5, dated, 1924; Nevertheless, no effective union had been founded. See Charles McLane, *Soviet Strategies in Southeast Asia* (Princeton, Princeton University Press, 1966), p. 133; Although there might not workable student union be founded, some activities of the Communist Youth Corps can be detected in the schools. See Gene Hanrahan, *op. cit.*, p. 33.
38. *Straits Times*, March 14, 18, 1927; *Sin Kuo Min Poh*, March 14, 1927.
39. *Nanyang Siang Pau*, *Sin Kuo Min Poh*, *Union Times* and *Yit Khuan Poh* all called the incident as the Incident of National Memorial Day.

40. *Straits Times*, March 26, 1927; Evelyn Sim Cher Lan, *op. cit.*, p. 29.
41. *Straits Times*, March 29, 1927.
42. *Straits Times*, March 28-29, 1927.
43. Evelyn Sim Cher Lan, *op. cit.*, pp. 27-28.
44. *Lat Pau*, April 16, 1927.
45. *Straits Times*, March 30, 1927.
46. *Straits Times*, April and May, 1927; *Sin Kuo Min Poh*, April and May, 1927; *Lat Pau*, April and May, 1927.
47. See the statement made by G. G. Seth, Acting Attorney General before the court. *Straits Times*, March 18, 1927; C. O. 273/538. Report of IGP, Enclosure No. 2 in Straits Despatch No. 492 to Colonial Office, dated, August 27, 1927.
48. Charles McLane, *op. cit.*, pp. 132-133.
49. "Report of KMT Central Executive Committee, Office of Overseas Chinese Affairs," KMT Archives, Document No. 002/50, dated, 1925; *History of the First Sub-branch in Singapore*, KMT Archives, Document No. 002/33, dated, 1934.
50. KMT Archives, Document No. 482/5, dated, 1924.
51. C. O. 273/538, Report of IGP, Exhibit "12a" enclosed in Enclosure No. 2 in Straits Despatch No. 493 to Colonial Office, dated, August 27, 1927.
52. C. O. 273/538, Report of IGP, Enclosure No. 2 in Straits Despatch No. 493 to Colonial Office, dated, August 27, 1927.
53. KMT Archives, Document No. 435/242, dated 1931; *History of Second Sub-branch in Singapore*, KMT Archives, Document No. 002/33, dated 1934.
54. Yoji Akashi, "The Nanyang Chinese Anti-Japanese Boycott Movement, 1908-1928." Also see KMT central Executive Committee Secretariat, *Chung-yang tang-wu yeh-k'an* (Party affairs monthly), Vol. X, Nno. 39, October, 1931.
55. For details see Kee Yeh Siew, "The Japanese in Malaya before 1942," *Journal of the South Seas Society*, Vol. XX, pp. 48-88, 1966; Hsieh Chün-tu, "British Rule in Malaya, 1919-1939," *Journal of the South Seas Society*, Vol. XVIII, pp. 1-30, 1964; C.L. Yuen, "Expansion of Japanese Interests in Malaya, 1900-1941," (Doctoral Thesis, University of Malaya, 1973); Greg Gubler, "The Pre-Pacific War Japanese Community in Singapore," (M.A. Thesis, Brigham Young University, 1972); T. Nomura, *Nanyo no go-ju-nen* (Fifty years in the South Seas) (Singapore, 1937).
56. According to the British sources, in 1925, the first, second and third sub-branches of the KMT in Singapore were almost exclusively Hainanse while the fourth sub-branch consisted of fifty Cantonese. See *Monthly Review of Chinese Affairs*, August, 1934, cited in Lee Ting-hui, "Policies and Politics in Chinese Schools, in the Straits Settlements and the Federated Malay States, 1786-1914," (M.A. Thesis, University of Malaya, 1957), p. 136.
57. Yoji Akashi, *The Nanyang Chinese National Salvation Movement, 1937-1941*; Pang Wing Seng, "The double-seven Incident, 1937: Singapore Chinese Response to

the Outbreak of the Sino-Japanese War," *Journal of Southeast Asian Studies*, Vol. IV, No. 2, September, 1973.

58. Usually, the leaders in social movements can be divided into two types: the "bureaucrat" and the "enthusiast." The former is concerned with the organizational facet of a social movement, with its growth, stability and tactics, while the latter concerns himself primarily with the ideas and values which nourish the movement. See John Roche and Stephen Sachs, "The Bureaucrat and the Enthusiast: An Exploration of the Leadership of Social Movement," *The Western Political Quarterly*, Vol. VIII, No. 2, pp. 248-261, 1965.
59. C. O. 273/538, Report of IGP, Enclosure No. 1 in Straits Despatch to Colonial Office, dated August 27, 1927.

星洲“牛車水事件”之研究

古鴻廷

摘 要

在對海外華人社會的探討中，由於星馬地區的華人，不論在人數上及對當地政治與經濟的發展上，都具有舉足輕重的影響，星馬華人的政治活動，以及在這些活動中，中國國民黨所扮演的角色，因而成爲今日研究海外華人問題的一個重點。

十九世紀末，清廷、立憲派及革命黨各爲其政治目的，在星馬僑胞中展開活動，引發華僑政治意識之覺醒。辛亥革命推翻滿族統治後，爲消除地方勢力之割據，中國國民黨再度在星馬僑界展開活動，爭取其支持，這些活動促進星馬僑胞政治意識的成長及對祖國的政治認同。在星馬之英殖民地政府爲鞏固其統治，採取各種壓迫政策，企圖消除我國僑胞對我國的政治認同。民國十六年（一九二七年）的“牛車水事件”爲星馬華人社區與英殖民政府間的一項衝突，在牛車水事件中，英殖民政府一方面以武力鎮壓反英示威與罷工，另方面經由華人商會領袖出面疏解僑胞之不滿情緒，并利用當時星馬華僑社區中各方言群中之差異，採用“分而治之”的方法，將反英行動醜化爲一項由海南島來的下賤工人的暴動行爲。而中國國民黨雖一再以此事件之發展爲一反對殖民政府壓制華人政治向祖國認同的運動，但因華僑社區的內部意見分歧，以及罷工行動損及商業利益，而無法將整個星馬華僑團結起來，迫使殖民政府讓步，最後導致星馬華僑在對我國作政治認同的過程中，受到相當大的打擊。

作者以牛車水事件爲個案，探討一九二〇年代星馬華人政治意識的成長與中國國民黨在星馬地區之活動，以期能提供吾人對海外華人之政治活動有更進一步之瞭解。

The Establishment of Sino-Saudi Arabian Relations in 1946

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I. Historical Background

In the mid-seventh century A. D. both the Chinese and the Arabs were at a high point in their history, with the T'ang Dynasty in China and the Arab Empire (Chinese called Tajik).

In 655 A. D. the first Arab envoy was sent with gifts to the Chinese emperor T'ang Kao-tsung,¹ then established diplomatic and trade relations. According to Chinese records there were sixteen Arab missions during the Umajja period: in the years 681, 682, 703, 712, 716, 719, 724, 725, 726, 728, 729, 734, 742, 744, 745 and 747. In the Abbasid period there were eleven missions: in the years 753, 754, 755, 756, 758, 763, 769, 772, 774, 791, 798.² During this time also, Islam was introduced into China.³

Diplomatic relations between the two empires remained cordial until the middle of the 8th century, when they began to compete for control of Central Asia. In 751 Kao Hsien-chih, the governor general of An-hsi, was sent by the T'ang emperor against the state of Chack (modern Tashkent), but was defeated by Arabian troops at the battle of Talas,⁴ and as a result China was forced to give up claims to territory beyond the Tsung Mountains in south-western Sinkiang. This event of course tarnished China's reputation, but in 753 Arab envoys were again sent to China to reestablish friendly relations.⁵

In the T'ang Dynasty (618-906) and the Sung Dynasty (960-1279) Chinese foreign trade developed considerably, particularly with the Arabs, who became chief trading partners. The major export to China was jewellery. Many Arab traders lived for long periods in major trading ports such as Canton, Chuanchow and Yangchow. In Canton there was a designated area for them to live and an official to handle their affairs.⁶ In the 13th century a very wealthy Arab merchant called Abu (P'u Shou-Keng in Chinese) was appointed commissioner for maritime affairs in Chuanchow and held the post for thirty years.⁷ When Khoubilai Khan overturned the Southern Sung Dynasty in 1279, P'u Shou-Keng was appointed an official of the new dynasty and sent to foster friendly relations with countries around the South China Sea and the Indian Ocean.⁸

In the early Ming Dynasty, between 1405 and 1433, Eunuch-Admiral Cheng Ho made seven voyages to the South-west, reaching the east coast of Africa and the Arabian peninsula. As a result two Arabian States, Aden and Mecca, sent envoys

and gifts to the Ming emperor. Aden sent an envoy in 1416 and engaged in trade with China, and Cheng Ho personally visited Aden on his seventh voyage. In the middle of the 15th century, however, the Ming emperor stopped overseas expansion, and relations with Aden ceased from then on.⁹

II. Negotiations and Establishment of Relations between the Republic of China and Saudi Arabia

After its introduction to China in the 7th century, Islam became the most important religion after Buddhism and Taoism. In 1912, when the Republic of China was founded, there were 50 million Muslims in a population of 450 million. Every year many Chinese Muslims made the pilgrimage to Mecca. When Saudi Arabia became an independent kingdom in 1932, the Republic of China sent a vice-consul to Jidda to represent the interests of overseas Chinese and pilgrims. As there were no official relations between the two countries, however, the Saudi Arabian government did not give the Chinese vice-consul diplomatic status and he could not give very effective protection to Chinese nationals. For example if they died, their property was taken over by the Saudi Arabian government there rather than being returned to relatives in China.¹⁰ In 1942, therefore, the Chinese government opened negotiations with Saudi Arabia with a view to establishing formal diplomatic relations.

On April 24th, 1942 the Chinese Foreign Ministry received a report from the consul in Cairo, stating that an assistant to the Vice Minister of Foreign Affairs of Saudi Arabia, Jamil Dawod Bey had visited him and discussed the question of the property of Chinese Muslims who had died in Saudi Arabia. The Saudi Arabian official said that in order to deal with the problem it was essential to establish formal relations between the two countries.¹¹ In August 1st the Chinese Foreign Ministry instructed Ambassador Wellington Ku in London to take up the matter with the Saudi Arabian ambassador to Britain, Hafiz Wahba. Ambassador Ku did so, and forwarded the following reply in September:

"I am instructed to assure your Excellency that the Saudi Arabian Government have the greatest sympathy for the Chinese Nation in their present trial and watch with the greatest admiration their heroic defence of their land, rights and liberty, which defence the Saudi Arabian Government sincerely hope will be crowned with victory. Furthermore, the Saudi Arabian people, as an Islamic Nation, have been bound to the Chinese people by ties of friendship, unity and regard from ancient times. Chinese culture and civilization were always held in the highest respect by the Arabs particularly and the Muslims generally. The Saudi Arabian Government are of the opinion that these old ties are stronger than any written treaty. They are also ready to offer every assistance to any Chinese subjects in Saudi Arabia. However, if the Chinese Government consider it necessary to conclude a treaty of Amity with the Government of Saudi Arabia, the latter would be very pleased to do so, as soon as the war is over and peace has been restored to our troubled world."¹³

In April 19th, 1944 the Chinese ambassador to Iran, Li Tieh-tseng, reported that in Baghdad he had met the Prime Minister of Lebanon, who had said that the King Abdul-Aziz of Saudi Arabia was willing to conclude a treaty of friendship with the Republic of China. Thereupon the Foreign Ministry instructed the Chinese ambassador to Egypt, Hsu Nien-tseng, to raise the matter with the Saudi Arabia ambassador there.¹⁴ In fact he took up the question with the Saudi Arabian Finance Minister (former ambassador to Egypt), who in turn promised to report it to the King.¹⁵ Later, the Saudi Arabia ambassador to Iraq was instructed to inform First Secretary Yu of the Chinese embassy to Iran stayed in Baghdad, that the treaty of friendship was agreed in principle. The Chinese Foreign Ministry then instructed Ambassador Li in Iran that Secretary Yu should use the Sino-Turkish treaty as a basis for discussion for the Sino-Saudi Arabian one.¹⁶ In August 4th, 1944 the Saudi Arabian ambassador to Iraq made the following three points in letter to Ambassador Li:

1. As a result of the conversation between me and Your Excellency, my Government has expressed its readiness to conclude a friendly treaty between our two countries, and ordered me to inform you only of such readiness to conclude a treaty.
2. During Your Excellency's absence from Baghdad, I have informed Mr. Yu of all this and explained to him very well that my Government can have no way to be restricted by the text of any Clause or Treaty whether it was between China and Turkey or some country else, because treaties which the Kingdom of Saudi Arabia concludes with other nations have a traditional form from which our Government will not depart.
3. The City of Jidda has been always the place for negotiation of treaties between the Kingdom of Saudi Arabia and other Governments and for this reason my Government consents to open negotiation with Your Excellency in the city of Jidda.

Ambassador Li then enquired of the Foreign Ministry whether these three points should be conceded.¹⁷

The negotiation of the treaty in fact took place in Baghdad. The Republic of China accepted the view of the Saudi Arabian government that the existing treaty between Saudi Arabia and Turkey should serve as a model for the proposed Sino-Saudi Arabian treaty.¹⁸ In return the Saudi Arabian government agreed to Articles 5 and 6 of the Republic of China's draft. In September 1946 the final draft was prepared. The Saudi Arabian acting ambassador in Iraq requested the government of the Republic of China to send a representative to Jidda to sign the treaty, preferably at the end of October when the King Abdul-Aziz would have returned from Mecca to Jidda.¹⁹

III. The Signing of the Treaty of Amity Between the Republic of China and the Kingdom of Saudi Arabia

In early October, 1946 the Republic of China appointed Mr. Cheng Ye-t'ung, ambassador to Iran, as its fully-accredited representative for the signing of the treaty. He arrived in Jidda at the November 11th, and was welcomed at the airport by Youssif Yasseen, the acting foreign minister of Saudi Arabia. Ambassador Cheng was later welcomed by the King Abdul-Aziz, who gave a reception in his honour.²⁰ On November 15th, after it was agreed the treaty would be signed at the Foreign Ministry on the following day, a second reception was held by the King Abdul-Aziz, at which he presented Ambassador Cheng with a jewelled sword and an Arab robe.²¹

On November 16th, 1946 the treaty was formally signed. It contains the following seven articles:

ARTICLE I

There shall be perpetual peace and amity between the Republic of China and the Kingdom of Saudi Arabia as well as between their people.

ARTICLE II

The High Contracting Parties agree to establish diplomatic relations between the two States in conformity with the principles of Public International Law.

(ARTICLE II - continued)

They also agree that the diplomatic representatives of each State shall enjoy, on the basis of reciprocity, in the territory of the other, the treatment recognized by the general principles of Public International Law.

ARTICLE III

The High Contracting Parties agree that either High Contracting Party may establish consulates in such localities of the territory of the other as may be agreed upon.

The consular officers of either High Contracting Party shall enjoy, on the basis of reciprocity, in the territory of the other, the treatment recognized by the general principles of Public International Law.

ARTICLE IV

The High Contracting Parties agree that the nationals of either High Contracting Party residing or travelling in the territory of the other shall be accorded the most

favoured nation treatment in regard to the protection of their person and property.

ARTICLE V

The High Contracting Parties agree that on the death of a national of either High Contracting Party in the territory of the other, if there is no lawful trustee to take care of the property of such a national. such property, after the carry out of judicial procedures concerned, shall be handed over to the nearest consular officer of his own country for forwarding to his rightful heir.

ARTICLE VI

The High Contracting Parties agree to regulate in a convention to be concluded later the commercial relations between their respective countries.

ARTICLE VII

The present Treaty shall be ratified with the least possible delay by the High Contracting Parties in accordance with their respective laws. The instruments of ratification shall be exchanged as soon as possible.

After formal ratification, the treaty went into effect from April 24th, 1948.²²

V. Conclusion

Since the signing of this treaty, diplomatic relations between Saudi Arabia and the Republic of China have flourished. In 1949 the Chinese communists took control of the mainland of China and government of the Republic of China retreated to Taiwan, but the Kingdom of Saudi Arabia, as an anti-communist power, maintained the treaty with the government in Taiwan. In the last twenty years there has been considerable economic, scientific, medical and cultural cooperation and exchange between the two countries, and the Republic of China greatly appreciates the strong support of Saudi Arabia during the current diplomatic offensive of the Chinese Communists.

Footnotes:

1. *Chiu-tang-shu* (The Tang History, Old Edition), vol. 4.
2. *Ts'e-fu-yuan-kuei* (An Encyclopaedia in early 11th century), vol. 970-976.
3. Fang Hao, *History of the Sino-Western Communications*, 1953, Taipei. p. 235-236.
4. *Chiu-tang-shu*, vol. 109, Biography of Li Szu-Yi.
5. *Ts'e-fu-yuan-kuei*, vol. 971.

6. Chien Kung-Po, History of the Chinese Economical Development, 1964, Taipei. p. 271-272.
7. Lo Hsiang-Lin, A Study of P'u Shou-Keng, 1959, Hongkong. p. 40.
8. *Yuan-shih* (The Yuan History), vol. 10.
9. *Ming-shih* (The Ming History), vol. 326, Biography of Aden.
10. Year Book of 1947, Wu-Han Daily News, Foreign Affairs, p. 37.
11. Archives of Ministry of Foreign Affairs, "Treaty of Amity between the Republic of China and Saudi Arabia." March 15th, 1942 telegram from the consul in Cairo.
12. Ibid. August 1st, 1942 telegram to the Chinese Embassy in England.
13. Ibid. September 15th, 1942 telegram from the Chinese Embassy in England.
14. Ibid. April 23th, 1944 telegram to the Chinese Embassy in Egypt.
15. Ibid. May 4th, 1944 telegram from the Chinese Embassy in Egypt.
16. Ibid. July 9th, 1944 telegram to the Chinese Embassy in Iran.
17. Ibid. August 27th, 1944 telegram from the Chinese Embassy in Iran.
18. Ibid.
19. Ibid. September 10th, 1946 telegram from the Chinese Embassy in Iraq.
20. Ibid. November 11th, 1946 telegram from the Ambassador Cheng Ye-tung in Jidda
21. Ibid. November 15th, 1946 telegram from the Ambassador Cheng Ye-tung in Jidda.
22. Treaties between the Republic of China and Foreign States, p. 422-423.

一九四六年中沙外交關係的建立

呂士朋

自第七世紀中期，大食帝國遣使至唐，阿拉伯與中國就有了外交和貿易關係，而回教也同時傳入中國。歷宋、元以迄明初，雙方貿易廣續不斷。

回教傳入中國後，傳佈甚廣，成爲僅次於佛教、道教的主要宗教。中華民國成立後，中國人口四億五千萬中，回教徒約佔五千萬人，而每年前往麥加朝聖之回教徒，爲數甚多。沙烏地阿拉伯王國於一九三二年獨立後，我國未曾與彼建立邦交，因此對照料朝聖之我國回教徒，頗感困難。尤其遇有朝聖者病故，其遺產即遭沙國保管，損失甚大。

爲保護我國朝聖者權益，自一九四二年起，我國即開始進行與沙國建交的努力，從試探接觸以至磋商談判，終於一九四六年十一月十六日，簽訂中沙友好條約，我國特派駐伊朗大使鄭亦同爲全權代表，前往吉達簽約，受到沙國國王伊本·紹德的隆重接待。自中沙友好條約簽訂後，我國派有使領駐在沙國，我國朝聖者獲得充分保護，遇有朝聖者病故，其遺產亦經由我領事料理，發還死者在中國之繼承人。

近二、三十年來，中沙兩國始終保持友好合作關係，我國對沙國有農耕、醫療、科技等方面的幫助，而沙國對我則有石油輸出，而在外交上亦相當支持我國。

朱子心性之學綜述

蔡仁厚

摘 要

甲、朱子性理義的綜合說明

- 一、性卽理，而且只是理
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- 三、義理之性與氣質之性
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- 一、心是氣之靈——實然的心

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三、大學格物補傳的思想格範

四、結語：心與理爲二

朱子(熹)在六百年的宋明儒學中，始終居於一個中樞的地位。他的心性思想，前有所承(如程伊川)，後有所開(如宋季元明的朱子學派)。而且無論在他當代或後世，都有強勁的論敵(如陸象山、王陽明)。朱子所引出的思想端緒與學術層面，繁富而廣博。筆者歷年來也粗有論著加以研究。本文擬就朱子的心性之學提出一個綜括而扼要的敘述和分判。全文分甲乙丙三節，以論述朱子的性理義，朱子的心論與心性工夫，並對朱子系統中心與理的關係，試圖作一步更爲明確的釐定。

甲、朱子性理義的綜合說明

有的學者說：「朱子對於性的看法屢經變易。」(1)這不但是可能的，也是很自然的。一個思想家的系統之完成，常不免會有曲折的過程，朱子如此，王陽明也如此。(只有陸象山是個例外。象山「因讀孟子而自得於心」，他的思想，終身一貫而不變。)不過，本文不擬考察朱子心性思想的發展(2)，而只着重於講述他心性之學的綱宗實義。

一、性卽理，而且只是理

朱子奉程伊川「性卽理也」一語爲性理學之圭臬，而且認爲這四個字直是顛撲不破，是「千萬世說性之根基。」(3)〔朱子語類〕書中對於性、情、心等，有很集中的討論。(4)關於「性」的部分，有如：

性卽理也。在心喚做性，在事喚做理。

性只是此理。

生之理謂性。

性則是純善底。

「性即理也」，這是從理說性。同時，性也「只是理」，不是別的。所以性不是心，也不是情；心與情皆屬於氣（說見下文），只有性才是理，也只是理。（如此而說的性理，實屬性理之偏義。說見下文。）如果關聯告子「生之謂性」之說，朱子也已清楚地作了分別，認為生不是性，其所以生之理才是性。性既然即是理，理無不善，所以性無不善，性是純善的理。朱子又說：

性是天生成許多道理。

性是許多理，散在處為性。

性是實理，仁義禮智皆具。

問：「性既無形，復言以理，理又不可見。」曰：「父子有父子之理，君臣有君臣之理。」以上四條可以合起來看。性，是先天生成的許多道理，這許多道理散在個體，便叫做性。性是理，而且是實理（仁義禮智）。朱子說「在事喚做理」（見上引），性（理）無形，即「事」而見；處父子，處君臣，皆是事，所以「父子有父子之理，君臣有君臣之理」。依類而推於夫婦兄弟朋友，以及應事接物、為政治國，也莫不皆然。

又一條云：

鄭問：「先生謂性是未發，善是已發，何也？曰：「才成個人影子，許多道理便都在那人上。其惻隱便是仁之善，羞惡便是義之善。到動極復靜處，依舊只是理。」

依朱子，性是理，理是靜的實有，所以是「未發」。發出來的（如惻隱之仁，羞惡之義）才是善，所以善為「已發」。但接下去朱子又說：

在天地言，則善在先，性在後……在人言，則性在先，善在後。

他所謂「在先」之善，是指理言。理散在於人，方為性；所以就天地而言，善（理）在先而性在後。（按、在此雖說性在後，卻不能說性為已發。）至於就人而說的「在後」之善，實乃指德而言。須有天命之性，而後乃能成就善德；所以就人而言，性在先而善（德）在後。

又一條云：

性不是卓然一物可見者，只是窮理格物，性自在其中，不須求。

性，不是一個有形可見的具體物，它只是理，是形上的實有。（故語類卷五又云：道即性，性即道，固只是一物。）性既然是先在的，所以「不須求」。但這個「只是理」的性，其本身卻不能活動發用，因此要通過格物窮理的工夫，使心知與物理關聯貫通，然後乃能使心氣活動順性而如理，以成就道德價值。

二、理同氣異與枯槁有性

朱子論心性，常直接關聯理氣而說。〔朱子大全〕載有他與黃商伯討論理氣同義的問題：

問曰：「大學或問言：人物雖有氣稟之異，而理則未嘗不同。孟子集註謂：以氣言之，則知覺運動，人與物若不異；以理言之，則仁義禮智之稟，豈物之所得而全哉？二說似不同，豈氣既不齊，則所賦之理亦隨之以異歟？」

答曰：「論萬物之一原，則理同而氣異。觀萬物之異體，則氣猶相近，而理絕不同也。氣之異者，粹駁之不齊。理之異者，偏全之或異。幸更詳之，自當無可疑也。」（5）

這裡所謂「理同」，是說人與物普遍地皆有性（性即理也），而且其所具的性，是一、是同。所

謂「氣異」，是說每一個體所稟受的氣，或純粹，或駁雜，並不齊一。可見「理同氣異」是從「萬物一原」而言之。換一個角度看，正因為人與物稟氣不齊，所以對於理的表现也就有偏有全，並不一致；甚至還有「能表現」與「根本不能表現（如土石等）」的差別。

據此可知，所謂「理之異」、「理絕不同」，並不是說理本身有異有不同（理是一是同，不容有異），而只是指說「人」與「物」在理的表现上有差等之異。至於所謂「氣猶相近」，乃指「知覺、運動」而說。知覺運動是氣的作用，在這上面，人與物的差異不大，所以說「相近」。氣猶相近，是說人與物在氣上猶有相近之處。既有相近者，自然也會有不相近者；正因為有不相近的差別，所以在「理的表现」上，人與物「絕不同」。反之，假使人與物「氣全相近」，便不能說「理絕不同」了。〔大學或問〕中的說法，是「論萬物之一原，則理同而氣異」。〔孟子集註〕中的說法，是「論萬物之異體，則氣猶相近，而理絕不同」。這兩處所說，是朱子論理同氣異非常重要的話。（此外，又有理氣不離不雜、理先氣後、理之一與多、理一分殊等等之說，本文不擬多論。拙撰〔宋明理學南宋篇〕頁二〇六至二一八有說明，可參閱。）

根據「理同」之義，朱子又有「枯槁有性」（性、即理也）之說：

天之生物，有血氣知覺者，人獸是也。有無血氣知覺而但有生氣者，草木是也。有生氣已絕而但有形質臭味者，枯槁是也。是雖有分之殊，而其理則未嘗不同。但以其分之殊，則其理之在是者不能不異，故人為最靈而備有五常之性，禽獸則昏而不能備，草木枯槁則又並其知覺者而亡焉，但其所以為是物之理則未嘗不具耳。若如所謂纔無生氣便無此理，則天下乃有無性（理）之物，而理之在天下乃有空闕不滿處也，而可乎？」（6）

朱子之意，認為天下沒有無性之物，性即是理，理遍在於天地萬物，不容許有「空闕不滿」之處。無論有血氣知覺者，無血氣知覺而只有生氣者，或生氣已絕而只有形質臭味者，一切皆有其所以為是物之理以為性。這「為體」之理與「為性」之理，是同一的，「為其體」等於「為其性」。朱子從「理同氣異」而說「枯槁有性」，乃是形上學的命題。若就萬物既得此理以為性之後的表现上說，便是另一個說法：「氣同而理異」（說見上文）。在知覺運動上，人與物實無差別，而「仁義禮智之稟」，則「非物之所得而全」。人之所以貴於物而為萬物之靈，便是在這裡建立。

三、義理之性與氣質之性

自古論性，有告子「生之謂性」所代表的一系（荀子也在其中），有孟子承孔子之仁而開發性善所形成的儒家正宗一系。到北宋張橫渠，綜括之而提出「天地之性」、「氣質之性」（7），儒家言性的線索，乃瞭然明白。

張子所謂「天地之性」，是承其〔正蒙〕誠明篇「性者，萬物之一源，非有我之得私也」而言；如此說性，是要充分顯示性體之超越的普遍性。這當然是「以理說性」。朱子改用「義理之性」（有時也用「本然之性」），意思較「天地之性」一詞更為明確，所以學者皆沿用之。至於「氣質之性」，則是在道德實踐中、由於性體不能暢通起用、而被肯定。這道德實踐過程中的滯礙險阻，實際上即是人自身氣質的偏與離。張子提出「氣質之性」一詞，正是就人的氣質之偏雜（所謂氣質的特殊性），而說一種性。凡順「生之謂性」這個線索而來的「氣性、才性」之類，都可以用「氣質之性」加以綜括。而西方人所說的人性，以及一般所謂脾性、性向，也是指這種性。

就道德實踐而言，氣質之性乃是一個「限制原則」，這是氣質之性的消極意義。但氣質之性也同時具有積極的意義。何以言之？因為人的道德實踐不能離開氣質而表現，性理也同樣要落實在氣質生命中流行發用，始能表現出具體的道德行為。就此而言，氣質或氣質之性又是「表現原則」，這就是它的積極意義。而此積極的表現與消極的限制，又是同時常在的；而個體生命的表現，也永遠是在限制中表現。正視這種限制，由「率性」而「盡性」以求衝破限制，使道德生命能夠通達於無限（譬如與天地合德、與萬物為一體），是即儒家所講論的緊切的道德實踐工夫。

「變化氣質」便是面對氣質之限制而提出的一種工夫。從氣性而說的「清濁、厚薄、剛柔、緩急」，以及從才性而說的「智愚、賢不肖」，都是氣質之偏。在氣質之偏中，有善的表現，也有惡的表現；表現惡的行為固然不好，而在氣質之偏中表現善的行為，也不會是圓滿的「純善」。所以必須通過「變化氣質」的工夫，使「氣質之偏」中的「善惡混歧之表現」，逐漸轉化為「無所偏」的「純善」之表現。換言之，所謂變化氣質，就是要使那作為「限制原則」的氣質之性，逐漸減消它的限制作用，轉而發揮出它作為「表現原則」的表現功能。

以上是順張子之意，對「義理之性」與「氣質之性」略作解說；程伊川的講法，也與張子並不相異。(8)但朱子對於「氣質之性」的說法，卻顯得很特殊。

朱子所講的「性即理」之性，自屬「義理之性」，這是直指性理而言。就此性理本身說，它與「氣」不相混雜；而「氣質之性」則是此義理之性「墮在氣質之中」，是氣質裡邊的性，已染雜了特殊的顏色，所以不同於那原來的「純然、本然」的義理之性。朱子答徐子融書有云：

又謂枯槁之物只有氣質之性，而無本然之性。此語尤可笑。若果如此，則是物只有一性，而人卻有兩性矣。此語非常醜差。蓋由不知氣質之性只是此性墮在氣質之中。(9)

徐子融的來信不存，他的說法已無從詳究；而朱子加以陋視，自是由於雙方對「氣質之性」與「本然之性（義理之性）」的理解有所不同之故。如果依孟子義，則徐子融的說法也不見得有什麼「可笑」，更無所謂「醜差」。因為通常所謂「氣質之性」，乃是就氣質才質的殊異而說一種性，也即所謂氣性、才性。據此而言，則人實有「兩性」（可以就兩個層面說性）；而物則只有「一性」（只能就一個層面說性）。孟子也說過：

口之於味也，目之於色也，耳之於聲也，鼻之於臭也，四肢之於安佚也，性也，有命焉，君子不謂性也。仁之於父子也，義之於君臣也，禮之於賓主也，智之於賢者也，聖人之於天道也，命也，有性焉，君子不謂命也。(10)

這一段話，正表示人之性有兩個層面可說。不過，人之所以為人的真性，卻並不在氣質一面（口之於味等），而是在於內在的道德性一面（仁義禮智等）。張橫渠所謂「形而後有氣質之性，善反之，則天地之性存焉。」(11)也正表示人之性可以從二個層面說。就此而言，不但枯槁之物沒有本然之性，就是禽獸之類也不能有本然之性（內在道德性）。

而朱子的講法是另外一個理路，他是根據「理同氣異」之義，認為性只是理（所以然之理），只有一個（是萬物之一原），而「氣質之性」則是此本然之性「墮在氣質之中」。這是表示，所謂「氣質之性」並不是外於本然之性的另一種性，而是局限於氣質裡面而表現的性。依朱子，性理（本然之性）通於人物，所以不能說枯槁之物只有氣質之性而無本然之性。就具體的人與物而言，由於關連到氣，所以性（本然之性）實已墮於氣質（個體形氣）之中，朱子便是落在這裡而說氣質之性。因為氣質不同，所以人物有別；而人與物之表現理（性），也因為稟氣不齊而有偏全之異。朱子這個講法——

- 1.不合通常所講的意思，他似乎只承認氣質有偏雜，而卻不許就氣質之偏雜而說一種性（自然之性）。
- 2.輕忽了「生之謂性」一路而來的「氣性」、「才性」之獨立的意義。
- 3.人物未生時，性不可說；而性（本然之性）又墮在氣質之中。然則，那未經氣質濾過的本然之性（義理之性）將如何解說呢？性（理）與個體生命之活動（心、情之活動）是一種什麼樣的關係呢？

這第3點尤其成爲朱子心性之學的一大關鍵。下段將就朱子的性理義先作一明確的解析。至於心與理的關係，則留待下文丙節再作討論。

四、性理的全義與偏義

性是理，而且只是理。這是朱子貫徹程伊川之轉向而完成的一個新說統。二程兄弟講學之時，主要觀念發自明道。（故早期弟子劉質夫、李端伯所記，皆爲明道之語而不及伊川。據二程遺書及宋元學案，可知。）明道卒後，伊川獨立講學逾二十年，終於使他的生命與思路逐漸透顯出來。伊川順著自己質實的、直接分解之思考方式，把道體與性體皆體會爲「只是理」。既然只是理，就表示它不是心，不是神，也不能就道體性體說寂感。於是一一

- (1)道體的「神」義（妙運生生）、「寂感」義（寂然不動，感而遂道），既已從道體脫落下來，則道體便成爲「只存有」而「不活動」的理，而本體的創生義，也隨之而泯失。講道體是如此，講性體亦然。
- (2)伊川又將孟子的「本心卽性」，分解爲心性情三分；「性」只是形上之理，「心」與「情」則屬於形下之氣。理（性）上不能說活動，活動義便落在氣（心、情）上說。於是性體也成爲「只存有」而「不活動」。(12)

在伊川自己，其義理的轉向是不自覺的，他當時並不覺得自己所講和他老哥明道的義理出現差異，而二程門人也似乎無所覺察；直到伊川卒後六十餘年，朱子四十歲中和參究論定，才使伊川這個思路明朗出來。這其中的端緒線索及其涉及宋明義理分系之處，本文不擬講論。(13)現只就「性理」之全義與偏義，作一簡要之說明。

首先，我認爲牟先生〔心體與性體〕書中所疏決開立的「性體五義」與「心體五義」(14)，極爲深透而精當，也足以概括宋明儒講心性之學的義理網維。

性體五義：性體義、性能義、性理義、性分義、性覺義。

心體五義：心體義、心能義、心理義、心宰義、心存有義。

人在講說或行文之時，雖然可以舉示性體或心體之某一義以爲說，但實際上，任何一義皆與其餘四義相通。綜性體五義之全，可以統名爲「性體」，也可名之爲「性」或「性理」。這通着其餘四義而說的性體（性理），卽是性理的「全義」。這全義的性理，是宋明儒所共許的基本大義。所以「性卽理」這句話，並沒有任何人加以否認。陸象山和王陽明雖然着重說「心卽理」，但在二人的文獻裡也同時說「性卽理也」。因爲陸王依據孟子「本心卽性」之義，心性本是一，性是理，心同樣也是理。如此而說的性理，也正是性理的「全義」。

但首先講出「性卽理也」的程伊川，卻是在他「心性情三分」的背景之下、而分解地說這句話的。因爲依伊川的思理，心是實然的心氣之心，心並不卽是性，也不卽是理，也不卽是道（必須通之以道，心才能順性、如理、合道）。所以推究其實，心與性分而爲二，心與理也分而爲二

。而情則是心之已發，故伊川又有「仁是性，愛（惻隱）是情」的分別。⁽¹⁵⁾在這種分解的思想格局中所說的「性即理」，正如伊川朱子常用的補足語「性只是理」所顯示的，它只是偏於「性體五義」中的第三義（性理義）而說的性理。這樣說的性理，雖可兼含第一義的性體義以及第四義的性分義，但第二義的「性能義」與第五義的「性覺義」，則必歸於泯失。所以伊川朱子所說的「性理」，事實上只是性理的「偏義」。（如借用佛家語，則伊川朱子所講「性只是理」的性理，乃是「但理」。但者、僅辭也。）

關於性理的全義與偏義，可以簡括地如此規定：

甲、性理的全義——性即是理（理與心、神、寂感通而為一）：理是創生原理，能妙運氣化之生生，所以是「即存有即活動」的。（按、兩「即」字，猶今語所謂「同時」；意即它同時是形上的存有，也同時即是創生活動的動源。）

乙、性理的偏義——性只是理（心、神、寂感，從性體脫落下來而歸屬於氣）：（一）自宇宙論而言，理與氣相對而為二，神與氣亦為二。（二）自道德實踐而言，心與性相對而為二，心與理亦為二。因此，理只是本體論的靜態的實有，卻不能妙運生生以起創造作用，所以是「只存有而不活動」的。

朱子順承伊川的思路，正是將道體與性體皆體會為「只存有而不活動」，他貫徹伊川的轉向，而完成另一個新的義理系統：

1. 從客觀面說，是本體論的存有系統——而本體宇宙論⁽¹⁶⁾地說，太極或理是本體論的存有，氣化萬殊是宇宙論的生化。
2. 從主觀方面說，是靜涵靜攝系統——靜涵、是心氣之靜態的涵養，靜攝、是心知之認知地攝取（攝理歸心）。綜括起來說，可曰橫攝系統（見註17）。

在伊川朱子系統中的「心、性、理」既然義有偏指而歧出，自然就和程明道以及陸王諸儒之縱貫系統⁽¹⁷⁾中的「心、性、理」三者同層同位的意指，有了差異。因此，凡是將「道體、性體、心體、仁體」體會為「即存有即活動」的義理，朱子皆不能相應契會而常滋生誤解。換句話說，凡是屬於本體宇宙論的立體直貫型（縱貫創生系統）的辭語，朱子皆不能加以欣賞，加以正視。他實已脫離宋明儒正宗大流的「逆覺體證」之路——朱子之師李延平，是超越的逆覺體證之路；與李延平同時的胡五峯，則是內在的逆覺體證之路。⁽¹⁸⁾朱子對二者皆不採取，他是越過了師門三代（李延平、羅豫章、楊龜山）而直接上承程伊川「涵養須用敬，進學則在致知」二語，而開出了「靜養動察，敬貫動靜，即物窮理」的工夫格局。（下一節將有說明。）

乙、朱子的心論與心性工夫

錢穆先生〔朱子新學案〕書中，將朱子論心的文獻，條列為「論心與理」、「論心與性情」、「論人心與道心」、「論識心」、「論放心」，以及「泛論心地工夫」與「論心雜掇」等目而略作解說。⁽¹⁹⁾就學術考辨與文獻資料之類聚而言，此確有貢獻。但學者如想掌握朱子論心以及其心性工夫的思想脈絡，進而明瞭其義理的分際，則仍須各自經過一番分疏判定，方能得一明確的了解。本節不能涉及太廣，故約為三段作一說明。

一、心是氣之靈——實然的心

朱子不許可陸象山「心即理」之說，並非故意示異。根本上，朱子只承認「性」是理，而「

「心」則屬於氣。這一個概念層上的本質性的分別，即使認為「朱子之學徹頭徹尾乃是一項圓密宏大之心學」的錢穆先生，也仍然不能不承認「朱子分說理氣，性屬理，心屬氣。」⁽²⁰⁾就義理系統的概念斷定而言，朱子自己所掌握的分際，實在非常清楚。他說：⁽²¹⁾

心者，氣之精爽。

所覺者，心之理也；能覺者，氣之靈也。

問：「靈處是心，抑是性？」曰：「靈處只是心，不是性，性只是理。」

第一條「精爽」二字，語本〔左傳〕昭公七年：「用物精多則魂魄強，是以有精爽至於神明。」疏云：「精、亦神也，爽、亦明也。」左傳的原意，是鄭國大夫子產解說人死後為鬼神這件事。而朱子則借此二字以言心。精是粗之反，爽是昧之反。氣之「粗者、昧者」聚而成物形，而氣之「精者、爽者」，則顯發心之知覺靈明之用。第二條指出，心之「理」是「所覺」，氣之「靈」是「能覺」；能知能覺，正是心的基本作用。所以第三條問到「靈處」是心、還是性時，朱子的回答很清楚：「靈處是心，不是性」。

心官至靈，藏住知來。

心須兼廣大流行底意看，又須兼生意看。

這一條便是指說心氣之靈的氣化不息，所以「心官」能「藏住知來」。次條就「心」字言「生」，是落在實然之氣上、就氣之陰陽動靜而言。朱子就實然的心氣之靈而說「廣大流行」，其意指與明道諸儒所講的天命流行之體的「於穆不已」並不相同，與本心仁體之作為道德創生實體的創生義也不同。朱子就「氣之靈、氣之精爽」而言之，只是實然的心氣之心。朱子又說：

性、猶太極也，心、猶陰陽也。太極只在陰陽之中，非能離陰陽也。然至論，太極自是太極，陰陽自是陰陽。惟性與心，亦然。

這一條最明確。先說「太極」與「陰陽」之關係，指出太極不能離陰陽而顯現。同樣，性（理）也不能離心（氣）而顯現。但太極是形上之理，陰陽是形下之氣，二者不同質，不同層，所以說「然至論，太極自是太極，陰陽自是陰陽」。而最後二句說：「惟性與心，亦然。」這很清楚地表示，性與心的關係，也恰如太極之於陰陽。性自是性，是理；心自是心，是氣。心畢竟不能即是性（理）。因此，朱子又有「心有善惡，性無不善」之說。⁽²²⁾

簡括朱子之意：心，是氣之靈，能知覺，有動靜；而其所以知覺、所以動靜的所以然之理，則是性。因此，心不是性，也不是理。如此論心，自非孟子之本心義。當然，講本心，也無須否認氣之靈的心或知覺義的認知心。二者只是不同質不同層（一為德性層，一為知性層），卻並非矛盾對立。⁽²³⁾但孟子義的本心，則不可以氣論，也不可以知覺認知論。就道德本心而說知說覺，其知乃德性之知，其覺乃良知明覺。

二、心統性情的實義

性是理，心是氣之靈，情則是心氣之發（或心氣之變），此之謂「心性情三分」。語類卷五有云：

問心性情之辨，曰：「程子（伊川）云，心譬如穀種，其中具生之理是性，陽氣發動處是情。推而論之，物物皆然。」

伊川「心譬如穀種」，以及「仁是性、愛是情」（見上甲節第四段）之說，朱子屢加引用。這個說法用表式列出來，即可明顯地看出乃是心性情三分的格局：

心——譬如穀種（總持地說）
 其所以生之理——是性（仁是性）
 陽氣實際發處——是情（愛是情）
 心性情三分

據此表所示，可以看出伊川朱子所說的「譬如穀種」的心，正是實然的心；情，是陽氣實際發動處；性，則是心之所以發的理。至於「心、性、情」三者的關係，朱子則借張子〔正蒙〕書中「心統性情」之言以為說。語類卷五有一條云：

舊看五峯說，只將心對性說，一個情字都無下落。後來看橫渠心統性情之說，乃知此話大有功，始尋得個情字着落，與孟子說一般。孟子言惻隱之心，仁之端也。仁、性也，惻隱、情也，是在情上見得心。又言仁義禮智根於心，此是性上見得心。蓋心便包得那性情。性是體，情是用。心字只是一個字母，故性情皆從心。

胡五峯（宏）的思想是「心性對揚，以心著性。」⁽²⁴⁾依五峯，性是自性原則，心是形著原則，心已含攝了情（情、即仁心本情），並不是「情」字沒有下落。胡五峯的系統與朱子四十歲以後所完成的系統不同路數，所以常常招致朱子的誤解。而他對胡子〔知言〕一書所提出的八端致疑（見〔宋元學案〕卷四十二、五峯學案引錄），也只是不相應的誤解。而張橫渠所謂「心統性情」，本是一句獨立的孤語，其意指不易確定。朱子引用這句話，是以他自己「心性情三分」的格局來作說明。他順伊川「仁性愛情」之說，以仁義等為「性」，以惻隱羞惡等為「情」，而性與情皆為「心」所統。如此而說的「統」，乃是「統攝」之統（朱子自己就有「心統攝性情」的話，見下引）。至於他引孟子的話作解析，也是根據自己的思路以為說，並不合孟子的本意，孟子並非心性情三分也。最後二句說心字是字母，性字情字皆從心，則是不相干的話。講義理和解字義是兩回事，不必拉扯。

語類卷五還有不少條說到心統性情，如：

性是未動，情是已動，心包得已動未動。蓋心之未動則為性，已動則為情，所謂心統性情也。

性以理言，情乃發用處，心即管攝性情者也。

心，主宰之謂也。動靜皆主宰，非是靜時無所用，及至動時方有主宰也。言主宰，則混然體統自在其中。

心統攝性情者，非籠侗與性情為一物而不可分也。

這三條都說「心統性情」。性是未動（未發），情是已動（已發），心則統攝未發之性與已發之情。換言之，心性情雖三分，但無論靜時未發之性與動時已發之情，總是為心所統攝（包、管攝，意也同於統攝）。而第三條又用「主宰」說心，主宰二字易起誤會。牟先生特為指出，朱子就心而說主或主宰，實只是管攝之義，有如管家之主，而並非真正的主人之主。依朱子的思想，真正的主人主，當在「性」，而不在「心」。⁽²⁵⁾

語類同卷又一條云：

性情心，惟孟子橫渠說得好。仁是性，惻隱是情，須從心上發出來。心，統性情者也。

此處將孟子與張橫渠並提，其實未必相干，朱子只是順自己的想法而如此說而已。而後句謂性與情「須從心上發出來」，這個「發」字實有歧義。就「情」而言，可以說情是從心上發出來。所以情從心發是實說的發。但就「性」而言，則不能說性是從心上發出來，而只能說「性」是因心知之統攝含具而彰顯出來。可見所謂性從心上發出來，只是虛說的發。因此，朱子所說的「心統性情」也應作是觀，「心統性」與「心統情」實有不同，必須分別作解：

- 1.心統「性」，是認知地統攝性而含具之。——所以朱子講涵養，是「涵養於未發」，把心涵養得「鏡明水止」，則可達於「心靜」而「理明」。心靜，則能復其虛靈知覺以明理。而所謂「理明」，即表示性（理）因心知之攝具而彰顯出來。此時，心即統貫於未發之性。
- 2.心統「情」，是行動地統攝情而敷施之、發用之。——情是從心上發動出來，此時，心即統貫於已發之情。情因事而發（如好、惡、喜、怒、哀、樂），所以朱子講「察識於已發」。通過察識而使情之敷施發用各得其正，而中節合理。

三、心性工夫的要點

上文（甲）節之末，已提及朱子的工夫格局是「靜養動察，敬貫動靜，格物窮理」。朱子從三十七歲正式參究中和問題，歷盡曲折、困惑與艱苦。牟宗三先生〔心體與性體〕第三冊第二、三、四章，以及劉述先先生〔朱子哲學思想的發展與完成〕第三章，皆有詳細之討論。現在只就朱子確定的工夫進路，作一綜括之說明。

凡講工夫，都必須落在「心」上說。依朱子，心雖不是理，而屬於氣；但在他系統中的「心」並不因此就不重要。性是理，地位自然尊高。但朱子所講的「偏義的性理」，只是靜態的實有，形式的標準，性理本身並不能有所作為。因為它「只存有而不活動」。

朱子有云：

以意度之，此氣是依傍這理行；及此氣之聚，則理亦在焉。蓋氣則能凝結造作，理卻無情意、無計度、無造作。(20)

理、是靜的，所以朱子說它無有「情意」，無有「計度」，無有「造作」。如此而說的性理，確實是無能、無力的，能與力是在氣處。在這種情形之下，道德實踐的活動中心自然就落在心氣（心與情）一邊，而性理也必須憑藉心氣來顯現。因此，朱子又有「氣強而理弱」之言。(21)但無論如何，工夫總必須做，而且必須落在屬於氣的「心、情」上做。這就是朱子所講的「涵養、察識」的工夫。

「涵養」（存養）是對「心」而言。其實，孟子也講存養工夫，存養本心性體。但朱子所說的涵養，卻不是涵養本心性體，而是以肅整莊敬之心，汰滌私意雜念，以達到如鏡之明，如水之止，然後「心靜」則「理明」。理（性）為心知攝具於心，於是心的活動乃有理則標準而可以順性而如理。這步工夫是在「靜時」做，靜時是指無事時，也即意念未動、思慮未萌時，是即所謂「涵養於未發」。而「察識」（省察）則是對「情」而言。情是心氣之發（或心氣之變），情之發未必中節合理，所以必須加以察識。所謂察識，是以涵養敬心而顯現的「心知之明」，來察識已發的「情變」（好惡喜怒哀樂之情），並導化其偏雜，使之發而中節合理。這步工夫是在「動時」做，動時即有事時，從意念發動，便是有事；是即所謂「察識於已發」。

無論靜時動時，無論未發已發，皆須有敬以貫之，這就是所謂「居敬」工夫。朱子答張欽夫有云：

是以君子之於敬，亦無動靜語默而不用其力焉。未發之前，是敬也固已立於存養之實；已發之際，是敬也又常行乎省察之間。(22)

所謂未發之時，敬立於存養之實；已發之際，敬行於省察之間。這是表示，無論靜時涵養，或動時察識，都必須有敬以貫之。此之謂「靜養動察，敬貫動靜」。

情（心氣）之發，必將涉及對象，所以順「察識於已發」而推進一步，便是「致知格物以窮理」。朱子〔大學章句〕格物補傳有云：

人心之靈莫不有知，而天下之物莫不有理。

朱子依於此一「心知對物理」的格範，將天下事物一切皆平置為「然」與「所以然」。「然」是指實然存在的事物，「所以然」是指遍在於事物的普遍的理。所謂「即物而窮其理」，就是以心知之明去窮究事物之理。通過「心知之明」與「在物之理」的認知攝取的關係，乃形成大學補傳所謂「即凡天下之物，莫不因其已知之理而益窮之」的泛認知主義的格物論。

依於泛認知主義的態度，朱子將仁體、性體、以至道體、太極，也同樣平置為普遍的理。而這普遍的理，也同時是在即物窮理的方式下、為心知之明所認知的對象。於是，那作為「理」的道體性體仁體，遂永遠為客為所，而不能反身為主為能（依朱子此一思理，虛靈知覺的心知，才是主觀面的能）。在這種情形之下，自孟子以來的那個立體直貫、而能起道德創造的實體性的「心體」，也就無從說起了。結果，「心」與「理」也析而為二而非一（所謂心理合一，是通過工夫而合一，而不是本一、真一）。基於這種「主智主義的道德形上學」（以知識的進路講道德），必為他律道德。這就是朱子性理學（心性之學）的性格及其限制之所在。

丙、心與理的關係之再釐定

一、朱子「心具萬理」一語的真實意指

依據上節「心統性情」之說，心之攝具性（理）是認知地具、涵攝地具，也可以說是關聯地具。

朱子除了在〔大學章句〕首章說到「虛靈不昧」之心「具衆理，應萬事」之外，在語類中也說：(29)

一心具萬理。能存心，而後可以窮理。

心包萬理，萬理具於一心。不能存得心，不能窮得理；不能窮得理，不能盡得心。

窮理，以虛心靜慮為本。

第一條「心具萬理」與次條「心包萬理」的「具」或「包」，乃是「心知之明」之認知地具、涵攝地具。所以第一條次句「存心」之後又接「窮理」，可知所謂「存心」實是存養（涵養）心知之明，勿使昏昧，而後乃能發揮「窮理」的作用。這是在心知之明的認知作用中把「理」帶進來。第二條「心包萬理」之後，也接着說到必須存得心，才能窮得理，不能窮理，則不能充盡心知之明。（意即：不能達到大學補傳所謂「衆物之表裡精粗無不到，吾心之全體大用無不明」。）這與第一條意思相同。第三條又說「窮理以虛心靜慮為本」，也仍然表示這個意思；因為心不虛靈、不靜慮，則不能顯發心知之明以窮究事物之理，故虛心靜慮為窮理之本。

朱子又說：

心，則知覺之在人而具此理者也。(30)

心有「知覺」，所以能「具」此理。由這句話，更可確定朱子所謂「心具衆理」、「心具萬理」，乃是認知地具。由心知之明（知覺）認知理、涵攝理，而後理具於心。這樣講的心具理，實只是後天（工夫）的「當具」（因為心不具理，則無由成善、成德，故心應當具理），而不是先天的「本具」。在朱子，心與性異質異層（性是形上之理，心屬形下之氣；心有善惡，性無不善）

，所以「心具」與「性具」不同：

- 1.性卽理也，性之具理自是先天的「本具」。（故朱子云：「性是實理，仁義禮智皆具。」已引見上文（甲）節之一。）
- 2.心之具理，則有待於涵養心知之明，乃能認知地具、涵攝地具，所以是後天的「當具」。（若承認「心卽理」，則心之具理便是先天的本具，如孟子陸王。）

二、心知如何統攝性理而顯現之？

如果我們再問：依朱子的系統，心知之明如何能認知地統攝着性（理）而使它顯現？關於這個問題，我認爲牟先生〔心體與性體〕書中有一段話說得最明徹：(B)

心知之明本有認知（知覺）事物之理之作用，認知之而依理發爲存在之然，此卽是性理之顯現。

認知，必須是認知存在之所以存在之理。若只就存在之然本身之曲折而認知之，此只是認知了曲折之相，並未認知存在之然之所以然。故此種認知尙不能令性理顯現。

心知之明既可以認知存在之然自身之曲折之相，亦可以認知存在之然之所以然之理，而且還能辨別存在之然自身曲折中之是非善惡；此皆爲心知之明之所及。

光是認知存在之然自身之曲折之相及辨別此中之是非善惡，尙不能令性理顯現。必須就存在之然自身曲折之相以辨別出那「是的、善的」，就「是的善的之然」而窮知（推證）其所以然，方能令性理顯現。此卽函說，「是的、善的之然」方有性理之根，而「非的、惡的之然」實無性理爲根，卽並無正面積極的根據，而只是私欲纏夾在內把那本應依理而發的存在之然弄歪曲了，遂成爲歪曲的然。故「非的、惡的之然」只是一時之假象，其自身無有積極的存在，故必須揀別出也。

依此，心知之明之認知活動是須要層層推進、層層規定的；規定到就「是的、善的之然」而窮知其所以然，方能說到令性理顯現。

牟先生這一大段話，對朱子系統中「心」與「理」的關係，說得肯切而明透。茲爲助理解，再約爲四點作一說明：

(1)心能認知事物之理，認知之後依理而發爲實事實行（存在之然）以成善成德，此便是性理之顯現。

(2)心之認知，可以——

- (a)認知事物的曲折之之相；
- (b)認知事物的所以然之理；
- (c)認知事物曲折之相中的是非善惡。

依(a)，可以認知事物的「質、量、關係」，此中也有所以然，是就事物本身之形成、結構而說的所以然。這一層的所以然之理，可名形構之理或形成之理、構造之理，實卽科學之理也。依(b)，可以認知事物之所以如此存在的超越根據，這一層的所以然，是爲存在之理。依(c)，認知心也可有價值性的認知，能認知事物曲折之相中的是非善惡。

(3)事物之「是的、善的」有性理爲根，在此可以說性理顯現。而事物之「非的、惡的」則只是一時之假象，實無理性爲根，在此不能說性理顯現。這一步「揀別」，決不可少。

(4)心知之明的認知活動，必須層層推進、層層規定；一直規定到就事物之「是的、善的」而

窮知（推證）其所以然，即可使性理顯現。再依性理而發為行為，便是道德的實踐活動。

三、大學格物補傳的思想格範

朱子重編禮記大學章句，並為「格物致知」作補傳，其文曰：

所謂致知在格物者，言欲致吾之知，在即物而窮其理也。蓋人心之靈莫不有知，而天下之物莫不有理。惟於理有未窮，故其知有不盡也。是以大學始教，必使學者即凡天下之物，莫不因其已知之理而益窮之，以求至乎其極。至於用力之久，而一旦豁然貫通焉，則衆物之表裡精粗無不到，而吾心之全體大用無不明矣。此謂物格，此謂知之至也。

朱子一生心力，幾乎盡萃於〔大學〕一書，故臨終前夕猶為誠意章作最後之改定。可謂念茲在茲，生死以之矣。而此格物補傳，乃代聖賢立言，下筆尤為鄭重。雖寥寥一百三十餘言，卻可以視為朱子基本思想的綜結。

所謂「人心之靈莫不有知，而天下之物莫不有理。惟於理有未窮，故其知有不盡也。」這明顯地是「以心知理」。朱子講大學，是落實於「即物窮理」上，依「以心知理」而建立其思想格範。這個格範即是：

以「心知之明」窮究「事物之理」。

接着，朱子繼續申述「理窮」而後「知盡」之意——「故大學始教，必使學者即凡天下之物，莫不因其已知之理而益窮之，以求至乎其極」。這個「極」字，是指事物之所以存在的超越根據。此一超越根據，可曰「存在之理」，也即「所以然之理」（性理）。而所謂「因其已知之理而益窮之」，意即在步步即物窮理的過程中、層層推進而層層規定之，一直規定到：就事物之「是的、善的」而窮知（推證）其所以然，即可以使性理顯現出來。這就是「心知之明」因其「已知之理」而「益窮之」，而步步推進、層層規定所達成的功效。所以接下來又說「至於用力之久而一旦豁然貫通焉，則衆物之表裡精粗無不到，而吾心之全體大用無不明矣。」

在這「窮理」的過程中，不但是「用力之久」，以使事事物物的「表裡精粗無不到」，而且還要有一步分判（判分事物的曲折之相與事物的所以然之理），再加一步揀別（揀別出「非的、惡的之然」，而就「是的、善的之然」而窮知之）。如此，才真能「衆物之表裡精粗無不到」，而「吾心之全體大用無不明」，而性理也因而才能具體而真實地顯現。（同時，依朱子而講大學「明明德」，也必須在「益窮」的過程中，層層推進而規定之，吾之明德乃可彰顯而明。）

四、結語：心與理為二

以上是就朱子的思理，以說明「心」與「理」的關係。在朱子文獻中，還有不少「理在人心」、「萬理皆具吾心」一類的話，很容易使人望文生義，以為朱子並不是「心與理為二」。其實，朱子有很多話都是在講說先秦儒家經典（尤其論語、孟子）或北宋諸儒（周、張、大程）文獻之時，順着經典文字而說的。即使不是順前人文獻而說，他也是就「心」的虛靈知覺、心氣的周流貫徹，而說出「心包萬理、心妙萬理、心具萬理」這類的話。譬如，朱子說：

性只是此理。情是流出運用處。心之知覺，即所以具此理而行此情者也；³²

後一句所謂「心之知覺」即是「所以具此理」者，正已確切地指出，心之具理，是由於「知覺」，此即上文所謂認知地具、涵攝地具。

錢穆先生為朱子作新學案，最尊崇朱子。但錢先生也同樣指出，心之知覺、虛靈、神明，「

皆屬氣一邊事，非即理一邊事。」⁽⁸⁹⁾依朱子，理氣「不離不雜」，實則，心與性也「不離不雜」。不離，是說二者關係之密切；不雜，是指二者畢竟分屬形上形下之異層。然則，朱子「析心與理爲二」（王陽明語），尚有何可疑乎！〔至於「心理爲二」與「心理爲一」在儒家內聖成德之學上的意義與得失，以及朱子的「心論」（亦含荀子）與「格物窮理」之說所含具的時代意義與文化意義，則須當別論，本文不及詳。〕

附 註

- (1)劉述先〔朱子哲學思想的發展與完成〕（台北、學生書局）、頁一九七。
- (2)關於朱子心性思想的發展，可參閱牟宗三〔心體與性體〕（台北、正中書局）、第三冊前五章。
- (3)〔朱子語類〕（台北、正中書局修補本）、卷九十三。
- (4)同上、卷五、性理二、性情心等名義。本節所引各條，皆見於該卷所載，不另分別作註。
- (5)〔朱子大全〕（台北、中華書局）文集卷四十六、答黃商伯第四書。
- (6)同上、文集卷五十九、答余方叔書。
- (7)張橫渠〔正蒙〕誠明篇云：「形而後有氣質之性。善反之，則天地之性存焉。故氣質之性，君子有弗性焉。」
- (8)關於北宋諸儒講說氣質之性，蔡仁厚〔宋明理學北宋篇〕（台北、學生書局）第六章第三節、第十五章第四節有說明，可參閱。
- (9)〔朱子大全〕文集卷五十八、答徐子融第三書。
- (10)〔孟子〕盡心下、第二十四章。
- (11)見註七所引。
- (12)按、「只存有而不活動」，乃牟宗三先生用以分判伊川朱子系講性理（道體性體）之用語。性、理、道，是形上的實體，是「存有」。但伊川朱子所講的「性、理、道」，卻是與「心、神、寂感」相隔離的「只是理」；由於脫落了心義、神義、寂感義，則道體性體的「活動義」乃隨之而泯失，故據此而判伊川朱子的性理爲「只存有而不活動」。而儒家正宗大流（論、孟、庸、易與周、張、大程、陸、王等）所講的性、理、道，則「不只是」理，同時亦是心、亦是神、亦是寂感真幾，所以是「即存有即活動」的。參閱〔心體與性體〕第一冊、綜論部之分判。
- (13)參閱蔡仁厚〔新儒家的精神方向〕（台北、學生書局）、頁二二一至二二六「關於宋明儒家之分系問題」一文。
- (14)牟宗三〔心體與性體〕第一冊、頁五六三、五六四。
- (15)〔二程遺書〕第十八、伊川先生語四，問仁條有云：「惻隱，固是愛也。愛自是情，仁自是性，豈可以愛爲仁乎？」此即伊川有名之「仁性愛情」之說，而朱子嚴格遵守之。
- (16)「本體宇宙論」，是牟宗三先生依儒家心性之學的性格而提出的綜括之詞。在儒家，並未分別而獨立地講一套本體論，又講一套宇宙論，而是二者通貫而爲一，以講明天道生化與道德創造；所以儒家的形上學不同西方之觀解的形上學，而恰是康德所嚮往而未能完成的「道德的形上學」。牟先生在〔心體與性體〕、〔智的直覺與中國哲學〕、〔現象與物自身〕等書，皆隨時陳述此意。

(17)按、縱貫系統、橫攝系統，是牟先生〔心體與性體〕書中之用語。依牟先生，伊川朱子同屬橫攝系統，其格物窮理，是以心知之明去認知（攝取）事物之理，因而形成主客相對，此乃平面的（橫的），故謂之「橫攝」。既然心知之明是順着格物的方式而認知理、攝取理、遂亦稱其工夫為「順取的路」。而在縱貫系統中，則客觀地說的宇宙生化、主觀地說的道德創造，皆是這「即存有即活動」的形上實體（道體性體通而為一的天理本體）之立體地直貫。換言之，皆是天理本體這個創造的動源，本末通貫地妙運之、創造之、成就之。在此，沒有平面的主客相對，而是立體地直貫創生（凡創生、創造，必是直貫的、縱貫的），故謂之「縱貫」。凡縱貫系統，其工夫必非「順取的路」，而是「逆覺的路」。逆者，反也，反求諸己而覺識之、體證之，是為逆覺體證。凡逆覺體證，必從先天心體（與性為一的道德心）開工夫。道德心性「自主自律、自發命令、自定方向」，故為自律道德。而心理為二的格物順取之路，則為他律道德；以其心不即是理，而理又「只存有」而「不活動」故也。

(18)參閱蔡仁厚〔宋明理學〕北宋篇、頁四六四；南宋篇、頁五九、六〇、六七。

(19)參見錢穆〔朱子新學案〕（台北、三民書局）第二冊，十六、十八、二一、二四、二五、三四、三五等目。

(20)同上，第二冊、頁一。

(21)下引各條，皆見〔朱子語類〕卷五。

(22)同上。

(23)參閱蔡仁厚「心的性質及其實現」（鵝湖月刊九十四期）、與「三心與三性」（中國文化月刊六十九期）。

(24)參閱蔡仁厚〔宋明理學南宋篇〕第二章、頁四二至五六。

(25)參閱牟宗三〔心體與性體〕第三冊、頁四七二、四七五。

(26)見〔朱子語類〕卷一。

(27)按、「氣強而理弱」之言，見「朱子語類」卷四。

(28)〔朱子大全〕文集卷三十二之末、答張欽夫書（按、此書即中和新說書）。

(29)下引三條，皆見〔朱子語類〕卷九。

(30)〔朱子大全〕文集卷五十八、答徐子融第三書。

(31)牟宗三〔心體與性體〕第三冊、頁三七二、三七三。書中之文本未分段，茲為醒目，特分為五小段錄列於後。（其中「是的、善的」，「非的、惡的」，「是的、善的之然」，「非的、惡的之然」各句之引號，乃筆者所加，以便讀解。）

(32)見〔朱子大全〕文集卷五十五、答潘謙之第一書。

(33)錢穆〔朱子新學案〕第二冊、頁四。

國父 孫中山先生對馬克思主義的批評

馮滄祥

摘要

國父早在六十年前，便已明白批評馬克思主義，他批評馬克思只是「社會病理家」，不是「社會生理家」，並且強調「師馬克思之意則可，用馬克思之法則不可」。另外他曾進一步指出，共產制度與方法「不適用於中國」，因為中國無此情況。

因此，國父以「民族主義」超越「世界主義」，以「民權主義」超越「極權專政」，並以「民生主義」超越「社會主義」，這亦乃今後發揚三民主義的重大方向。同時，國父融貫中國傳統哲學的特色，以「社會互助論」超越「社會鬥爭論」，以「民主史觀」超越「唯物史觀」，以「和諧辯證法」超越「唯物辯證法」，以「知難行易論」超越「社會實踐論」，並以「世界大同說」超越「世界革命說」，更是一一針對馬克思理論的缺失加以對治。

本文之作，即在一一分析並闡述國父對馬克思的批評，一方面駁斥中共對國父思想的扭曲，二方面強調值此大陸思想界進退失據之際，特別值得多多闡釋國父對馬克思主義的批評，進而由「破」再「立」，進一步弘揚國父本身思想的優越。

前言

美國哥倫比亞大學教授韋慕庭 (Martin Wilbur) 以研究國父孫中山先生的生平著稱，他曾經稱呼孫逸仙博士為「一位受挫的愛國者」(a frustrated patriot)——所謂「受挫」，是指當時內有軍閥，外有列強，以致無法看到其「救國主義」的全面推行^①。然而，最重要的，乃是當時已有來自第三國際的共黨滲透，後來更導致整個中國大陸的赤化，以及億萬同胞的苦難。要說國父的愛國心志「受挫」，實在莫此為甚。只是一般西方學者對於這一關鍵問題，很少深入的瞭解與研究，不但非常可惜，而且相當危險，值得自由世界的中外學者再繼續加以補充。

事實上國父早在當時便對馬克思主義有過很多精闢的批評，他並且曾經在第三國際代表越飛的共同宣言中明白強調：「共產組織甚至蘇維埃制度，事實上均不能適用於中國」。我們如果能夠瞭解國父當年在艱苦環境的奮鬥中，仍然不忘常常批評馬克思主義，便知道他並不是一位消極的「受挫的愛國者」，而是一位積極的「愈挫愈勇的愛國者」。尤其國父當年所批評馬克思的遠見，現在一一均證明其正確，深深值得自由世界再進一步研究與闡揚。

尤其中共近年來一再扭曲中山先生的思想，企圖將國父曲解成爲親共的思想家，甚至還一再捏造所謂「新三民主義」以及「舊三民主義」^②，然後企圖以此分化混淆視聽，誤導大陸民心，更值得我們透過客觀的學術研究加以澄清與匡正。

本文之作，就在於以客觀的學術研究，歸納國父孫中山先生對馬克思的有關批評，並且一一加以分析與申述。試看中共卅多年來在大陸上推行共產制度的失敗，可說在在都是以血淚的事實證明了國父當年的遠見。我們今後若能多多瞭解國父當年批評馬克思的苦心與慧心，並且

進一步的發揚光大，相信不但最能匡正中共對 國父思想的曲解，而且更能幫助大陸人心與自由世界，進一步明瞭中國現代化的真正出路所在。

尤其馬克思主義基本上可說是一種「反西方的西方主義」，或可稱「西方的反西方主義」，因此，如果只從西方哲學的傳統裡面尋求對治之道，並不容易找到有力的答案；然而三民主義基本上源自東方中國儒家哲學的特性，然後再結合西方思想的精華，因而在此便深具足以超越的本性。有關這一個關鍵重點，也深值或們自由中國的學者進一步闡揚，以幫助西方學術界做為重要參考。

爲了行文的方便，本文謹將 國父對馬克思的批評與超越，扼要歸納爲以下十二個重點，並且一一分析與申論，尙請各界先進與高明指教。

一、馬克思是「社會病理家」，不是「社會生理家」

國父對馬克思最著名的批評，就是指出馬克思是「社會病理家」，而不是「社會生理家」③。這句話代表的意義有二，一是批評馬克思以偏概全，誤以社會進化的病態爲常態。二是批評馬克思「倒果爲因」，誤將階級戰爭視爲社會進化的動因。

就第一點而言， 國父固然一方面也承認馬克思很有學問，所以也稱之爲「家」，但頂多也只是其「一家」之言，並不具備普遍性。主要是因爲馬克思只集中研究社會的病態現象，而將階級鬥爭的病態現象視爲常態，也就是把一時一地的鬥爭現象任意普遍化，以致在「共產黨宣言」中，第一句便視所有「人類社會史」都是「階級鬥爭史」④。事實上，馬克思既不懂東方史，更未研究過中國史，如此強不知以爲知，就成了以偏概全，所以不能說是對社會正常結構研究的「社會生理家」。

以第二點來說，因爲馬克思認定階級鬥爭才是社會進化的原因，強調要有階級鬥爭才有社會進化，這就成了「以階級鬥爭爲因，社會進化爲果」，所以 國父曾批評他「倒果爲因」⑤。國父在此並曾明確強調：「社會中的各種變態都是果，民生問題才是因」，「民生就是社會一切活動的原動力。」⑥。換句話說，民生如果順暢，便不會有鬥爭，如果不順暢，才會有病態。國父這種見解才算是把握了重點，把馬克思倒果爲因的錯誤糾正過來，並且從根本上彌補了馬克思的理論中，無法解釋何以很多社會並未產生鬥爭的缺點。

所以 國父曾明白的指出：

「社會所以有進化，是由於社會上大多數的經濟利益相調和，不是由於社會上大多數的經濟利益有衝突」⑦。

「社會進化的定律，是人類求生存，才是社會進化的原因」⑧。也就是說，人類求生存的民生問題，才是社會進化的動因所在。所以 國父曾經進一步批評馬克思：「階級戰爭不是社會進化的原因，階級戰爭是社會在進化的時候，所發生的一種病症。這種病症的原因是人類的不能生存，因爲人類不能生存，所以有這種病症的結果，便起戰爭」⑨。

因此 國父才批評馬克思研究社會問題的結果，只見到社會進化的毛病，沒有見到社會進化的原理，所以馬克思只可說是一個「社會病理家」，不能說是一個「社會生理家」，這一點很值得我們深入瞭解與重視。

二、「師馬克思之意則可，用馬克思之法則不可」

國父一方面對於馬克思關懷工人的心意相當推崇，所以曾經讚揚「社會主義爲人道主義」，但在另一方面，國父却在很多地方明白的反對用馬克思的方法。這就是國父所明白指出的：「師馬克思之意則可，用馬克思之法則不可」^⑩。如果說國父未曾瞭解馬克思的心意，那是不公平的說法，但如果說國父同意馬克思的方法，那更是不符事實的混淆。

所以，國父一方面固然曾經說「民生主義就是共產主義就是社會主義」^⑪，但是另一方面却明確的指出「兩種主義沒有什麼分別，要分別的還是在方法」^⑫。後面這一句話很重要，不能任由中共斷章取義，只講前面一句，漏掉後一句。事實證明，正是因爲方法不同，所以後來的效果也大不相同。所以單以「方法不同」一項，就包含了極爲重大的區別，不能不加重視。

準此立論，我們特別值得申論兩點：

一、不能斷章取義，只說上半句「民生主義就是共產主義」。尤其國父的三民主義另外還有民族主義與民權主義，更不能以偏概全，曲解成「三民主義就是共產主義」。

二、不能忽略方法，因爲任何人道主義除了動機與理想應該符合人道外，其方法更應該符合人道精神。民生主義除了深具人道的動機與理想外，更明確主張和平的人道方法，所以這才能算真正「整全的人道主義」。像馬克思的社會主義基本上主張採取暴力與專政的方法，便頂多只能說是「半邊的人道主義」。要由此來看，便知國父雖然當時未及看到青年馬克思的「巴黎手稿」，但以國父如此注重方法的不同來看，如果他能再世看到，相信他仍然會再次強調，只看馬克思青年手稿中的人道心意並不夠，重要的是如何用人道的和平方法來解決問題。

此所以國父很早就指出：「我們國民黨的民生主義，目的就是要把社會的財源弄得平均，所以民生主義就是社會主義，也就是共產主義，不過辦法各有不同」^⑬。什麼辦法各有不同呢？「我們頭一個辦法，是解決土地問題」^⑭，也就是平均地權。

所以，我們如果以土地改革爲例，同樣講土地改革，在中華民國便是用和平的方法進行而成功，並且以土地債券與公營事業股票的方式補償地主，間接也帶動了工業發展，成爲舉世矚目的成就。然而在中共，却因爲用暴力的方法鬥爭地主，結果不但造成普遍的血腥鎮壓，而且對工業也毫無幫助，反而中共本身成了唯一的大地主，兩者在實踐上的優劣，一比即知。

所以國父很早就曾強調：「三民主義之中的民生主義，其目的就是要衆人能夠共產。不過我們所主張的共產，是共將來不是共現在」^⑮。

「這種將來的共產，是很公道的解決辦法，以前有產業的人，決不至於吃虧，和歐美所謂的國有，把人民已經有了的產業都搶去政府裡頭，是大不相同。地主真是明白了我們平均地權解決辦法的道理，便不至害怕」^⑯。國父這種所謂「共將來」而非「共現在」，關鍵重大，意義極爲深遠。像中華民國和平進行的土地改革，地主不但不用害怕，而且能夠得到工業券的補償，等工業繁榮後地主與農民便能夠一起均富，這叫做「共將來」，事實證明是完全正確的做法。而中共是以激烈手段沒收土地，正是「共現在」，其結果便是地主與農民都成了「均貧」。只此一例，便可看出民生主義的不同處與優越性，絕不能與共產主義籠統的混爲一談。

三、「馬克思對於後來的事實，一點都沒有料到」

國父對於社會主義的派別研究很多，因而也相當瞭解馬克思所謂「科學的社會主義」的特性所在。他一方面認爲這的確有別於其他空具人道熱誠的「烏托邦社會主義」，所以相當推崇馬克思以科學方法分析當時的事實，並且稱之爲社會主義的「集大成」^⑰。

然而，在另一方面，國父却也以各種後來的事實做爲例證，明白指出馬克思很多的預言並沒有兌現，對於後來的很多事實更是「所料不中」。他曾經強調：「馬克思研究社會問題，用功幾十年，所知道的都是以往的事實，至於後來的事實，他一點都沒有料到。」^⑱。所以我們可以說，國父乃是在中國最早指出「馬克思主義過時論」的思想家。

例如國父批判馬克思的「盈餘價值論」^⑲，便是明顯的證明。國父明白指出，根據馬克思的看法，資本家若要盈餘，必然一要減少工人的工錢，二是延長工人工作時間，三要提高產品的價格。但後來事實證明每一項均剛好相反。歸根結底，這是因爲馬克思忽略了「生產意願」此一靈活的重要因素。所以國父指出，「這些相反的道理，以前馬克思都不明白，所以他以前的主張便大錯」^⑳。

另外，國父也曾明白指出：

「只就資本一項來講，在馬克思的眼光，以爲資本家發達了以後，便要互相吞併，自行消滅。但是到今日，各國的資本家，不但不消滅，而且更加發達」^㉑，這就從根本上將馬克思「資本論」中繁瑣的理論，以事實加以有力的批判與推翻。另外國父也曾同時以合作社爲例，明白強調：「馬克思當時的判斷，以爲要資本家先消滅，商人才可以消滅，現在合作社發生，商人便先消滅。馬克思的判斷和這種事實又是不相符合。」^㉒，這些也都是深值我們注意的關鍵所在。

實際上，國父在演講中曾以各種豐富的事例，指出馬克思「所料不中」的錯誤，深值我們重視。這不但顯示出國父對此用功之深刻，以及用心之良苦，而且他列舉各種事實，一一反駁馬克思的理論錯誤，可說是最有力的論證。因爲「事實勝於雄辯」，永遠是千古名言，西方有些學者往往只從馬克思的內在理論鑽研，而忽略其與外在事實不符之處，以致只能進去而出不來，便深值世人警惕。

所以我們可以說，如果馬克思要符合其自稱的「科學的社會主義」，便不能將當時的理論一成不變的用於今日，也不能將對歐洲社會的研究成果，強加於中國社會。事實證明，連今天的歐洲社會都與馬克思所料不符，更何況馬克思從未研究過的中國社會？所以研究馬克思的著名學者胡克博士（Sidney Hook）便曾強調，如果馬克思再生，還要自稱其爲「科學的」話，一定會大幅度的自己修正其學說^㉓。像國父本身在講三民主義與實業計劃時，便會一再主動強調，絕不能視之爲一成不變，這才是一種科學的態度，也才是一種開放的心胸，深值我們重視。

四、馬克思主義「不適用於中國」，因爲中國無此情況

如上所述，國父因爲很早就看出馬克思學說的各種錯誤，所以很早就指出其根本不適用於中國。

國父在民國十二、三年，爲了因應外交與國內的情勢需要，並謀取中國之統一，才曾經有過所謂「聯俄」、「容共」（中共僞稱爲「聯共」）的階段性策略。然而早在當時，國父即有警惕，爲了避免被共黨趁機曲解，他曾經明白的採取三大措施，深值重視。那三項呢？一是在民國十二年一月廿六日與蘇俄代表越飛發表「孫越宣言」，明白強調共產制度不適用於中國。二是在民國十二年八月十五日至十二月十五日，特派先總統蔣公親自赴俄考察。三是在蔣公返國報告之後，國父從民國十三年一月廿七日起，在廣東正式宣講三民主義。其中第一講開宗明義便講民族主義，很清楚的就是反對以外來的馬列主義入主中國。後來在民生主義第一講中，國父整篇講演更以批評馬克思爲重點。這些都是深具苦心的做法，深值我們重視。

所以在「孫越宣言」中，第一條便會明白指出：

「孫逸仙博士以爲共產組織甚至蘇維埃制度，事實均不能適用於中國，因中國無此項共產制度與蘇維埃制度可以成功之情況，此項見解越飛君完全同意。」

如今經過卅多年的教訓，更加證明了 國父當年遠見之正確——馬克思主義確實是根本不適用於中國！因而絕不能再「削」中國之「足」，以「適」馬列之「履」，否則只有更加血肉模糊，繼續造成民族生命的悲劇！

另外， 國父在宣講民生主義時，更會明白以「翻北風」的例子，說明馬克思主義不適用於中國。他指出，廣州的天氣本來很熱，根本不須穿大毛皮衣，但因北方有些富家子弟爲了炫耀財富，所以硬穿大毛皮衣，等到天氣一暖和，他們不但不脫皮衣，反而指責爲什麼不翻北風，「如果不翻北風，便會壞人民了」。

從這個「翻北風」的例證中， 國父深刻的指出，在中國的情況，「人民是患貧，不是患不均」，尤其中國本無資產階級與無產階級之分，而只是「大貧與小貧」之分，因此根本不需要馬克思主義。 國父在此的遠見極值重視：

「我們主張解決民生問題的方法，不是先提出一種毫不合時宜的劇烈辦法，再等到實業發達以求實用，而是用一種思患預防的辦法，來防止私人的大資本，防備將來社會貧富不均的大毛病。這種辦法才是正當解決今日中國社會問題的方法，不是先穿起大毛皮衣來希望翻北風的方法。」²⁴

一代大儒梁漱溟先生在晚年曾經有篇文章，批評毛澤東以蠻力推動鬥爭哲學，實在是「無風強起浪」²⁵，也是同樣的這個意思。只不過他是親身經歷過浩劫後才提出的，不像 國父很早就有此遠見。我們從後來大陸上種種的血淚教訓，都可以看出 國父當年遠見之正確，深值自由世界警惕，今後不能再加輕忽了。

總之， 國父雖然很推崇馬克思的學問，但是早就明白強調，「不能用馬克思的辦法到中國來實行」²⁶。並且早就明白說過「所以照馬克思的黨徒，用馬克思的辦法來解決中國的社會問題，是不可能的。」²⁷，如果硬要蠻橫推行，自然就會產生無窮的問題與浩劫。此一重大關鍵，實在深值中共與大陸人心瞭解與重視。

五、以民族主義超越世界主義

國父在民國十三年講演三民主義時，首先便是講民族主義，並且明白強調：要用「民族精神來救國」。事實上，那時已經推翻清廷達十三年之久了，爲什麼首先還要講民族主義呢？很清楚的， 國父的苦心與用意，就是要提醒國人警惕，不要被外來的馬克思主義所迷惑。

所以 國父在「民族主義」中首先曾經批評：「現在的英國和以前的俄國、德國，以及中國現在提倡新文化的新青年（按亦即陳獨秀等馬克思早期信徒），都贊成一種『世界主義』，而反對『民族主義』。」事實上很清楚，這種思想——所謂「世界主義」正是帝國主義的一種型態，所以才推稱「民族主義」是「狹隘」的，「不是寬大」的，然後再藉此來抹煞他國的民族主義。其中，英國可說是白色的帝國主義，而俄國則可說是赤色的帝國主義。所以國父均會指名加以批評，正是以堅定的民族主義立場，堅決反對任何形式的帝國主義來壓迫中國。

國父在同一篇演講中，曾經緊接著問道，什麼叫做「世界主義」？然後他簡要的指出，「不分夷狄華夏，就是世界主義」²⁸。在當時，是要反對外來的列強勢力壓迫中國，在今天，則是要

反對外來的馬列主義壓迫中國。所以我們也可以說，「不分中共中國」也是一種世界主義。因為中共一直是靠外來的馬列主義入侵中國，其藉口就是說馬列是「世界性」的人物，它不但不能代表文化悠久的中國，而且以馬列主義來壓迫中國，其本質更是反中國、害中國的。所以我們絕對不能將「中共」與「中國」混為一談。而真正的民族主義，必然反對馬列，必然反對中共。今後我們若要結合所有中國人，共同驅除馬列，恢復中華，也非要發揚民族主義不可！

所以 國父很早就指出，「民族主義這個東西，是國家圖發達，種族圖生存的寶貝」²⁹，並且強調「中國到今日已經失去了這個寶貝」，所以 國父在當時就大聲疾呼，要「恢復固有道德」、「恢復固有智能」、「恢復民族自信」，一直到今天，都可看出 國父的遠見與苦心。

尤其，馬克思主義基本上企圖以階級意識取代民族意識，以無產者觀念取代國家觀念，這些顯然都只是偏頗之見。尤其共產黨宣言中所謂「工人無祖國」的看法，於今更加證明其錯誤。試觀兩次大戰期間，仍然均為國與國之間的戰爭，而根本不是各國「無產階級」與各國「資產階級」之間的戰爭，便是明顯事實。甚至連蘇俄史達林在二次大戰危急時，仍然只能以民族主義號召抗德，而絕口不再宣傳馬列主義，更可說是一大諷刺。

凡此種種，都明白以事實證明馬克思主義的重大錯誤。所以 國父早在當時便已用「竹槓與彩票」的例子，駁斥馬克思式的世界主義³⁰。換句話說，對一位苦力而言，竹槓乃是維持生活的基本工具，絕不能因為有了彩票，便拋棄竹槓，否則二者都會落空，便是這道理。更何況馬克思所謂「沒有階級、沒有國家」的共產社會，從來沒有在人類史實現過，這頂多還是「幻想中的彩票」，如果為了幻想中的共產社會而殘害眼前的民族主義，那就只有更加形成民族的悲劇。

由此可見，中共近來一方面講堅持馬列主義，但另一方面却又高喊「愛國主義」，實際上完全是自相矛盾。其所謂「社會主義的祖國」正如同「方的圓」一樣，完全是不可能存在的東西。因為，如果認同馬克思的「社會主義」，便不可能認同「祖國」，如果要認同「祖國」，便只有拋棄馬克思的「社會主義」。要由此來看，才知中共所謂「愛國主義」，其實根本只是為了一時騙取人心，以維繫政權的障眼法而已，試看其內容，仍是以愛馬列、愛中共，愛社會主義為「三熱愛」³¹，根本應稱為「害國主義」才真正符合事實。

國父當年曾經強調：「我們要提倡民族主義來挽救中國危亡，便要先知道，我們民族的危險在什麼地方」³²？這在今日更具有極大的啓發性。試問，今天我們民族的危險在什麼地方？最重要的，便在馬列主義的入侵，以致整個中國大陸都淪為馬列主義的「次殖民地」。中共在香港問題上常常奢談所謂「主權問題」，但只要一深思其在大陸上，整個大陸都已淪為馬列的「次殖民地」，便知其如何竟敢自稱「主權問題」？事實上，香港在英國政府下，固然是殖民地，但還是「自由的殖民地」，一旦淪為中共統治，則將成為「不自由的次殖民地」，這不是「收回」，而是「淪陷」，是可忍，孰不可忍？！

因此，如果我們說 國父當年的民族主義，其使命在「驅除韃虜，恢復中華」，則今天的使命更應為「驅除馬列，恢復中華」。相信，這是任何一位有良知、有血性的人都不能否認的救國方向。唯有如此，驅除了馬列，才能真正復興中華，也唯有如此，驅除了馬列，才算真正收回了香港主權問題。 國父從事革命凡四十年，其目的「在求中國之自由平等」，試觀今日中國大陸在馬列束縛下，既不自由，也不平等，更深值我們自由世界與大陸同胞共同努力，以民族主義與春秋大義的精神，共同為早日完成「驅除馬列，恢復中華」而奮鬥到底！

六、以民權主義超越極權主義

根據馬克思的觀念，因為「無產階級」為多數，所以所謂「無產階級專政」，便代表另一種型態的「民主」。問題是，在俄國與中國，都並沒有馬克思所謂的「無產階級」存在，結果，所謂「無產階級專政」此一錯誤理論，不但沒有在歐美工業先進國家發生，反而在俄共與中共便成為極權專政的藉口。此所以列寧在「國家與革命」中一再強調，不能依賴無產階級的「自發性」革命意識³³，而一定另外要有先鋒隊，這個先鋒隊就是共產黨。這就充份說明了列寧以此為藉口的專政本質。

因此，馬克思的「無產階級專政」，到了列寧乃成了「共產專政」，而到了史達林及毛澤東，更成了「一人專政」。

國父孫中山先生很早就看出了此中流弊，所以很早就強調，反對一切形式的「專政」——不論是什麼「無產階級專政」，或者是「人民民主專政」。既為「專政」，便當然與民主相砥觸，所以國父明白的加以反對，更可看出其從未同意共黨的方法。

此所以國父自稱的「革命學」，一再所強調的是「國民革命」，他一再指出，這是全民革命，不但超越了古代湯武革命的「貴族革命」，也同時以「全民意識」超越了馬列的「階級意識」，更以國民革命超越了階級革命。

像辛亥革命中，揭竿而起者決非資本家或什麼「資產階級」，而是包括士農工商各種職業，這正是典型的全民革命。而黃花崗犧牲的七十二烈士中，更全部都是青年學生，尤其不是什麼「資產階級」。由此也可看出，中共硬要誣指國父只是創建一個「資產階級民主共和國」³⁴，完全與歷史事實不符。

事實上，國父曾明白強調，所謂民國，「一切由民決定」，也就是最高權力來自人民。而國父在權能區分中，更曾明白指出「人民有權」便是這個道理，這可說是最徹底的民主精神，遠勝過假借階級意識下的無產階級專政。實際上，固然列寧係利用了馬克思的「無產階級專政」，但馬克思本身也有其可利用之處，這些都是深值重視的弊病所在。

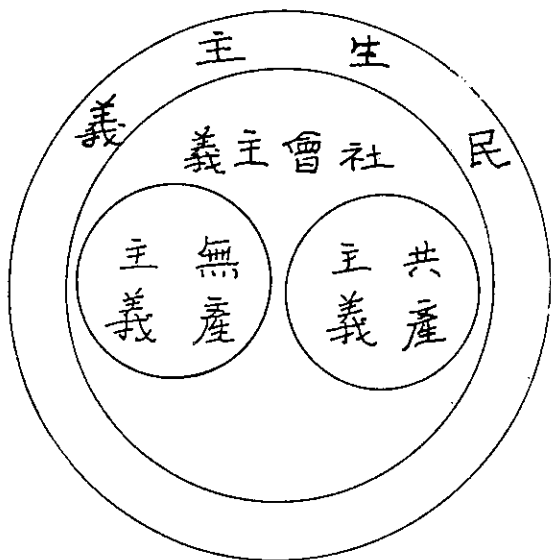
所以國父在談到政治哲學時，特別強調「中國有一套最有系統的政治哲學，在外國的大政治家還沒有見到，還沒有說到那樣清楚」³⁵，這就是大學中所謂的「格物、致知、誠意、正心、修身、齊家、治國、平天下」那一段話。國父強調，「像這種精微開展的理論，無論外國什麼政治哲學家都沒有見到。」事實上，這種政治哲學，以個人修身為基礎，肯定先要有健全的國民，然後才有健全的國家，就是強調以全民意識超越階級意識，以文化意識超越仇恨意識，並以建設國家與世界和平為志向，最能超越馬克思的取消國家與世界革命，深值自由世界重視。

七、以民生主義超越社會主義

國父在民生主義中，對馬克思的批評最明顯，也最直接。他首先指出，他不用社會主義，不用共產主義，而用民生主義這名詞，是有充分道理的。歸納起來簡單的說，一是因為「社會主義」的名稱紛紜，沒有一個明確的內容。二是因為外國發明「社會主義」十年來還不能解決社會問題，所以必須另外有一個足以超越的主義。三是因為社會主義的心意與理想雖有人道精神，但更應強調人道的和平方法，所以要另外用一個名稱加以區分。

所以，國父曾用大圈包小圈的方式如下，表示「本黨既服從民生主義，則所謂『社會主義

』，『共產主義』與『無產主義』，均包括其中。」³⁶



換句話說，民生主義包含的內容最廣，既涵蓋了社會主義的人道精神，也涵蓋了共產主義的理想，但又增補了兩者所缺乏的部份。這缺乏的部份歸納起來說就是經濟「自由化」、社會「均富化」，以及方法「人道化」。簡單的說，就是不只以物質為歷史的中心，而以全民的生活為社會歷史的中心，然後以和平人道的方式追求均富。

所以，國父在此曾經指出：「從前的社會主義，錯認物質是歷史的中心，所以有了種種紛亂，這就好像從前的天文學，錯認地球是宇宙的中心。」³⁷

另外，國父也曾明白強調：「我們現在要解除社會問題中的紛亂，便要改正這種錯誤，再不可說物質問題是歷史的中心，要把歷史上的政治和社會經濟種種中心都歸之於民生問題，以民生為社會歷史的中心。」³⁸

所以國父在實業計劃中特別強調，一方面要發達國家資本，二方面要節制私人資本。所謂「發達國家資本」，就是避免全國壟斷性的工業被私人所把持，避免財富集中於少數資本家，造成貧富懸殊，這當然是一種溫和的社會主義。另一方面，國父則強調「節制」私人資本——而不是「廢棄」私人資本，這是與馬克思極大的不同處。換句話說，國父在基本上是肯定自由經濟，所以本質上仍然肯定應有私人資本，只不過是要加以「節制」，不要太懸殊，這也就是反「托辣斯」的措施。此所以國父特別引孔子「不患寡而患不均」的道理。其中精神，明顯是以「均富」為重點。其「求均」的精神，為溫和的社會主義，「求富」的精神，則是肯定自由經濟，合而言之，正是民生主義——有社會主義與資本主義之長，而超越了兩者之短。

總之，綜上所述，國父的民族主義可說來自儒家的春秋大義，民權主義則來自儒家的民本思想，民生主義則來自儒家的均富思想，然後再融合西方思潮的精華，不但極能會通中西思想，更能發揚中國傳統哲學的特色，所以對於超越馬克思主義尤其具有世界性的重大啟發意義，確實深值重視與發揚。

八、以社會互助論超越社會鬥爭論

國父曾經特別指出，社會的進步，在於大多數有用份子調和的結果，而不是鬥爭的結果，所以他的學說，可以稱為「社會互助論」。

這一點特色，也可以說來自於中國儒家的互助論。因為中國儒家一向強調「和為貴」，不但在家庭中「家和萬事興」，在經濟上「和氣生財」，在國家也需製和諧團結，此即易經所謂「保合太和」的道理。儒家在易經強調「一陰一陽之謂道」，特別注重其中相反相成的道理，並以家庭中夫妻相處必需和諧互助為比喻，可說最能代表「互助論」的特性。馬克思主義過份突出鬥爭，到毛澤東更一再強調所謂「鬥爭哲學」，不但直接破壞社會的安定性，迫使各種建設無法展開，更造成大量人民在鬥爭中的受害，此所以大陸民衆經過中共卅多年來政治鬥爭運動後，普遍對鬥爭感到厭倦與恐懼。今後大陸若要能有出路，勢必要及早拋棄原來的鬥爭哲學，而向「國父的「互助哲學」學習才行。

因此，縱然馬克思當年所提，對歐洲的資產階級應以鬥爭方式進行專政有其時代背景，但放眼現在大陸情形，不但根本沒有什麼資產階級，而且也早已不需要鬥爭，所以中共那一套為鬥爭而鬥爭的哲學。早就應該加以拋棄。試觀中共連「人民日報」均已提出，馬克思與列寧不能解決其當前的問題——雖然後來又修正為不能解決「所有」的問題³⁹，但很清楚可以看出，這只有欲蓋彌彰而已。中共事實上也覺悟到以馬克思與列寧「彼時」與「彼地」的產物，當然不能因應「此時」與「此地」的需要，因此就面臨了進退兩難的局面了。這就是牟宗三先生所說的「一放就活，一收就死」。由此可見，為了大陸民衆的活路，為了民族命脈的生機，中共必須即早拋棄「鬥爭哲學」，效法「互助哲學」，才是真正可以起死回生之道。先總統 蔣公在「解決共產主義思想與方法的根本問題」中特別強調，中國傳統哲學是戰勝馬列主義唯物辯證法的利器，也就是這道理⁴⁰。方東美先生在英文著作「中國人生哲學」中，特別有一副題強調中國哲學為「廣大和諧的哲學」，並以此來超越當今充滿矛盾、衝突的思潮（即指馬列主義），也是這種深意⁴¹，深值我們正視與闡揚。

九、以民生史觀超越唯物史觀

國父曾強調：「總括宇宙現象，要不外精神物質二者，精神雖為物質之對，然實相輔為用也」⁴²。換句話說，二者均只屬宇宙的「現象」層次，還不是「本質」的本質。那什麼是宇宙的「本質」呢？簡單的說，國父是以「生元」為代表，並且以此同時超越唯物論與唯心論。

這個「生元」是象徵性名詞，來自儒家的易經哲學。孔子在易經所謂「天地之大德曰生」，即在說明天地宇宙的根本動力為「生」。另外在易經又謂「元者善之長也」，即以「元」為衆善之長。如此二者合而言之，即以「生元」代表宇宙一切生命的本源與本質。所以國父曾說：「生元之為物也，精矣，微矣，神矣，妙矣，不可思議者矣」，它不但是一切萬物的產生來源——此國父所謂「按今日科學家所能窺者，則生元之為物也」，也是一切精神良知的來源——所以國父也曾強調「孟子所謂良知良能者，即生元之知生元之能也。」基本上，國父這種思想可說即是對中國儒家哲學的現代發揮。因為儒家的本體論乃是一種「萬有含生論」，不論精神與物質，均視為生命浩然合流的現象。這正是國父的思想淵源，不但遠比馬克思所承自費爾巴哈的人本色彩純正與濃郁，而且更可以用生命意識超越唯物意識，深值我們重視與發揚。

除此之外，國父更將「生元說」結合歷史發展，形成民生史觀，並且以「民生」一詞超越了唯物與唯心的邊見。此所以國父強調：「民生就是人民的生活，社會的生存，國民的生計，羣衆的生命便是」④③，而以最真切整全的民生問題做爲社會歷史的重心。事實證明，不論唯物史觀、唯心史觀、政治史觀、經濟史觀、戰爭史觀、宗教史觀、或英雄史觀，都會產生歷史一元論的偏頗，也就是只從一個角度解釋歷史，永遠無法掌握歷史整全的真貌。但國父以「民生」一詞却能言簡意賅的包含了多元內容——因爲「人民的生活」，既包括精神生活、也包括物質精神，同時也可涵蓋政治生活、文化生活、宗教生活等等，凡此種種均可以包含在「民生」一詞之中，充份可見「民生主義」的內容語意遠超過「社會主義」的偏頗，而「民生史觀」更足以超越唯物史觀從經濟角度看歷史的偏頗，凡此種種優越性，都深值自由世界的學者正視與研究。

十、以和諧辯證法超越唯物辯證法

馬克思的唯物辯證法，基本上表現於恩格斯所謂的「自然辯證法」一文，其後更以此應用於生產力與生產關係的正反矛盾上，其過程基本上是一種以衝突矛盾爲本質的辯證法，表現在外即形成「資產階級」與「無產階級」的衝突，以及「統治階級」與「被統治階級」的衝突。事實上，這種二分法向來是西方哲學的特性，早從柏拉圖（Plato）的理型界與現實界二分開始，到中世紀的人與神二分，到笛卡兒（Descartes）的心與物二分，乃至於現代的主體與客體二分，這些都形成懷海德（A. N. Whitehead）所說的「惡性二分法」（Vicious bifurcation）④④。所以說馬克思與共產黨凡事均「一分爲二」，在此確有其西方哲學在方法論上二分法的根源，因此就更加需要發揚中國哲學以和諧互助爲特色的辯證——借熊十力先生的語句說，也就是一種「泛不二論」的特色④⑤，如此才能在二分法之中求得和諧的統一，而不是永遠停留在相反相鬥之中。

國父在此可說，就是深得中國哲學這種和諧互助的至理。因而落實到政治哲學上，就是強調以互助勝鬥爭，以團結勝分化。所以國父手創的五權憲法，就是要以五權的分工而合作，超越三權分立的強調制衡。先總統蔣公後來在申論時曾特別指出，三權分立是以「制衡」爲特色，而五權憲法則以「互助」爲特色，就是這道理，基本上也正是對中國哲學和諧辯證法的應用。

此所以除了儒家強調「一陰一陽之謂道」外，在道家也以「有」與「無」爲辯證的兩極，此莊子所謂「建立以常無有，主之以太一」*，也可說是和諧互生的辯證法。再如佛學則以「真空」、「妙有」爲兩極而產生「中道哲學」，通過「空」宗而建立「有」宗，都是最能突顯「相反而相成」的重要特性，深值我們重視，然後才能以注重和諧互助的辯證法，勝過強調衝突矛盾的唯物辯證法。

十一、以知難行易論超越社會實踐論

從知識論立場來看，馬克思強調「社會實踐」固然也有其一定的意義，然而他却忽略了，社會也由個人而來，如果只由社會關係來界定個人，則個人必然會失去特色與個性。另外，真理的標準如果只訂在社會實踐，而此所謂「社會實踐」又只限於「階級社會」，顯然本身就成為了雙重的偏頗，所以要由此來看，國父的知難行易說便有很大的啓發意義。

因爲，有關探討真理的標準，國父很清楚的指出，應該要以行來檢驗知。而這個「行」，並不是從階級分析出發，也不是從階級鬥爭來考察，而是看能不能「合用」，能不能實際解決問題。這才是一種真正「實事求是」以及「腳踏實地」的態度。既不從主觀意識出發，也不從階級

成見出發，而是從實際問題出發，並以能否解決問題為檢驗標準。事實證明，這才是真正針對中國需要的解決方法。

此所以 國父曾說：「大凡一種思想，不能說好不好，只看它是合我們用不合我們用，如果合我們用便是好，不合我們用便是不好」⁴⁶。也就是說，要「做成事實，能夠實行，才可說是真理」，這相當接近於美國「實踐主義」(Pragmatism)的真理觀，其中更以強調「力行」為特色，後來 蔣公再發揚成為「力行哲學」，便是這個道理。

試看今天中共雖然表面上也講「實踐是檢驗真理的標準」，但問題是只在口頭講，不能切實力行，以致這句話本身便成了空話。中共一方面明知馬列已過時，另一方面却仍講四個堅持，本身便自相矛盾，以致這話本身反而形成最經不起檢驗的一句話。

所以在此時候，我們就更應多多發揚 國父「知難行易」學說，強調以客觀的事實檢驗原先的制度。尤其中共實行馬列主義卅多年的失敗事實，更足以充份證明其制度之錯誤，所以今後中共如果真要做到「實事求是」，自然應該多多學習 國父思想的「力行」精神，全力根據事實而更正錯誤，唯有如此，大陸民生才能真正幸福，整個民族也才有生機可言。

十二、以世界大同超越世界革命

國父的終極理想，是等中國強大以後，要「扶傾濟弱」，以共進於世界大同。所以中華民國國歌講三民主義是「以建民國」、「以進大同」，就是這道理。這句話一方面指出了三民主義是建國的藍圖，二方面也指出了這是共進大同的階梯。值得注意的是，這個「世界大同」乃是王道的方法，與馬克思霸道的「世界革命」完全不同。

此所以 國父常以儒家精神的「大同篇」贈人：「大道之行也，天下為公」，這種世界大同的公道與王道精神，也正是當今國際社會亟值體認的重點。尤其，三民主義除了在求國內各種族平等外，同時也在求國際上的平等。特別是中國本身強大之後，如果是三民主義統一中國，便絕不會侵略他國——也就是絕不會成為「黃禍」，反而成為「黃福」，善盡世界責任，幫助世界進步，成為促進世界和平的主力，這一點尤其深值國際社會瞭解。

反觀馬克思主義，其所稱的「世界革命」，到了蘇聯手上，便成為世界性的霸權主義與擴張主義，不但置國內民生的困苦不顧，反而一直以軍國主義的裝備向外擴張。事實上不獨俄共如此，中共亦然，只要其經濟一旦改善，就必然會以軍國主義擴張勢力，到了那時，中共成為「蘇聯第二」，「赤禍」加上「黃禍」，那才必定成為自由世界的更大禍源。

所以，要由此來看，方知真正足以促成建國成功與促進世界和平的，乃是 國父的三民主義，一方面它以溫和漸進的民主方式建國，正可做為開發中國家的建國典範，二方面它以世界大同的理想互助互持，更可做為世界和平奠定理論基礎，實在是深值自由世界重視與宏揚。

結 語

總之， 國父早在六十年前，便已明白批評馬克思主義，他雖然很推崇馬克思的用功博學，但更明確指出其中很多嚴重的問題。此所以他批評馬克思只是「社會病理家」，不是「社會生理家」，並且強調「師馬克思之意則可，用馬克思之法則不可」。另外他還曾進一步指出，馬克思雖然用功幾十年，但對後來很多事實却「所料不中」，已經過時，他因而曾經明白指出，其制度與方法「不適用於中國」。凡此種種，經過中共在大陸卅多年的血淚教訓，更加證明了 國父的

遠見，深值世人重視。

尤其，值今紀念 國父誕辰一百廿週年之際，我們更應多多體認 國父一片救國的苦心，特別是善體其超越馬克思主義的卓越見解，多多加以發揚，那才能更加早日拯救大陸同胞於苦難之中。

由此來看，才知 國父以「民族主義」超越「世界主義」，以「民權主義」超越「極權專政」，並以「民生主義」超越「社會主義」，乃是今後發揚三民主義的重大方向。唯有如此，才能從根本上破解中共捏造所謂「新」「舊」三民主義以及「孫」「蔣」三民主義的企圖，也才能切實發揮「以三民主義統一中國」的重大號召。

特別是， 國父融貫中國傳統哲學的特色，以「社會互助論」超越「社會鬥爭論」，以「民生史觀」超越「唯物史觀」，以「和諧辯證法」超越「唯物辯證法」，以「知難行易論」超越「社會實踐論」，並以「世界大同說」超越「世界革命說」，更是一一針對馬克思理論的缺失加以對治，因其深具中國哲學的特色與優點，所以最能超越「來自西方而又反西方」的馬克思主義，以往西方學術界對此認識極少，更深值我們大力闡述。

試觀中共近年來爲了表面上紀念辛亥革命七十年，陸續也出版了一些研究中山先生的著作，然而其基本上仍然是以馬列毛思想爲框框，以致諸多曲解。不過，縱然如此，但中共也不能不承認 國父的偉大人格與思想之進步。所以，值此大陸思想界進退失據之際，特別值得我們海內外有志之士多多闡釋 國父對馬克思主義的批評，進而由「破」再「立」，進一步闡釋 國父本身思想的優越性。相信這不但是幫助大陸思想探索出路的最大關鍵，也是拯救大陸困境打開出路的最大因素。

尤其中共近年來雖然表面上一直高喊所謂「四個現代化」，但細觀其內容，却全部只限於船堅砲利的「科學」層次，既缺乏「民主」，也缺乏「倫理」。所以值此時刻，更值得我們大力發揚以「倫理、民主、科學」爲本質的三民主義，因爲這誠如先總統 蔣公所說，「三民主義的建設，就是現代化的建設」，而現代化的本質，更應以科學、民主、倫理爲重點，缺一而不可。由此方知，不論從學理或實踐來看，三民主義才是大陸上講「現代化」真正應該學習的方向所在。

特別是，二次世界大戰後，世界上又有夠多地區陸續陷入共黨的鐵幕之中，其中原因固然很多，但未能認清馬列主義與共產黨的本質，卻是共同的致命傷，一直到今日中南美洲很多開發中國家，仍然有此隱憂。因而，針對此一世界性的重大問題，如何多多宏揚 國父孫中山先生「破」馬克思主義的方法，以及「立」國家現代化建設的藍圖，在在都深值自由世界今後更加研究與闡述。

相信，唯有如此，不怕一切橫逆，排除萬般艱苦，在 國父三民主義的光照下，早日驅除馬列，恢復中華，才算是真正繼承了 國父「救國主義」的心志，也才算是真正發揮了 國父「愈挫愈奮」的革命精神，或許，這才是追思 國父逝世六十週年，以及紀念 國父誕辰一百廿週年的最重要關鍵！

註 解：

- ①Martin Wilbur, Dr. Sun Yat-sen: A Frustrated Patriot, N.Y., 1981, 特別請參見有關 國父生平的部份。
- ②將 國父的三民主義分化爲「新」「舊」三民主義，並僞稱「聯俄、聯共、扶助農工」爲所謂

「新民主主義」，最早見於毛澤東的「新民主主義」，迄今仍然一直為中共所沿用。事實上國父當時是准許中共黨員以個人身份加入國民黨，是「容共」，而非「聯共」。中共自稱「聯共」，是企圖以此誇大為平衡地位，但與歷史事實完全不符。另外國父從未此將三項並稱，更未稱之為「三大政策」，此一名詞，純係中共所偽稱，蔣永敬教授在香港紀念國父一百廿歲誕辰會議之論文中分析甚詳，深值參考。

③ 國父，民生主義，第一講。

④ Karl Marx, "The Manifesto of the Communist Party," Marx-Engels' Reader, Edited by Robert Tucker, Norton Press, N.Y., 1978.

⑤ 國父，民生主義，第二講。

⑥ 同上，第一講。

⑦ 同上。

⑧ 同上。

⑨ 同上。

⑩ 國父，民生主義，第二講。

⑪ 同上。

⑫ 同上。

⑬ 同上。

⑭ 同上。

⑮ 同上。

⑯ 同上。

⑰ 國父，民生主義，第一講。

⑱ 同上。

⑲ 同上。

⑳ 同上。

㉑ 同上。

㉒ 同上。

㉓ 請見美國紐約「知識份子」(The Chinese Intellectual)對胡克博士的專訪，見一九八五年所出版第一卷第三期。另外胡克博士於一九八三年底訪問東海大學演講時也曾做過同樣表示。

㉔ 國父，民生主義，第二講。

㉕ 請見梁漱溟先生於民國七十年一月刊於香港「百姓」半月刊，的專文有關分析「大陸動亂之思想根源」。

㉖ 國父，民生主義，第二講。

㉗ 同上。

㉘ 國父，民族主義，第三講。

㉙ 同上。

㉚ 同上。

㉛ 見中共「半月談」所刊之「宣傳員講話」，一九八三年六月號。

- ③② 國父，民族主義，第一講。
- ③③ Lenin, "State and Revolution", The Essential Works of Lenin, N.Y., 1945.
- ③④ 此為中共常用語句，特別可見中共「社會科學院」一九八一年所出版之「孫中山哲學思想」，此書由蕭萬源掛名執筆，但在後記中明言是「集體的成果」，所以有其一定的代表性。
- ③⑤ 國父，民族主義，第六講。
- ③⑥ 國父，「關於民生主義之說明」演講。
- ③⑦ 國父，民生主義，第一講。
- ③⑧ 同上。
- ③⑨ 見中共「人民日報」一九八四年十二月七日「理論與實際」一文，其中明白表示「不能要求馬克思、列寧當時的著作解決我們當前的問題」，後來又更正為不能解決「所有的問題。」
- ④⑩ 請參見 蔣公，「解決共產主義思想與方法的根本問題」，民國四十一年所講，台北黎明公司印行之單行本。
- ④⑪ 請參見方東美先生所著，「中國人生哲學」(The Chinese View of Life)，聯經出版社於民國七十年再版。
- ④⑫ 國父，「軍人精神教育」演講。
- ④⑬ 國父，民生主義，第一講。
- ④⑭ A.N. Whitehead, Adventure of Ideas, N.Y., 1964, p.35.
- ④⑮ 熊十力，「十力語要」，台灣洪氏出版社，民國六十四年初版，卷一，頁六四。
- ④⑯ 國父，民族主義，第三講。

On Dr. Sun Yat-sen's Criticisms of Karl Marx (abstract)

Fung, Hu-hsiang

Back 60 years ago, Dr. Sun Yat-sen, the national father of the Republic of China has made a number of cogent criticisms of Marxism. Briefly speaking, although Dr. Sun admired Marx's scholarship, he never thought that Marxism as a whole was right. Actually, the bloody failure of Marxism in mainland China for the past 36 years is the best proof. Therefore, as the national father of China, he pointed the way China should go, and go away from Marxism.

Nevertheless, since the Chinese Communists have been trying to distort Dr. Sun Yat-sen's doctrine from the Marxist viewpoint, this paper would like to present Dr. Sun's criticisms of Marxism from 12 points.

- (1) First, according to Dr. Sun, Marx was at most a "Social Psychopathologist," but not a "Social Psychologist," because Marx only saw social illnesses, but failed to correctly understand the real structure and forces of social development.
- (2) Second, Dr. Sun also cautioned that, although the motives and ideals of Marx's social program were acceptable, his proposed means of implementation should never be adopted.
- (3) Besides, Dr. Sun emphasized that Marx, though having good knowledge of social facts past and of his time, yet failed to foresee later developments. Capitalist societies do not go the way as Marx expected.
- (4) Consequently, according to Dr. Sun, Marxism was not, and never would be suitable for China, because there were no such needs in China.

Thus, taking into consideration the particular situation of China and the unique cultural heritage of the Chinese people, Dr. Sun designed an economics-political philosophy which could be taken to overcome Marxist ideology point by point which could be summarized as following:

- (5) China should live by nationalism instead of universalism. Nationalism is not necessarily "narrow" as some people think it is. Dr. Sun thought that universalism was a form of disguised imperialism.
- (6) China should establish constitutional democracy and reject totalitarian absolutism.

This was to counter Marx's proposal of "proletariate dictatorship".

- (7) China should follow socialistic free-enterprise in economic affairs which surpasses Marxism. This principle asserts the basicness of citizen's economic prosperity, allows free economy, ensures fair distribution of wealth, and requires humanitarian approach to social reform.

The above are collectively called the Three People's Principles (San Min chu'i),

or Sun Yat-senism.

In philosophical areas, Dr. Sun also had good ideas to counter Marxism as following:

- (8) Against Marx's theory of class struggle, Dr. Sun forwarded his theory of social cooperation.
- (9) Discarding Marx's historical materialism, Dr. Sun presented his historical Vitalism.
- (10) Rejecting Marx's materialistic dialectics, Dr. Sun propounded his harmonious dialectics.
- (11) And, taking issue with Marx's theory of social practice, Dr. Sun emphasized the pragmatic aspect of true idea.
- (12) Rejecting Marx's theory of world Revolution, Dr. Sun proposed his doctrine of World Harmonious-cooperation.

In short, Dr. Sun Yat-sen has succinctly identified the obvious mistakes of Marxism, repeatedly warned against the misleading results of Marxism, and diligently formulated a system of thoughts to overcome Marxism. This paper attempts to explore the relevant arguments in order to show that Sun Yat-senism is more reasonable, more humanistic, and more suitable for China and other countries in like situation, than Marxism.

「運動」概念與方法論的關係

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§ 1.0 科學哲學的觀點：

科學哲學 (philosophy of science) 是二十世紀哲學活動的一項極重要的工作，例如：對方法論的反省、對經驗科學中的重要或基本原理與概念的分析，科學理論的一般結構、科學理論及科學運作所涉及的各種（經驗的或非經驗的）條件等。這些工作的目的，一方面希望提供科學家一套更清晰的科學語言，使科學工作者能更進一步認識方法上的結構和意義；另一方面，還希望對科學理論中基本概念及原則之分析而能直接或間接地發現一些新問題，釐清科學知識的意義，提供我們一幅更清晰的世界圖像。

運動的概念可藉古典力學的發展來加以說明，古典力學的基本原理分別見於運動學、靜力學及動力學。但是，在這些理論中，存在着許許多多的概念等待我們去作進一步的分析及釐清的。經驗科學（特別是自然科學）中的概念基本上是藉運作定義法 (operational definition) 加以界定的，例如時間的概念就藉時鐘以界定時間單位，而長度或距離的測量則需要借用剛體或其他更精確的「自然物」作為量度標準。儘管這樣，時間和空間的性質或本質卻未能因上述的運作定義法而獲得解決，例如在運動學中，運動這個概念就牽涉及連續、無限、時空、力等概念。連續的概念是與時間、空間、無限等概念糾纏在一起的，但是，無限是甚麼意思呢？這個概念並不清晰，這樣，連續、時間、空間等概念也因此等待分析。

本文的工作是藉分析運動及運動學的發展而討論方法論問題。由於亞里斯多德的思想影響西方科學界近二千年之久，所以，本文將詳細地把亞氏有關運動的概念（因而有關他的物理學概念）展示出來，從而指出亞里斯多德在方法論方面的貢獻，特別是「演繹」理論這個概念，然後進一步分析亞氏在方法論上的構想如何在歷史的各階段中一步一步地實現出來。

§ 2.0 亞里斯多德對「運動」概念的分析及其方法：

我們今天所謂古典力學，是經過二千多年的悠長歲月，分別由許多思想家及科學家作一步一步地修改前人的理論而慢慢發展出來的。「發展」就表示一種「進步」，推動進步的因素或條件往往又與方法的運用分不開。就以力學的理論來說，亞里斯多德、歐幾里德、阿基米德、托勒密

、伽里略等皆各有所見，可見，科學知識是長期累積而得的，以下我們先深入地探討亞里斯多德對運動這個概念的分析以及他所謂物理學的工作及方法論問題。

§ 2.1 亞里斯多德所謂「物理學」的意義

英文中物理學 (physics) 一名及源自拉丁化的希臘文中 $\phi\upsilon\sigma\iota\varsigma$ (physis) 一字，在亞氏的思想中， $\phi\upsilon\sigma\iota\varsigma$ 一字在語意上又可譯為「自然」 (nature) ，故亞氏所謂物理學其實就是討論自然界之學問。換言之，物理學等於亞氏的自然科學。然而，何謂「自然」 (物理) 呢？這可從下列兩方面加以說明：

(A) 從語意方面說：亞里斯多德所謂自然乃指事物本身具有「運動」及「靜止」的原則而言。亞氏無疑是把事物分為兩類，即自然之物與非自然之物。自然之物具自然之性，它們是「自然地」如此的 (physei, exist by nature) ，這是說，這些東西內在地具有運動 (kinesis) 及靜止 (stasis) 的原則。運動這個概念在亞氏的著作裡不主要是指空間上的位置，而且還包括質與量方面的變遷。非自然之物就是指「非自然」地如此的事物，它們要藉着其他的條件才能存在。換言之，自然之物具有「運動」或「靜止」之性，而非自然之物則否。

由於自然之物具有「自然之性」，亞氏便從而提出「順其自然」 (kata physin, according to nature) 這個概念以解釋一些自然現象。例如火炎向上這個現象便被解釋為「順其自然」 (順其本性) (註①) 。

(B) 就本質意義說：事物的自然之性乃其理型或「形式」 (form, idea) (註②) 。這是說，自然之物依照它們的內在原則而變化，這些原則就是理型。在這裡，理型是自然之物在變遷時所依據的原則，由於這些原則各有不同，故事物的變化情形也有差別；也就是說，事物依其本性 (nature) 而運動，不同事物具不同的特質，因而也就具有不同的本性 (原則、理型) 。例如，蘋果的種子在生長 (運動) 過程中逐漸發展成蘋果樹，而不會發展成爲桃樹，這是由其內在的本性所決定的。

亞氏把事物的「自然之性」視作決定事物 (自然之事) 運動的內在原則，或內在的活動原則 (initiating principle) 。「原則」 (αρχή, arche) (註③) 一詞在古希臘哲學中是個極重要的概念，它有「第一因」及「始點」的意思，總之是指促成事物存在的最根本原因或條件而言。古希臘的哲學家自梯利斯開始便認爲只要我們認識這些基本的原則，我們才對事物有知識 (episteme) 。因此，亞氏的思考方式其實是順着古希臘傳統而來。

亞里斯多德把知識分為三大類，這就是他所謂理論知識、實踐知識及創造性的知識，其中理論知識包括了物理學。亞氏認爲物理學是處理那些具有獨立存在，但卻爲「非不可變」的事物，這就是上述所謂具有本性 (自然) 的「自然之物」 (natural bodies) 。物理學既然在於處理自然事物，這可視爲是亞氏的廣義物理學，在這個意義下，亞氏的物理學其實包括他的著作中下述各部份 (註④) ：

1. 研究自然之物的運動原因 (見他的 physis) 。
2. 研究天體的運動及其秩序 (見 De Caelo, I, II) 。
3. 研究物體的元素之性質、元素的數量以及元素與元素之間的變動 (見 De Caelo, III, IV) 。
4. 研究事物的產生及毀滅的情形 (見 De Generatione et Corruptione) 。
5. 氣象學。

亞里斯多德在他的「物理學」(論自然)卷二第一節裡指出：自然科學家(或作物理學家)在研究自然現象時，要接受自然現象是在變遷之中的這個事實，因為這是個藉着歸納而得到的事實，否定這一點便是違背事實。

§ 2.2 方法的問題：

(A) 科學解釋的四個層次：

一般人在談到亞氏的哲學時，便常常提到所謂「四因說」(the doctrine of the four causes)，這個概念需要在此略加說明的。此處所謂「因」(cause)乃譯自亞氏原著中“αἰτία”(拉丁化為aitia)一字而來，西塞羅(Cicero)把它譯成拉丁文“causa,”這就演變成英文的“cause”一字(註⑤)。“aitia”在亞氏的原意是指「使事物成為如此這般的因素或條件」而言，從這些條件以說明事物的「為甚麼」(why)這個問題(註⑥)。在這個意義下，「四因說」其實是從四方面說明事物的原因，這是「科學解釋」(scientific explanation)的四個層次或四個步驟。亞里斯多德說：

「我們接下來的，就是要考慮『使事物成為如此這般的因素(aitia)』的問題：這是指這些因素是甚麼，以及它們如何加以分類。因為我們研究的對象是知識，同時，除非我們掌握了事物的原因(dia ti, the why)，否則我們便不會有其知識。也就是說，要掌握對此最有關係的因素(prote aitia)」(註⑦)。

亞氏認為只有當我們掌握了這四種條件(因素)之後，我們才有真知識。這四種因素就是：

1. 物質因素。
2. 形式因素。
3. 動力因素。
4. 目的性因素。

(B) 觀測、因果性及本質問題：

亞氏除了在他的「物理學」裡提出從上述四個層次以解釋事象之外，在他的「分析後論」(Analytica Posteriora)裡又提及有關科學知識的四個問題(註⑧)：

1. 第一個問題是：事物是否事實上具有某些屬性？亞氏以太陽是否處於日蝕狀態之中為例，以觀測作為檢證自然科學命題的必須條件。
2. 第二個問題是：主詞與述詞之間的連接，其內在之原因是甚麼？他指出：當我們一旦知道某種事實之後，就要繼續研究構成這種事實的原因。例如，當我們知道日蝕或地震時，便要研究其中的原因。亞氏的意思是說：我們要研究經驗命題的因果關係，也就是藉着因果性而說明主詞與述詞之間的因果關係。自亞里斯多德以來，因果關係便被發為經驗科學的命題之關鍵性。
3. 第三個問題是：有關事物是否存在？
例如：上帝是存在嗎？
4. 第四個問題是：有關事物的性質是甚麼？
當我們肯定了事物是存在之後，我們還要研究有關事物的性質。例如：上帝是甚麼？人是甚麼？這是屬於本質問題。

(C) 演繹與歸納：

亞里斯多德在「分析後論」一書裡提出演繹法與歸納法在建立知識的過程中之功能，他對演繹法的觀點可分下列各點加以說明：

1. 科學知識的性質：

一切推論皆從真實的前題出發。一切論證皆始於前題，而前題必是一些已知的知識。他認為數學及其他理論性學科如三段論邏輯都是藉著這種方式而獲得知識的，因為三段推論假定聽者要接受前題，而歸納推論則是從個別的已知命題結出全稱（普遍）命題（註⑨）。

進一步而言，亞氏認為前題必須是基本的，這是說它們不是從推論而得。這個概念又稱之為公理，公理在整個論證過程中是一種「直接命題」。他說：「一個直接的命題是沒有其他命題較它更具優先性」（註⑩）。總之，直接命題是指不是藉推論而認知，並且是真的命題，這些命題就是公理，用作演繹推論的前題。在原則上，演繹推論的前題可以是假的，但是，當前題為真時，而推論又是有效的，那麼推論所得的結論便也是真的，這是亞氏要求前題為真的理由。但是，如果是歸納推論，則從個別的真命題是否就必然推論出全稱地真的命題，那就可疑了。歸納推論與演繹推論在本質上有異，亞里斯多德並未對前者作較為深入的分析。至於就演繹推論方面說，他認為公理具有優先性，這也不是完全正確的，例如現代人把命題邏輯公理化的結果，作為公理的命題並沒有任何演繹推論上的優先性，因為在這個公理系統中用作公理的命題，在其他的系統中可以是定理。

2. 演繹推論的三種成素：

亞氏認為推論是由三種成素構成：

- (1) 結論。這是一些已被證明的命題。
- (2) 公理。這是指用作推論的前題（真確的命題，直接地被認知）。
- (3) 一些主詞的集合，它們的屬性在推論過程中能被展示出來（註⑪）。

從系統性方面看，推演的結論稱之為定理，公理則是推論的始點。亞里斯多德所謂「主詞的集合」則指所要處理的對象領域而言。但是，除了這三項之外，無論是個別的推論或系統性的推論，都需要一些推論規則，亞氏卻沒有把這點列進去。現代的公理系統法更清楚得多，例如一個邏輯系統的建構方法可從語法方面或語意方面入手。如果先確立語法系統，那麼語意系統便視作語法系統的詮釋（interpretation）；反之，如果先有語意系統，則按照語意系統而建立的語法系統便稱之為語意系統的形式化（formalization）（註⑫）。

• 3. 歸納法的作用：

亞氏認為科學知識（episteme）是藉演繹而建立的，而用作演繹的前題則必須是基本或直接的。現在的問題是：這些基本或直接的命題是從哪裡得來的呢？他的回答是藉着歸納法而來，歸納法是一種歸納推論，企圖從個別的命題推論出全稱命題。進一步而言，我們如何能認知歸納出來的命題是真確不誤呢？亞氏認為要判斷這些命題的真假，惟有依賴我們的直覺能力（intuition）。直覺是相對於迂迴曲折的思維而言（discursive thinking）。總之，他認為科學知識（即藉演繹推論而得的知識）是“disursive”，而建立科學知識的那些前題則是“intuitive”。「除了直覺之外，沒有其他的知識

較科學知識更為真確」(註⑬)。

亞氏認為建立科學知識的方法一方面主要是藉演繹推論，另一方面，用作演繹推論的那些前題則是藉歸納法建立起來的。這個觀點非常值得檢討。落在實際的理論上，無論是歐幾幾何的公理或是以後牛頓力學的三公理，皆在嚴格意義下不是藉歸納法(更清楚地說：不是藉枚舉的歸納法)建立起來的。至於把這些公理視作直覺地真確，這樣的觀點也非沒有異議，例如：歐氏第五公理所引起的爭論，足以說明把系統中的公理之真確性，並訴諸直覺，這是不適當的。在這種情形下，如果我們把歐氏系統中的公理或牛頓之公理視作一些並未滿足亞氏所謂公理意義的命題，那麼，我們就會懷疑亞氏所謂的直接而基本的直覺知識是否可能。此外，亞氏沒有分別經驗科學的公理及形式科學公理之間的差別，這也是值得我們注意的。退一步而言，亞氏在二千多年前，已提出演繹法，歸納法、實驗觀察、因果性、公理等基本構想，這在方法論上已是一項非常重要的突破和貢獻。

§ 2.3 亞里斯多德的世界圖像：

「運動」(kinesis, motion) 這個概念是亞氏物理學(自然科學)中最重要的概念之一，它與「自然」一義有密切的關係。在「物理學」一書第三卷的開端，亞氏把「自然」定義為「運動與變遷的原則」(註⑭)。運動是指「當物體是潛在地存在時，則它的潛在性之實現便是運動」(The fulfilment of what exists potentially, in so far as it exists potentially, is motion)(註⑮)。他把存在界的事物分為三類，第一類是「只以實現的形態而存在的(what exists in a state of fulfilment only)」，第二類是以潛在的形態而存在的(what exists as potential)，第三類是前二者的綜合，即同時以潛在及實現形態而存在的。根據上述有關運動的定義，則亞氏所謂運動其實包括了事物的質及量之變化及空間的位移(locomotion)，例如發生(genesis)與毀滅乃「可創造之物」與「可毀滅之物」的實現。然而，事物的潛在性又是甚麼呢？潛在性就是事物的本質(ti esti; essence)，也就是事物的理型或形式，這也是事物在現實過程中所朝向之目的(telos)(註⑯)。現在，我們從下列二方面進一步說明亞氏對運動的理論：

§ 2.31 運動的永恒性：

無論是質變、量變或位移都直接地涉及時間這個因素，因此，當我們分析運動時，就會考慮到運動在時間方面是否有個始點及終點(停止運動)的問題。亞里斯多德認為：

A 物體有一運動之始點這個假設有理論上的困難：

假設任何可動性之物體皆有一始點，那麼，在這個始點之前，物體是不運動(靜止)的，這樣我們就必須假設一些條件以說明運動的出現，這些條件必在運動(變遷)之中。在另一方面，如果我們假設運動有一終點，那麼，在終點之後必仍有一運動(變遷)，因為運動物體本身既具有運動之傾向性，則除非另有事物消除這種傾向性，否則這種物性依然存在(按：亞氏這論證有困難，因為物性中之傾向性只是潛在性而非現實性)。但是，若要消滅這種傾向性或潛在性，就需要借助一毀滅者將之毀滅，而毀滅本身就是一種運動(變遷)。如此層層推進，則運動是永恒不滅的。

(B)從分析「時間」這個概念入手也能說明運動的永恒性。

如果時間是不存在的，我們就不能說明事物在時間上有先後次第的情形。如果時間是存在的，

，那麼，運動就必然地存在。我們可以把時間構想成爲量度運動的尺度（標準），並且把時間視作運動之物（time itself as a kind of motion）。亞氏的論點是：無論把時間視爲量度運動之尺度，或是視時間本身就是一種運動，如果時間是永恆地存在的，那麼運動也就永遠存在。亞里斯多德認爲時間有一個特性，就是它與「現在」不可分。「現在」是一種居間的情態，它具有二重性格。它一方面是「將來」的始點，另一方面又是「過去」的終點（註⑰）。如果時間確具有這種真實性，那麼運動也具有真實性，因爲時間是可從「運動」而導出的。（亞氏這個論點並不很清晰，他的意思可能是說運動這個概念含有時間的概念。但是，時間這概念是否也含有「運動」這個概念呢？除非我們把「時間」視作「時間流」，否則時間沒有運動的意義。然而，把時間視爲時間流是亞氏所持的，因爲把「現在」視爲「未來」與「過去」的居間之事，就是說時間乃一連續變遷之物）。

§ 2.32 運動的外在與內在媒體

亞氏在他的「物理學」一書第八卷第四節論到運動的外在與內在的原因時指出：

「對於發生或承受運動的物體來說，有些運動只是偶然的，而有些運動則屬於物體本性的實質。……對於那些以運動作爲其本性（本質）的物體來說，它們之中，有些運動是自發的，有些則得自外在的原因而使之運動。換言之，有些事物的運動是自然的，有些則要借助於違背其本性（自然）才運動」（註⑱）。

然而那些東西的運動是「自然的」呢？而那些東西的運動是「非自然的」或是要借助外在條件才能運動呢？亞氏認爲前者是指「動物」，而後者則指「物體」（soma, physical body）而言。所以，他又說：

「對於那些本身就具有運動原因的物體而言，例如，動物（因爲任何動物都是自動的），他們的運動是自然的。任何物體的運動原則是內在於運動物之自身，則其運動是自然的，所以，動物界的運動是自然的。但是，動物的身軀之運動可以是自然的，也可以是非自然的，這就視乎承受運動的類別及構成形軀之元素的種類。進一步而言，以其他事物作爲運動原因之運動也可以是自然的與非自然的，例如，地球上物體向上運動，以及火向下運動便爲非自然的……當這些物體的運動是逆乎其正確位置時，這些運動便是非自然的，其運動是強壓的；當它們是順其適當位置而運動時，這樣的運動是自然的——例如輕的物體向上，而重的物體向下便是」（註⑲）。

籠統言之，亞氏認爲動物的運動是自然（自動）的，而物體的運動則在某一意義下可視爲自然的，而在另一意下可視爲非自然。前者乃指順乎其恰當的位置而運動，如火勢向上；後者則指逆乎其恰當的位置而運動，如火勢向下。這裡所謂恰當的位置或不恰的位置，乃本於亞氏的地球中心說而來，以爲凡屬地球之物體，其本性便朝向地球而運動。

無論是自然地運動或非自然地運動，皆有其推動者（mover），自然運動之物體的推動者就是自身，而非自然之物的推動者爲其自身之外的其他原因。於是，亞氏便下結論說：

「任何運動的物體皆藉某物（something）所推動」（註⑳）。

這個結論或推論在觀念上容易引起推論上的錯誤，因爲亞氏企圖把以上的結論引伸爲：「凡是運動皆有原因」，再從這個普遍化的命題推論出獨一無二的永恆不滅之「不動的動者」（Unmoved Mover）。但是，上述引文中所謂「某物」（原因），如果是指「自然之物」（自動之物）而言，則這裡的「某物」便是衆多的，例如許許多多的動物。衆多的自然之物既是自動

的，則我們就不必再假設在其自身之外另有原因，除非我們把所謂自動之物再分為狹義與廣義兩種，並且指出在狹義的層面下，經驗存在界沒有「自然」之物。

亞氏既認為「任何運動之物體皆要藉某物所推動」，（其實在他的系統中，這只能指物體（physical body）而言，於是他便進一步推論出整個世界萬事萬物的運動必有最終的原因，這個原因既然是最終的，它就不必再藉別的原因（條件）就能自動。進一步而言，這個運動的最終原因是獨一的呢？抑或是多於一呢？亞氏認為如果我們假定獨一的原因與假定衆多的原因者能解釋運動的話，那麼，我們這採取獨一的假設，這可以視作基於理論的簡單性及思想的經濟性作為理由。於是，運動的最終之推動者是獨一無二的，祂是一切運動之根源，為永恆不滅的創生原則（the eternal originating principle）。亞氏的物理學表現出他的一幅世界圖像，我們就根據的構想把這幅世界圖像圖表之如下（見圖一）。

§ 2.4 運動與力的概念：

(A) 作用力與物理的速度成正比：

我們在上文已經說過，亞氏把物體的運動分為質、量及空間位移三種，其中空間的位移及作用力等概念都是力學中的問題，我們在本節就進一步分析亞氏對於位置的運動及力的概念。亞里斯多德在他的「物理學」卷二第二章裡，論及位移及其原因時說：

「任何物體之運動乃由其他物體所推動，這是普遍地真確的。同時，由於有位移，質及量三種運動，因此，就必然有三種推動者：這是指促成位移的原因，使事物變化的原因及使之增加或減少的原因。

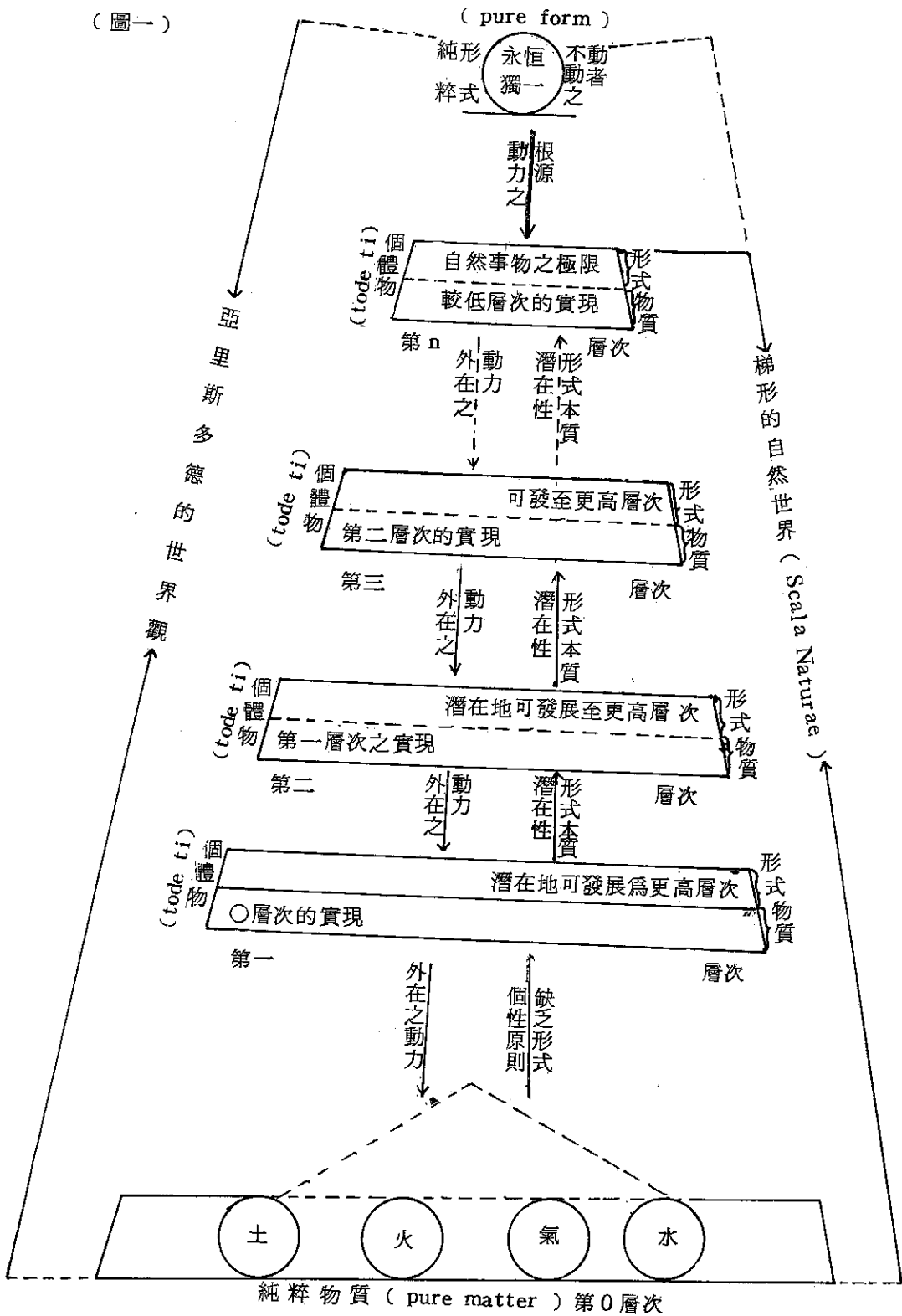
讓我們先從位移著手，因為位移是一種基本的運動。任何在位移之中的事物皆被其自己或被另一些事物所推動……運動中的事物若是被其他物體所推動，則其運動的途徑不外是下列四種，因為除了運動中的物體之外，促使其運動的原因不外只有四種，這就是拉、推、搬運及扭動四者」（註②）。

亞里斯多德把物體位移的運動（本文以下就簡稱之為「運動」）原因以四種力加以說明，這就是推力、拉力、搬運及扭動，其中以推力及拉力為最根本的力。在「物理學」一書第七卷第五章裡，他就分析（位移）運動及力之間的關係：

「現在，由於任何推動者（movent）的運動皆作用於某些事物上，常常是在於某物之中及常常擴大到某物中去（所謂「常常是在某物之中」，我是指佔有時間而言；至於所謂「擴大到某物中去」，我是指它在移動中涉及某種距離的量，因為在任一瞬間，當物體正在促使運動時，它也必然已經促使物體作了運動，這就使到位移有一定的距離，以及佔有某些時間）。於是，如果推動者A使到B在D時間內移動C的距離，那麼，在同等時間中，同等的力A會使 $\frac{1}{2}$ 的B所移動的距離為C的二倍，而在 $\frac{1}{2}$ 的D內，它使 $\frac{1}{2}$ B移動整段C的距離，因而我們所可以觀察到比例（按：指正比例）的規律。其次，如果一已知的力使一已知的重量在某段時間中移動某一距離，以及在 $\frac{1}{2}$ 的時間裡移動 $\frac{1}{2}$ 的距離，則 $\frac{1}{2}$ 的推力將會在同等距離及同等時間內移動 $\frac{1}{2}$ 的重量（物體）。設E代表 $\frac{1}{2}$ 的推力A，而F則代表 $\frac{1}{2}$ 的重量B，則在其一中推力與重量之間的比率與在另一種情形下的比率相同。於是每一力將會使到物體在同等時間內移動同等的距離」（註②）。

這段引文表明亞氏在力學方面的一些觀念，他的要旨是說：同樣的物體，其速度與所受到的

(圖一)



作用力成正比，這是說：作用力愈大，速度便愈快。亞氏這個觀點雖然在常識層面上看似正確，但卻沒有考慮到摩擦阻力及慣性問題，這些概念到伽里略之後才明朗。至於就亞氏所列舉的實例而言，他所謂推動者A就是指力（ F ），而B用現代的概念說就是質量（ m ），D時間我們以 t 表示，而移動的距離C我們用 s 表示，亞氏所講的是屬動力學問題。在動力學中，我們有衝量及動量之間的關係式，此即 $F \cdot t = m \cdot v$ 。於是 $F = \frac{m \cdot v}{t}$ 。利用此式，我們就可以檢查亞氏之說是否正確：

例一：「如果推動者A（ \vec{F} ）使到B（ m ）在D時間（ t ）內移動C的距離（ \vec{s} ），那麼，在同等時間中，同等的力A會使 $\frac{1}{2}$ 的B所移動的距離為C的2倍。

現把例一中的條件列表如下：

	推動者 (A)	物體 (B)	時間 (D)	位移 (C)
1.	\vec{F}	m	t	\vec{s}
2.	同等的力 \vec{F}	$\frac{1}{2}m$	同等的時間 t	$2\vec{s}$

$$(1) \vec{F} = \frac{m \vec{v}}{t} = \frac{m \frac{\vec{s}}{t}}{t} = \frac{m \vec{s}}{t^2}$$

$$(2) \vec{F} = \frac{\frac{m}{2} \times 2 \vec{s}}{t^2} = \frac{m \vec{s}}{t^2}$$

$\therefore (1) = (2)$ q.e.d.

可知例一正確。

例二：「而在 $\frac{1}{2}$ 的D內，它使 $\frac{1}{2}$ B移動整段C的距離」。

	推動者 (A)	物體 (B)	時間 (D)	位移 (C)
3.	\vec{F}	$\frac{1}{2}m$	$\frac{1}{2}t$	\vec{s}

$$\begin{aligned} \therefore (3) \vec{F} &= \frac{m \cdot v}{t} = \frac{m \vec{s}}{t^2} = \frac{\frac{m \vec{s}}{2}}{(\frac{1}{2}t)^2} = \frac{\frac{m \vec{s}}{2}}{\frac{t^2}{4}} \\ &= \frac{4m \vec{s}}{2t^2} = \frac{2m \vec{s}}{t^2} \end{aligned}$$

$\therefore (3) \neq (1)$

可見例二中所需要的力（ F ）與(1)及(2)有差別，但亞氏卻認為例二中的情形也需用同等（與例上(1)(2)）的力，這是錯誤的，理由在於他並未認識到 $F t = m v$ 的關係式，他所構想的只

是憑藉常識的猜度。

(B)作用力的合力等於其代數和：

關於作用力之間的合力問題，亞氏在他的「物理學」卷七第七章裡說：

「在另一方面，如果有二力，每一力皆在某一已知時間及已知距離移動二重量，則此二力的合力在同等時間及同等距離能移動二重量之和」（註②）。

爲了分析亞氏這句話，讓我們設二個力 \vec{F}_1 ， \vec{F}_2 及其合力 \vec{F} ，二質量 m_1 及 m_2 （這大抵是亞氏所謂重量，現代物理學中所謂重量是 mg ），其對應之運動時間分別爲 t_1 ， t_2 及位移 \vec{S}_1 及 \vec{S}_2 ，而在使用合力 \vec{F} 時，其位移爲 \vec{S} ，而其所需的時間爲 T 。上列引文雖然只是一句話，但卻涉及動力學中下述幾個問題：

(1)衝量：這是指力（ \vec{F} ）與施力時間（ t ）的乘積，即：

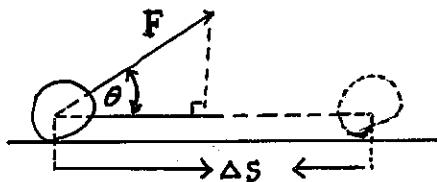
$$\text{衝量} = \vec{F} \cdot t$$

(2)動量：這是指物體的質量（ m ）與其速度的乘積，即：

$$\text{動量} = m v = m \cdot \frac{\Delta \vec{S}}{\Delta t}$$

(3)功（ W ）：功的計算是位移（ \vec{S} ）與力（ \vec{F} ）在 X 軸的分力之乘積。

（圖二）



故 $W = \vec{F} \cos \theta \cdot \Delta \vec{S}$ ，更清楚地說是：

$$W = \int_{s_1}^{s_2} \vec{F} \cos \theta \, d\vec{s}$$

(4)功率（ P ）：指所作的功與作功所需時間之比率，

即： $P = \frac{\Delta W}{\Delta t}$ （平均功率），更清楚地說，則

$$P = \lim_{\Delta t \rightarrow 0} \frac{\Delta W}{\Delta t} = \frac{dw}{dt}$$

根據以上各種意義，我們就不難判斷亞氏的論點是否正確：首先，我們發現亞氏引文中有關所謂合力（ \vec{F} ）在「同等時間」及「同等距離」二義極不清楚。這是說，究竟他的意思是指： $T = t_1 + t_2$ ？抑或 $T = \frac{t_1 + t_2}{2}$ ？或者還有其他別的意義？同樣，他所謂合力在同等距離的情形也是如此，即： $\vec{S} = \vec{S}_1 + \vec{S}_2$ ？或者 $\vec{S} = \frac{\vec{S}_1 + \vec{S}_2}{2}$ ？或者還有別的意義？

更嚴重的問題是：在涉及到力的問題時，亞氏對合力的概念並不清晰。由於力是個向量（具有方向意義的量）而非純量，二力（ \vec{F}_1 及 \vec{F}_2 ）的合力並不一定等於二力的代數和，而只有在在一種極爲特殊的情形下才等於各力的代數和，這種特殊情形是指當二力互爲平行地施用時。在各力不是互相平行的情形下（這種情形最爲常見），則合力不等於各力之代數，這點清

楚之後，則亞氏上述的論點就難於接受，更何況，我們還指出上述語句的意義並不清楚。

(C) 直線運動與圓周運動：

關於運動的形式，亞氏在他的「論天體」一書的第一卷第一章裡，認為運動的形式只有二種，即直線運動與圓軌道運動。他說：

「所有在位置上的運動，即是說，一切位移，正如我這樣稱它，是直線的或圓軌的，或是這兩者的混合，這些都是簡單的運動」（註⑳）。

所謂「簡單的運動」究竟是甚麼意思呢？是指在日常生活中最常見的物體之運動形式呢？抑或是指理性思考中的幾何圖形呢？如果是指前者，那麼，當我們隨便拋一塊石頭時，它的運動形式顯然既非直線的，也不是圓周的。若是指前者，那麼，我們又如何能說明從理性思維的構想而得的所謂簡單幾何圖形確實是經驗領域裡的物體運動的基本（簡單）形式呢？在天體物理學上，從亞里斯多德到哥伯尼，都以為行星運動的軌道是圓軌的，到了開普勒才指出這種錯誤，與開普勒同時代的法蘭西斯培根也指出，把行星運動的形式視作圓周運動的構想乃人類思維的錯誤傾向，這是一種偏愛簡單性的傾向，他把這種傾向列入他所謂的「族類的偶像」（idol of tribe）裡（註㉑），培根所謂偶像，是指產生錯誤的傾向之因素而言。

§ 2.5 其他的哲學問題——運動與無限：

古希臘的依利亞學派曾企圖否定運動，哲諾（Zeno）嘗試從多方面論證運動為不可能，就以古希臘的飛毛脚阿芝拉斯（Achilles）追不上烏龜的論證為例。假如烏龜先走了一段路程，哲諾請在這種情形下，阿芝拉斯便永遠追不上烏龜。哲諾的論證是這樣的：若阿芝拉斯要趕上烏龜，則他必須要先跑完全程的一半，但是他若要達到這目的，便必須要先跑完此一半的一半，如此類推，則阿芝拉斯在實際上便永遠不能動，由此而推說運動乃不可能（註㉒）。亞里斯多德認為運動是真實的，為了指出哲諾的觀念錯誤，就必須先要對「無限」這個概念作分析在「物理學」卷三第七章裡，亞氏就從加法與分割這二個概念分析無限的問題。

(A) 從加法概念說，所謂無限是指一部分一部分地相加而無法窮盡的意思。

(B) 從分割的概念說，無限是指無窮的分割而言。

在這二個意義下，則

1. 時間的無限性具有加法及分割的意義。
2. 空間的無限性是指無窮分割而言。
3. 數的無限性是指加法意義的無限性而言。

亞氏指出一個有限的整體，當它以一均等的量（單位量）不斷地分割時，必在一段有限的時區中窮盡。但是，若所分割的量按一定比例不斷減少時（例如 $\frac{1}{2}$ 、 $\frac{1}{4}$ 、 $\frac{1}{8}$ ，……），則永遠不能藉着這種分割而窮盡這個有限的整體。回到哲諾的問題上，亞氏指出雖然在有限時間之內無法越過無限的空間，但卻能夠在有限時間內越過「無限分割」的空間，因為有限時間本身能夠無限地加以分割（註㉓）。無限的問題牽涉及多方面，若要詳細分析這個問題，當另立專文討論。

§ 2.6 亞氏的方法論之影響：

我們在上文已提及古希臘的依利亞學派有否定運動之說，亞里斯多德則認為自然科學家（

物理學家)在研究自然現象時，要肯定自然現象是在變遷之中這個事實，並且認為這個事實是藉着歸納法而獲得的。在亞氏的方法論中，歸納法是演繹推論的前題，除了歸納法之外，他還提出演繹法、實驗、以及因果性等科學方法論中的重要概念，這其實是屬於非常偉大的創見。但是亞氏對歸納及演繹的概念並非沒有缺點。先就歸納法來說，他對歸納法的分析實在過於簡單，他在這方面的最大缺點有二：

1. 認為從個別命題可歸納得全稱命題。
2. 認為歸納得來的結論之真確性為自明的。

其實我們從歸納而得到的結論之真確性絕非自明，它們也不一定是全稱命題（而只有概然性）。此外，這些只具概然意義的命題只能視之為假設而已。

就演繹方面說，亞氏提出演繹推論的概念，但是「系統性」的概念在他有關演繹推論的思想中並不是很明確。他雖然建立了三段論邏輯，這無疑是亞氏有關演繹理論的典範，但是在「物理學」裡，他卻並未採用嚴格（量化）的演繹法，或公理系統法。他的「物理學」其實是相當雜亂，而方法上只能視作分析法而非歐幾里德以後的演繹意義。

儘管如此，亞氏對歸納及演繹的構想已經是科學發展上的偉大的創見。歸納法離不了實驗或觀測，亞氏也提到實驗觀測對建立科學知識的重要性。歸納法與假設的提出有關，故歸納與演繹乃理論層次，而理論和實驗的結合，就構成了科學方法的靈魂。亞氏有關演繹法的構想，等人應用歐幾里德實現出來，然後分別由阿基米德、托勒密、哥伯尼、伽里略、開普勒及牛頓不久就由於物理學上。故下節就討論歐氏幾何的方法結構。

§ 3.0 系統性的演繹法之建立及其在物理學上之應用：

§ 3.1 歐幾里德的「幾何學原理」之結構：

從方法論上看，歐幾里德的「幾何學原理」是一部理論系統的典範，全書共分為十三卷，第一至第十卷是討論平面幾何學，而第十一卷至第十三卷則以立體幾何學為主。除了卷八及卷九之外，其餘各卷在處理命題時，皆首先提出有關的定義，然後才進行論證。歐氏幾何的第一卷因為是全書的基礎，所以該卷所提出的概念及系統結構最具代表性（註②）。

歐氏的「幾何學原理」卷一乃公理系統的建構，它是由：

- (1) 定義。
- (2) 公設 (postulates)，（這相當於一般所謂的公理 (axioms)），
- (3) 推論規則（歐氏原書把這一項稱之為「一般概念 common notions」），
- (4) 定理（原書稱之為命題）。

這四部分構成。牛頓著名的「自然哲學的數學原理」一書，乃古典理論力學的偉大著作，而這本巨著所採用的理論方法，正是歐氏方法在理論力學上的應用。現在把歐氏系統的各主要部分說明如下：

§ 3.11 定義：共有 22 個，旨在說明或界定理論中的基本概念。例如：

- (A) 點是沒有部份者。
- (B) 線是沒有寬度的長度。
- (C) 線的末端是點。

(D)直線是由點在其自身均勻地延綿而成線。

(E)面是只有長及寬者。

(F)面的末端是線。

(G)平面是由直線在其自身均勻地分佈而成的面。

就上述的定義為例，定義項中所出現的概念並不一定很清楚，例如所謂「部份」、「長度」、「寬度」、「均勻地」等。如果再把這些概念再作界定，那就必然陷於無窮後退。但是，儘管在定義項裡出現一些不很清楚的概念，但是，這種利用定義法以處理問題的手續或程序已對建立嚴格理論的方法極有幫助。

§ 3.12 公設：共有五條，至於歐氏把這些公設視作真命題抑或視之為假設，或者只視之為推論的始點？對於這個問題，歐幾里德並沒有任何說明。這五條公設就是：

(A)從任意一點至另一任意點作一直線。

(此條一般譯作「二點之間可作一直線」)。

(B)從一直線可連續地延長一有限線段。

(此條一般譯作「一直線可任意地延長而仍保持為一直線」)。

(C)以任意點作圓心，及以任意長度為半徑作一圓。

(D)所有直角皆相等。

(E)若一直線與其他二直線相交，若在一邊所成的內角少於二直角，則該二直線在作任意延長時，將會在其少於二直角的一邊相交。

§ 3.13 推論規則：這是用作從公設或已證明的定理中而推演其他定理的規則，歐氏原意稱之為「一般的概念」(common notions)，一共有五條：

(A)等於同量的量相等。

(B)等量加等量，其和相等。

(C)等量減等量，相差相等。

(D)互相同等 (coincide) 的事物彼此間互相相等。

(E)全體大於部。

利用上述的公設及推論規則，便可從而演繹或論證其他有關的命題，這些命題可稱之為定理 (歐氏原文只稱之為命題)。「幾何原理」中的第一個命題是作圖題，原文是說「在一已知的有限直線上作一等邊三角形」，作圖的規則當然要遵守公設及定義。

康德在「自然科學的形上基礎」一書裡對「科學」這個概念曾經作了這樣的定義：

“Eine jene Lehre, wenn sie ein System, d.h. ein nach Principien geordnetes Ganze der Erkenntnis, sein soll, heisst Wissenschaft.” (註②)。

(任何一種學說，如果是能成爲一系統，即是說，如果它是根據原則而爲秩序化的知識之整體，就稱之爲科學。)

根據康德的這個有關科學的定義，則科學知識的特徵就在於它的系統性，故「科學」一詞乃指「系統性的知識」或「系統性的思考」而言，而系統性的組織是建立在某些原則之上的。在這個意義下，歐氏的「幾何原理」便在長久以來被視爲「科學」的典範，不僅是理性時代的思想家如笛卡爾、斯賓諾薩及萊布尼茲等人所標榜，其實這種系統性演繹法在物理學上一直爲物理學家所採用阿基米德、托勒密、哥伯尼、伽里略，直到牛頓的「自然哲學的數學原理」，

皆效法了歐幾里德的方法，而這種方法的構想，最早無疑是出於亞里斯多德，可見學術的發展和演進是互相關連的，而不是一蹴即至。

§ 3.2 理論方法在靜力學及流體力學上的應用：

把歐幾里德所建立的系統性方法應用在物理學上的是阿基米德，他約晚於歐幾里德半個世紀。阿基米德不但是個幾何學家，而且也可能是第一位使用嚴格方法從事理論物理學研究的人。阿氏的著作非常豐富，他無疑是人類數學史及物理學史上的最偉大人物之一，他的主要著作如下：

1. 論球面與圓柱體（二卷）。
2. 圓的量度（一卷）。
3. 論圓錐體與橢圓體。
4. 論螺旋體。
5. 拋物線的求積法。
6. 論浮體。
7. 關於力學問題的方法處理。
8. 論平面的均衡或平面的重心（註⑩）。

上列的後三書是物理學方面的著作，可是他的「關於力學問題的方法處理」一書在方法上卻與純粹幾何學沒有多大分別。我們現在特別感到興趣的，是他如何應用幾何學方法或公理系統法以處理物理學上的問題。他的「論浮體」一書可列入流體力學之作，而「論平面的均衡或平面的重心」則可視為靜力學方面的工作。現在，我們且以他有關靜力學之作，展示其中的方法問題。

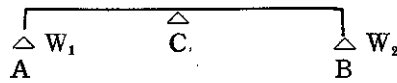
在上述「論平面的均衡或平面的重心」一書裡，阿氏在卷首便提出七條公設（註⑪），這些公設是：

1. 在等距離上的等重量是平衡的，同時，在不等距上的等重是不平衡，但會傾向於距離較大的那個重量。
2. 若在某距離上，各重量成平衡，並且在其中一重量上加上某物，則它們便失去平衡，但卻會傾向於加上某物的那個重量。
3. 同理，如果從其中的一個重量中除去一物，則各重量便失去平衡，但卻傾向於沒有從其中除去任何物體的一端之重量。
4. 若相等或相似的平面互為等同，若互為應用，則它們的重心會等同。
5. 在不相等，但卻相似的圖形中，其重心的位置相似。所謂相似圖形中的點有相似的位置，我是指這樣的點：如果從這些點作直線，並且構成等角，則它們的對應邊會構成等角。
6. 如果集量在其一距離上是平衡，與它們相等的其他量也會在同等距離上保持平衡。
7. 一個周邊向同一方向凹陷的任意圖形，其重心必在此圖形內。

阿基米德在列舉這七條公設之後，隨即便進行論證一些命題。例如：

例一：在等距上互相平衡的重量相等。

(圖三)



(A) 已知 $AC = BC$

W_1 及 W_2 為二重量，並且平衡。

(B) 求證 $W_1 = W_2$

證明：(1) 若 $W_1 \neq W_2$ ，則在 W_1 或 W_2 二重量中較重的一方取去其差量。

(2) 於是，根據公設(3)， W_1 及 W_2 便失去平衡，此乃不合理的。

(3) 所以根據(1)及(2)， W_1 及 W_2 不能不相等。

q e d.

例二：在等距上的不等重不會平衡，但會傾向於較重的一方。

證明：(1) 從較重的一方取去兩者的差額。

(2) 剩餘者便根據公設①而互為平衡。

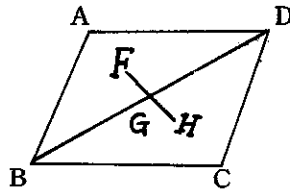
(3) 因此，如果我們再次把其差額之量放進去，則重量便失去平衡。

(4) 根據公設②，由於失去平衡而傾向較重的一方。

q e d.

例三：平行四邊形的重心位於二對角線的交點。

(圖四)



證明：(1) 設 $ABCD$ 為平行四邊形， BD 為對角線。

(2) $\triangle ABD \cong \triangle CDB$ 。

(3) 根據公設④，若把其中一套在另一三角形上，則它們的重心為重疊。

(4) 設 F 為 $\triangle ABD$ 的重心。

(5) 設 G 為 BD 的中點。

(6) 聯接 FG ，並延長至 H ，使 $FG = GH$ 。

(7) 若把 $\triangle ABD$ 套落在 $\triangle CDB$ ，使 AD 疊合 CB ，及 AB 疊合 CD ，則 F 便與 H 重疊。

(8) 但是，根據公設④， F 會落在 $\triangle CDB$ 的重心上，所以 H 是 $\triangle CDB$ 的重心。

(9) 因此，內於 F 及 H 分別為兩三角形的重心，故 \square 的重心便在 FH 的中點，亦即在 BD 的中點 G ， G 是二對角線的交點。

q e d.

例三雖然是有關平行四邊形的重心問題，這與靜力學有甚麼關係呢？我們可以把上述的平行四邊

形構想成一塊鐵板，又假設鐵板由許多質點構成，並且質點在鐵板裡作均勻的分佈，則G便是該鐵板的重心。在處理例三的問題時，我們不但採用了阿氏的公設，而且也應用了歐氏幾何。當我們說阿基米德推廣了歐氏幾何學的方法時，我們的意思不但指阿氏採取了歐幾里德的公理系統法應用在力學上，而且也把歐氏幾何應用在力學上。

§ 3.3 演繹法的進一步推廣：

§ 3.31 托勒密的Almagest：

托勒密（Ptolemy）約生於亞里斯多德死後四百年，他採用數學方法處理天文物理學的問題，這見於他的大著“*The Almagest*”一書，在這本書的序言裡，他論到方法上的問題。首先他同意亞里斯多德把理論知識分為物理的（物理的），數學的及神學的三類。他說：

「如果一個人以簡單性尋找宇宙運動的第一因，他就會發現上帝乃非感官的及不變的，而尋找有關祂的知識就是神學。這種最終的運動原則只能從宇宙的最終處存想，並且是絕對地遠離感性事物。至於從物質處以及它的運動性質，並且涉及白色、熱、甜、軟等事情，這種學科稱為物理的。像這類事物，由於不屬於一般性的，只能在地球上的可變之物中尋找。另一種知識是探討形式、方位的運動、探求圖形、數、量以、位置、時間及其他類似的事情，這種知識可界定之為數學的。數學的知識乃界於上述的二種知識之間。……」（註⑳）。

數學（幾何學）所處理的對象（如幾何圖形）是不可變的。在方法上，托勒密認為數學具有高度的嚴格性。關於神學、物理學及數學三者和方法上的差異問題，托勒密說：

「同時，當我們存想理論知識中的其他兩類問題時，我們的解釋常常只屬於猜測，而不是採用科學理解的語言，因為神學的對象乃非現象界的，我們沒有方法可達到，而物性（物性）問題乃物質的，因而不是不穩定的及不清楚的，正因為由於這些理由，所以哲學家們對這些問題時皆從來不希望會有任何一致的意見。但是，在思考數學問題時，若有法度地進行，藉着無可爭議的步驟之算術及幾何學之結果，使到研究者憑着論證而得到確定及可靠的知識」（註㉑）。

托勒密所信賴的數學方法，就是我們現在所謂的演繹法。在托氏的思想中有關數學的嚴格性無疑是源自歐幾里德在幾何學上所表現的方法系統，因此，托氏的巨著“*Almagest*”一書原來稱為「數學論著」（*mathematical composition*），這本書傳到阿拉伯人手中，才改稱為Almagest，這個字由“al”及“megistos”二部分構，前者是阿拉伯語的字首，後者則為希臘文“Μέγιστος”的拉丁化，皆指「偉大」的意思，而「偉大」又指「偉大天文學家」之意。在“*The Almagest*”一書卷一裡，托氏首先提出從觀測而得到的一些基本原則，例如「行星是沿球面軌道運行」、「地球的整體是球面的」、「地球乃天體的中心」、「行星運動有二種基本的形式」等，這些原則其實只是屬於「假設」，以後的理論工作主要便是藉着這些假設而採取幾何學的論證方法進行推論了。托勒密在論到Almagest一書的「定理次第」時說：

「所以，我們這本書的工作是始於探討地球整體與整個天體之間的一般關係。其次，就是處一些個別事情：首先說明黃道的位置以及人類所居位的地球之位置，然後有次序地根據上述情形的傾斜度而分析它們之間的關係，因為有關這方面的理論一旦建立起來，其他情

形也就得到解決。接下來的是說明太陽與月亮的運動及其有關的事件，因為若不事先認識這方面的事情，我們無法有效地論及星體。在這本書計劃中的最後部分是論及星體，先處理恒星，這是與球面有關的，然後，我們將會以這些事件作為始點，並且用作我們希望要進一步去發現的事件之基礎（foundations），這些始點及基礎都是由古人及我們從觀測現象中，而獲得的證據。同時，我們藉幾何學的論證而應用這些概念的結果，因此，在一般性方面，我們必須指出天體星球為球面的，而其運動也是球軌道的。地球在圖形上說，其整體是可感覺到的球面，它的位置就正好處於天球的中心，就像幾何意義的中心一樣。在它的矢長距離方面是與球面上的恒星保持一定的比例，而地球本身是固定不動的，而我們將對這樣的每一點加以簡單的考慮（註⑳）。

在這段引文的末段，托勒密列舉了他的一些構想（假設），進而從這些假設出發，利用幾何學的論證方法推論其他命題，這正好就像歐氏幾何的方法一樣，把一些命題作為推論的起點而推論其他新的命題。幾何學在天文學上的應用是無可置疑的，例如，從假想行星是沿圓形軌道運動，那麼，有關圓的幾何原理便可採用。托勒密及哥伯尼的演繹法莫不如此，例如哥伯尼在「天體運行論」卷一第十二章便展示「圓中的直線」各種定理，其中的定理四就說：「若一弦所對向的弧為已知，則對向着該弧一半的弦亦為已知」（註㉑）。

§ 3.32 牛頓的「自然哲學的數學原理」：

歐幾里德所建立起來的系統性演繹法，也為牛頓所做效。他的名著「自然哲學的數學原理」所表現的系統結構，綜合了前人許多概念而建立起龐大的力學體系，在方法上成為理論物理學的典範。他的「原理」分為三卷，前二卷討論物體的運動，卷三則討論天體運動，名之為「世界的系統」（the system of the world）。較清楚地說，卷一是論質點及不受阻力影響的物體運動。牛頓在這裡首先提出一種方法，以求取無限小量的比值，他說：「最先及最後的量之比的方法，藉著這種方法，我們可論證下列的命題」（註㉒）。牛頓在這裡所提出的方法，實在是數學分析的初步，接著他就利用這種方法及幾何學原理，有系統地分析各種運動、運動的軌道以及有關向心力及引力之作用，最後並且一個質點經過兩種媒體的空間，媒體吸引質點的情形，從而討論了光的反射及折射的原理，對光學提供了理論基礎（註㉓）。卷二主要討論物體在有阻力的媒體中運動的情形，其中還涉及彈性流體動力學（流體對運動物體之阻力）及黏性流體問題。牛頓對黏性流體的分析而批評笛卡爾的觀點，按照笛氏的世界圖像，空間是充滿着以太的，而以太為一種流體，並且作旋渦式的運動，從而帶動了行星環繞太陽而作圓形的軌道運行（註㉔）。牛頓針對笛氏的構想，指出普開勒的行星運動定律無法用以太旋渦加以說明，他以重力（着有引力）這個概念代替笛卡爾的以太旋渦說，作為行星運動及地球上自由落體的共同原因。牛頓的「自然哲學的數學原理」卷三是有關天文物理學之作，他首先討論萬有引力問題（命題 VI 至命題 IX）（註㉕），並假定一個固定的宇宙中心（註㉖），牛頓使用萬有引力的原理，計算在地球不同部份的物體之重量（命題 XX），從月球的運動推論木星及土星的衛星之不等速運動（命題 XXII），說明了故應用開普勒第三定律於木星時何故會產生誤差（命題 XVII、XVIII、XIX），計算太陽影響月球運動的力（XXV），分析月球的不均等性、解釋潮汐現象（命題 XXXVI—XXXVII）及彗星（Lemma IV—命題 XLII）等等。總之，牛頓把上至天體，下至潮汐，甚至光的運動皆作了系統性的處理，實在是科學史上罕見的龐大而有系統的理論，這麼一個龐大的理論系統，在方法結構上完全效法歐氏的「幾何學原理」

，分別由①定義，②公理，③推論規則（在牛頓系統中主要則為幾何原理，流數原理，力的矢量原理等），④定理這四部份組合而成。在卷三處理天文學問題時，牛頓又提出另外三種概念或原則，這就是⑤在哲學中的推論規則，共有四條，⑥現象，共有六條，⑦此外，他還提出二條假設（hypothesis）（註④）。現在，我們就進一步分他的定義法，哲學中的推論規則，及矢量原理。

§ 3.321 定義：

(A) 物質之量（質量）：用以量度物體，乃其體積與密度之乘積。

用密度概念界定質量，這個定義是值得非議的，因為「密度」通常又藉「質量」而加以界定的。按照牛頓的定義，則 $m = DV$ 。

(B) 運動之量（the quantity of motion）：

用以量度運動，是由速度及質量之乘積。

即： $p = mv$

(C) 慣性或物質的內力：這是一種抵抗力，物體藉着這此抵抗力而繼續地保持其現狀，無論這種現狀是靜止或是沿直線作等速度前進。

慣性的概念最先可能出於伽里略的銳觀測，牛頓把慣性視為「物質的內力」（innate force of matter），又稱為「抵抗力」（a power of resisting）及「靜止力」（force of inactivity）。他把慣性力分為兩類，即抵力與衝力。前者表現於當物體受到外力作用時，慣性就是反抗這種作用力而使物體保持原來之狀態，後者表現於某物體在改變另一物體的狀態時。抵力與衝力其實只從不同的角度分析物體而已，抵力一般是從物體為靜止的層面說，而衝力（impules）則從運動中的物體方面說（註④）。

(D) 作用力：這是指作用在一物體上的行為（作用 action），目的在於改變物體的靜止或等速直線運動的狀態。

根據這個定義，則作用力只存在於作用本身，離開了這種作用，它就不存在。

(E) 向心力：藉之而逼使（拉、驅迫或以任何方式）物體朝向作為圓心的點。

(F) 向心力的絕對量：這是用以量度向心力的，它是與從中心穿過附近空間而發射出去的原因（cause）之效能成比例。

例如磁力的大小與磁鐵的大小及強度成正比。

(G) 向心力的加速量：這是用以量度向心力的，在已知時間內與其速度成比例。

例如同一磁棒之力與其作用之距離成反比例，即距離愈小，作用力愈大；距離愈大，作用力便愈小。

(H) 向心力的發動量（motive quantity）：這是用來量度向心力的，它是在已知時間內的運動成比例。這是牛頓對重量的定義。愈接近地球的同物體，其重量愈大，而愈離開地球，其重量就愈減少。

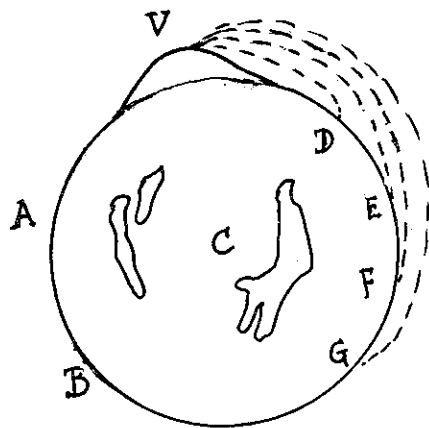
我們在這裡引述牛頓的定義，目的在於進一步分析他的定義方法，這是個重要的問題，毫無疑問，如果質量、動量、慣性、作用力、向心力等概念是與現實世界無關，那麼，牛頓的理論（或系統）便會與數學的形式（formal 是相對於實質而言，實質乃指經驗內含）系統沒有差別。牛頓在談到他對上述最後的三個向心力的概念時，強調他對這些力的定義是數學的，而

不是物理學的，這個觀點是需要作分析，否則一個數學理論（如本文所展示的歐氏幾何）與物理學理論之間的差別並不明顯。牛頓說：

「我並且把吸力及衝力在同樣的意義下稱之為加速的及發動的（motive）。……不是把力作物理（物性）地考慮，而是數學地（mathematically）：這就是為甚麼讀者不要把我所用的字想像成為定義類別，或是原因或物理理由之任何作用形式，或者把我所歸屬於某些中心的力視作真實的及物理的意義（這些中心只是數學點），……」（註④）。

牛頓無疑是把他對力的定義視為數學的定義，這在嚴格的意義下說是不對的，物理學上的概念與數學上的概念有一個很顯著的差別。現在的科學哲學告訴我們，物理學的基本概念（基本概念相對於導出概念）是必須藉「運作定義法」加以界定的，而數學的概念則無此必要。牛頓把質點視作數學點，因而把質點視為數學概念，這在嚴格意義下也是不正確的。例如說，在數學上，點是指沒有部分者（根據歐幾里德的定義），因而是不能觀測的。在物理學裡，質點是一個借用概念，目的是為了處理問題的方便性。就以質點具有質量這個意義說，則質點明顯地是與沒有質量的數學點不同。更何況，當我們把人造衛星或在遙遠太空中的行星視作質點時，這些質點在原則上是可觀測的，它們除了具有質量之外，尚且有速度等性質，而用以描述質點的質量、速度（時間、距離）等概念在原則上又可藉運作定義法加以界定的，數學點則不具備這些條件。事實上，上述八個概念基本上可用運作定義法界定它們的，最低限度，構成這些概念的基本概念是可藉這種方法定義，這樣就使到這些概念具有實際意義（具有 real reference）。又例如定義(II)的所謂向心力，這有二種情形，其一就是牛頓的萬有引力，其二是磁力。就以萬有引力來說，它絕對不是一個形式概念，而可具有實際的經驗內含。牛頓在他的「世界的系統」一長文中（註④），就分析了向心力的實際意義。在這裡，牛頓指出從拋物體的運動情形就可以理會到向心力的作用。一塊石頭被拋出去以後，如果只有拋射作用，那麼它便會繼續沿直線運行。可是，石塊卻由於它本身的重量而不得不偏離直線的運動軌道，變成沿曲線進行而最後落在地面上。若拋射的初速度愈大，則石塊所經的途徑就愈遠。所以，隨着初速度的增加，石塊在着地前所經過的弧將分別是 1, 2, 5, 10, 100, 1000 哩。若它越出地球的限域，就會在進入太空而不會再接觸地球了。牛頓用右圖說明這個問題：

以 AFB 代表地球表面，C 為地球中心點，VD, VE, VF 表示從山峯 V 分別以遞增的速度以與地面平行的方向拋擲一物體而產生的不同曲線，由於天空對物體的阻力極少，或根本沒有，故天體運動就可保持不變。在地面上，當拋物體以較小的速度拋出時，它的途徑便是 VD，若以較大的初速度拋出，則它所形成 VE 弧，如此類推。最後，若繼續以更高的速度拋出，則它便繞地球飛旋而返回山峰（註⑤）。從以上的說明，可見



(圖五)

牛頓的八個定義與歐氏的幾何定義有極大的分別，前者是描述的（descriptive）或是運作的（operational，或說可運作的），但後者則既非描述性也，也不必藉着運作定義法把概念加以界定。

§ 3.322 牛頓論力學的哲學基礎：

牛頓的大著名之為「自然哲學的數學原理」，「自然哲學」一名現在已經不流行了，從現代的觀點看，雖然有了學科的分工，但是，他那一套，無論從方法上看或從內容上看，皆為理論物理學的典範。然而，牛頓自己的觀點卻是這樣：

「在前二書（按：此指「自然哲學的數學原理」卷一及卷二），我已經建立起哲學原理了，但是，說實了，這些原理皆不是哲學的，而是數學的，這是說，我們可以把我們的推理建立在哲學研究上。這些原理（原則 principles）就是某些運動的規律、條件以及力，而它們又與哲學有重要關係，但為了使它們不變成乾燥無味，所以我在各章都藉着哲學的評註，把這些定律及條件加以解釋，從更一般性方面說明這些事物，而哲學看來就是建立在它們之上」（註⁴⁸）。

知識論是現代哲學中的一門，而無論是從康德的知識論意義（康德的問題主要在於建立知識的先驗條件及超驗條件），笛卡爾的知識論意義（笛卡的主要問題在於知識的確實性，problem of certainty），或是二十世紀的科學哲學看，牛頓的「自然哲學的數學原理」中皆含有極豐富的知識論成份。例如，在卷三的開端，牛頓列舉了四條規則，他稱之為「在哲學上的推理規則（Rules of Reasoning in philosophy），這些規則都是名符其實的力學（古典力學）之哲學基礎。現在我們就把這些規則加以展示和說明。

(A) [規則一]：

除了那些真實（true）及充分原因以解釋自然現象之外，我們不容許其他別的原因。

(B) [規則二]：

因此，在可能的範圍之內，同樣的自然結果有同樣的原因。

(C) [規則三]：

凡是不容許作任何程度的增減之物性（qualities of bodies），並且在經驗（實驗）領域內皆可在所有物體中發現，均可視之為一切物體的普遍性質。

(D) [規則四]：

在實驗哲學（experimental philosophy）裡，我們把從現象中藉一般的歸納法而推衍得來的命題視作準確或極接近於真確（true），而不必理會它們會與一些想像中的假設對立，直至其他現象出現，藉着這些現象而使上述命題更精確或成為例外。

以上四個規則，皆可列入現代的知識論問題，第一個規則可稱之為「思維的經濟性原則」（the principle of the economy of thinking）。這個原則是說，如果我們採用 n 個條件就能夠解釋某些自然現象時，那麼，我們就沒有必要，也沒有理由去設定 $n + 1$ ，或更多的條件以解釋該現象。牛頓卻不把規則一視作思維的經濟原則，而視之為自然界本身的特性。換言之，他不從認知主體（cognitive subject）方面考慮這原則，而把之視為認知對象（the object known）本身的特性。前者是從主體性方面看，後者則從客體性方面看。所以，他認為「自然界不做徒勞無功的事」（that nature does nothing in vain），以及「自然界喜歡簡單性」。從認知對象方面詮釋規則一是很困難的，因為這樣做便只成為一種對自然的猜度（

conjecture) 而已。但是，如果我們把之視作思維的經濟性原則，那麼問題就簡單得多，因為這不是一種猜度，而可把之視為方法上的簡單性。

規則二是因果關係的一種陳述方式，這是說：「同樣的原因會產生同樣的結果」，但是，這種陳述方式是不嚴謹的，因為世界上可能沒有兩滴相同的水（萊布尼茲語），故所謂「同樣的原因」或「同樣的結果」可能根本就不存在。儘管如此，牛頓所列的規則二是指通常哲學上所謂因果性（causality）或因果關係（causal relation）則無疑。問題是：因果關係的有效性如何建立起來呢？我們在上文已經指出：因果性問題已由亞里斯多德提出，作為經驗事象的最基本之規律性。但是，自從英國哲學家提出對因果律的客觀必然性提出懷疑之後，哲學界或視之為設準（postulate），或視之為主體性的思維方式。總之，因果律不但是知識論問題，而且還缺乏一致的結論。但是，我們卻不知道究竟牛頓把因果律視之為理論基礎的假設條件，抑或視之為客觀必然的定律，而如果是定律，那麼是屬於思維的法則，還是屬於自然界本身的規律？

規則三是有關物性（物理性）問題，這也是知識論中有關經驗知識的基礎問題。講到物性，當然是指物體本身所具有的性質。然而，物體具有那些性質呢？顏色、熱、冷、甜等是物體原有的性質嗎？希羅時代的斯多亞學派的哲學家們已懂得把物性分為原性和次性，後來英國哲學家洛克（J. Locke）也作了這種劃分，認為原性（primary qualities）才是物體的本有性質（註④7）。現在，牛頓認為，屬於物體的普遍性有廣延性（extension）、硬度、不可入性、可運動性、慣性、萬有引力等。他把上述性質列為物體的普遍性，是從經驗（或實驗）作為根據而分析出這些物性的，所以，他說：「由於物體的性質只能藉着實驗才能被我們所認識，因此，我們只認定那些與實驗普遍一致的物性為普遍的物性」（註④8）。但是，以實驗或觀測作為分析有關物體的普遍性之根據並非是最落實的方法，譬如，當我們進一步討論到廣延是否可無限分割時，就會遇到困難，因為無限分割非藉有限的運作可以經驗地加以證明的。

規則四是關於歸納法問題。牛頓認為，由歸納法所推衍出來的命題的準確度極高。歸納而得的命題可不必理會想像中與之矛盾的可能性，重要只是當更多事實出現之後，才修正上述的歸納命題。牛頓沒有分別歸納語句的種類，我們最低限度可以把歸納語句按照不同的歸納方式分為兩類，其一是枚舉法，即列出各個別命題，從而推衍或抽象出一較具普遍意義的命題。另一種可名知為直覺歸納法，即從一些有限的事象中，藉著個人的想像和理解而建立起一些命題。後一種情形具有高度的猜度成份，因而有些哲學家（如 Karl Popper）就不視之為歸納法，而直視為猜度（conjecture），事實上，後者在自然科學中常常飾演重要的理論角色。但是，我們不知道牛頓所謂歸納法究竟指何者而言？他認為歸納法具高度的真確性，這是有待商榷的。

綜觀牛頓所謂「在哲學上的推理規則」，由於他對這四條規則的論證極不充分，我們可視之為科學的後設理論中的四條知識論的設準。作為自然科學家的牛頓，在處理力學問題時，能夠進一步顧及一些更深入的基礎問題，這無疑提昇了理論的嚴謹性。

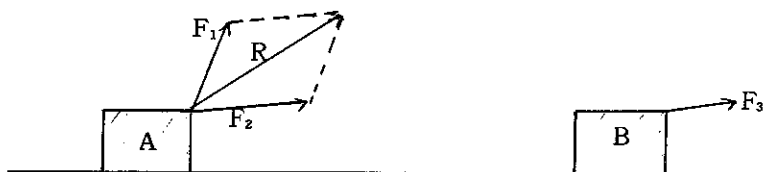
§ 3.323 關於力的計算之基本原理：

一個喜歡嚴格思考的物理系學生，當他想到物理學如何能成為一門嚴格的自然科學時，他就不難認識到使物理學成為嚴格的自然科學的主要條件之一就在於數學的應用。然而，數學何故能應用於經驗（物理）世界呢？要回答這個問題，就牽涉到數學的本質及數學與經驗世界之間的關

係了，然而這二個問題卻不是數學家心目中的數學問題，而是哲學家眼中的「數學之哲學」問題。歐幾里德的幾何系統中有一套推論規則，那是用作從公設中推論出定理時所採用的推論或演繹規則。在古典力學裡，這些演繹規則就是數學，這包括幾何學、數學分析、矢量代數等。在這裡，我們只扣緊矢量代數如何能應用於處理力的問題上，這個問題的基本原理已由牛頓提出。

首先，我們要認識到力是個矢量概念而非一般的純量，矢量是具有方向性的量。然而，何故說力是個矢量呢？這是個經驗問題（因為力乃一種經驗事實），所以，我們一定要藉著實驗才能加以解答。

（圖六）



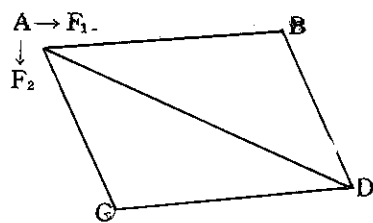
如圖六，設 A B 為二個質量相等的物體，現在分別用兩個彈簧測力器以不同方向同時拉動一物體，在測力器中，我們可讀出此二拉力分別為 F_1 及 F_2 ，此外，我們又一測力器對物體 B 施力 F_3 ，而所施的力 F_3 為 F_1 及 F_2 的代數和，然後，我們再測量 B 在這種情形的加速度。我們發現，物體在這種情況下的加速度不等於 A 物體的加速 a ，可見 F_3 不等於 F_1 及 F_2 的代數和。此外，我們又以一測力器拉動 A，並且使其加速度為 a ，在測力器中我們讀出它的力為 R ，其方向假設如圖六所示。在這種情形下，我們便謂 R 是 F_1 及 F_2 的合力。經過分析的結果，我們發現 R 乃可用 F_1 及 F_2 作為二鄰邊而構成的平行四邊形的對角綫。這個實驗結果顯示出兩點情形：

- (1) 力乃一矢量，我們用 \vec{F} 表示之。
- (2) 二力 \vec{F}_1 及 \vec{F}_2 的合力 \vec{R} （或 $\Sigma \vec{F}$ ）可用平行四邊形的對角綫表示之，此平行四邊形的二隣邊為 \vec{F}_1 及 \vec{F}_2 。

關於上述的合力之平行四邊形定律，牛頓已清楚地認識到（註④）。可是，牛頓對於二力的合力原理，也就是對於平行四邊形定律，並未從實驗程序去建立，而從理論上作分析而成：

（圖七）

設在 A 點施力 F_1 於某物體上，使它由 A 點以等速向 B 點運動，而且又同時在 A 點施力 F_2 於該物體，使其向由 A 點向 C 點運動，其結果是物體將隨 A 點往 D 點移動。理由是：由於 F_2 作用於 A C 的方向，根據第二定律（牛頓運動第二定律：運動的變化與作用力成正比），則 F_2 的作用力不會影響 F_1 對物體朝 A B 的運動的速度。這樣，物體在該時區的終點時，必在 B D 綫上，同樣，在同一時間內，物體可在 C D 綫上。綜合上述結果，則物體只會到達 D 點，換言之，物體是從 A 點隨直綫 A D 到達 D 點（根據第一定律）（註⑤）。以上是牛頓對平行四邊形定律的證明，但是，這個論證並非很清晰，由於這個定律是涉及實際的力與運動之間的關係，故這個定律的有



效性必須要藉實驗加以證明，但牛頓在原書中卻沒有提及其實驗根據。

總的來說：平行四邊形定律是分析力的合成及分解力的基本原理，這個原理可由實驗結果而知其為確實無誤。這個原理更清楚地說是這樣的（註⑤）：

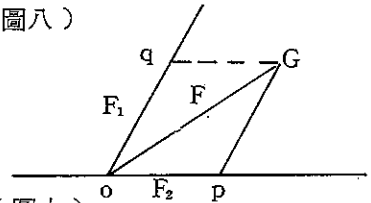
經過一點A，以同一比例R作二矢量代表二共點力，以此二矢量為鄰邊而作平行四邊形，則過A點而成的該平行四邊形的對角線，即代表此二點力的合力。

只要把這個辦法加以引伸，便可求出多個力的合力，例如，有三個共點力，則先用上述方法求其中任意二力之合力，再以此二力之合力及第三個力的矢量作為平行四邊形的二隣邊作另一平行四邊形，其與A點所成的對角線即此三力的合力。

除了求合力的方法之外，牛頓也提出分解一力的方法。（註⑥）

把一個力分為二力，目的是為了計算各力的合力，因為若能將不同的力分解於作標軸上，使向量變成純量，就可用代數法計算合力，設一已力知 \vec{F} ，利用平行四邊形原理可把之 \vec{F} 分解為 \vec{F}_1 及 \vec{F}_2 ，如圖八：

（圖八）



Oq 及 OP 可視為 F 的分量，為了計算方便，我們可把圖八變成一個直角坐標如圖九。

在圖九中，Ox 與 Oy 為直角坐標軸，從向量 F 的頂點 G 作虛線 GH 及 GK 分別垂直於 Oy 及 Ox 軸上，這樣 OH (F_y) 及 OK (F_x) 稱為 F 的直角分量。設 θ 為 F 與 X 軸的交角，則得：

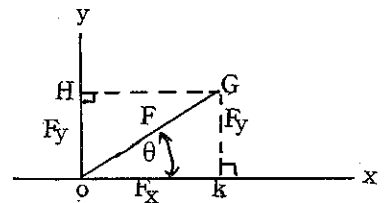
$$F_x = \vec{F} \cos \theta$$

$$F_y = \vec{F} \sin \theta$$

$$\tan \theta = \frac{\sum F_y}{\sum F_x} \quad (\text{方向})$$

\vec{R} (或 $\sum \vec{F}$) = $\sqrt{\sum F_x^2 + \sum F_y^2}$ (合力)
使用上述的基本原理，我們便可處理各種力系。

（圖九）



§ 4.0 運動學的系统性建構：

運動學是古典力學的一部分，伽里略在他的「兩種新科學的對話」（Dialogue of the two New Sciences）的第三及第四部分（第三天及第四天的對話）中作了系統性的處理。在第三部分裡，他處理了等速及加速度運動，在第四部分裡又處理了拋物體的運動情形。以下我們先列舉伽里略的方法進路，說明其方法論的意義，然後，我們再試圖從現代公理系統的方法上重建運動學。

§ 4.1 伽里略的方法結構：

§ 4.1.1 等速運動：

(A) [定義]：對於等速運動的意義，伽里略說：

「所謂固定的或等速運動，就是說運動質點（moving particle）在等時區內所移動的距離相等」（註③）。

(B) 公理：伽里略認為以下四條公理乃根據上述定義而來：

〔公理一〕：在同一的等速運動中，較長時區內所經過的距離大於較短時區內所經過的距離。

〔公理二〕：在同一的等速運動中，經過較長距離所需的時間是大於其經過較短距離所需的時間。

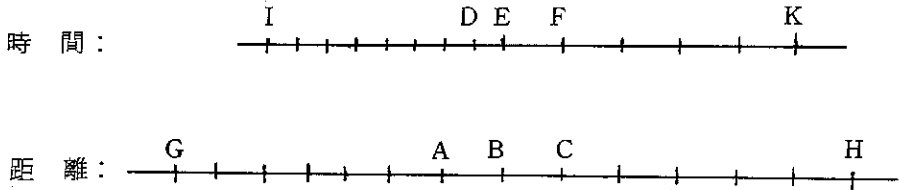
〔公理三〕：在同一的時區內，較大的速度所經過的距離比較小的速度為大。

〔公理四〕：在同樣時區內，經過較長距離所需的時間大於經過較短的距離所需要的時間。

(C)定理：(舉例)

〔定理一〕：若一在運動中的質點，以均勻的等速經過二段距離，則其所需的時間與距離成正比。

(圖十)



證明：(1)設一質點以均勻的等速經過AB，BC二距離，又設經過AB的距離所需的時間用DE表示之，經過BC的距離則以EF表示之。這樣，我們就可以說當時間由DE而至EF時，其距離也就從AB而達至BC。

(2)設把距離和時間分別向兩端延長而至G、H及I、K。

設AG可分割為等於AB的若干部份，而DI也同樣可分割為與DE相等的部份。

(3)由於DE是AB所需的時間，故EI便是整段BG距離所需的時間。若運動是等速的，那麼EI中相等於DE的區間之數量便與BG距離中與BA等距之數量相同。EK及HB的情形也是一樣。

(4)由於運動為等速，所以如果距離GB等於BH，那麼，IE的時區便等於EK。同時，如果GB大於BH，則IE也就大於EK。反之，若是較少，便同理類推。這裡有四個量，就是AB、BC、DE及EF。時區IE及距離GB分別是與AB及DE之乘積。

(5)這樣AB與BC的比例等於DE與EF之比，因而AB（距離）與DE（時間）之比等於BC（距離）與EF（時間）之比。 q e d。

〔定理二〕：若一運動的質點以相等時間經過二段距離，則其距離之比等於其速度之比。反之，若其距離之比等於其速度之比，則其所需之時間相等。

證明：(1)如（圖十）。設AB及BC表示在同等時間內所經過的距離，若經過AB的速度為DE，而經過BC的速度為EF，則距離AB與BC之比等於速度DE與EF之比。

(2)若距離及速度為等倍，即AB與GB及IE與DE為等倍，同理而HB與BC及

KE 與 EF 爲等倍，那麼 GB 及 IE 的倍數或少於，或等於，或大於 BH 及 EK 的倍數，於是上述定理獲證（註⑤4）。 q e d.

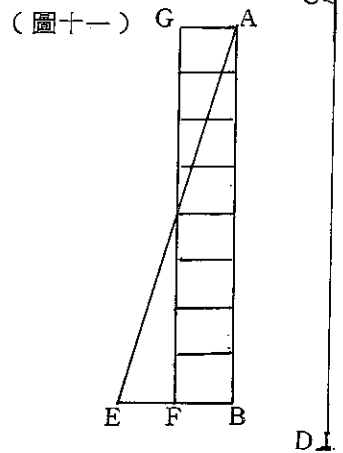
§ 4.12 等加速度：

(A) 定義：若一運動從開始至靜止，其動量在相等時間會有同等的增加者稱爲等加速度（註⑤5）。

(B) 定理（舉例）：

〔定理一〕：一個從靜止而開始以等加速度運動的物體，在經過任一空間所需要的時間等於它以等速度運動而經過同一空間所需的時間，這個等速度的值乃最高速度與加速前的速度之平均值。

證明：



(1) 如（圖十一）。

設以直線 AB 表示一個從靜止於 C 點而以等加速度運動的物體所經過的距離 CD 所需的時間。

(2) 設與 AB 成直角的直線 EB 代表在 AB 時間中所得到的最高和最後的速度之值。

(3) 作 AE 綫，於是從 AB 上的等距點所作的平行於 BE 的所有的綫代表從瞬間 A 而遞增的速度之值。

(4) 設 F 點平分 EB 綫，作 FG 與 BA 平行，及 GA

與 FB 平行，這樣便構成一個平行四邊形 AGFB，其面積與三角形 AEB 相等，因爲 GF 在 I 點平分 AE。

(5) 因爲若三角形 AEB 的平行綫延長至 GI，則該四邊形中所有的平行綫之和等於三角形 AEB 裡所有的平行綫之和。由於三角形 IEF 中的平行綫等於在三角形 GIA 裡的平行綫，同時，在梯形 AIFB 中的平行綫都是公共的。

(6) 於在 AB 的時間內在一瞬間在 AB 綫上皆有其對應的點，從這些點所作的平行綫皆在於受到三角形 AEB 所限制，這些平行綫表示在遞增中的速度之增加值。又由於長方形內的平行綫代表不增加，而是恒常的速度之值，於是在同樣的方式下，一假定的運動物體之加速運動的動量，可用三角形 AEB 中的遞增之平行綫來表示。同時，在等速運動的情形下，可用長方形 GB 的平行綫來表示，因爲，在加速運動的第一部分中所缺少的動量（所缺的動量用三角形 AGI 中的平行綫來表示），這可藉著三角形 IEF 的平行綫所表示的動量來補足。

(7) 所以，這就清楚表明了兩個物體在相等的時間裡所經過的距離相等，其中的一個是從靜止開始而以等加速度運動，另一則以等速運動，其動量是它在加速度運動的情形下而有的最高動量之半（註⑤6）。 q e d.

從上列的例子可以看出，伽里略在處理運動的問題時是採取幾何法，這是從歐幾里德所建立，而分別由托勒密、阿基米德、哥伯尼等所採用。這種方法的重要性在於它的系統性及演繹方法。以下，我們將進一步用代數語言並以公理系統法重建質點運動學（註⑤7）。

§ 4.20 質點運動學的系统重建：

§ 4.21 概念的說明：

(1)質點：「點」原是指數學點或幾何點，根據歐幾里德的定義，點是指「沒有部分者」而言（見本文 §1.21 的定義(A)），質點是說這是一物體點而非數學點，因為這些點具有質量，質量是物理的而非數學的，故稱之為質點。然而，這裡所謂物理點中的點又是甚麼意思呢？如果點的意義藉著歐氏的定義而加以說明，那麼，沒有部分的點又怎麼會有質量呢？這顯然在觀念上不很清楚。不過，物理學家採用「質點」這個概念，目的是為了使到所要處理的對象簡單化，因為先把對象視作質點，那麼就可以把物體與物體之間互相影響而引起的內部反應略去，這樣就對於物體在運動時所產生的內部變化不必加以理會，總之把對象視作質點，乃從處理問題的方便性或簡單性方面考慮的。所以，「質點」其實可視之為一個虛概念。

(2)時間和距離：

對於質點運動的描述，是離不了對空間（距離）及時間的測量，而測量就需要儀器，這些儀器分別是距離的量度標準及時鐘，在1960年以前，測量長度的標準為剛體，可是剛體其實是一個理想化的實物，這是說，剛體是指在任何情形下，物體之形狀大小皆保持不變的物體而言，換言之，剛體是指凡在任意二質點（在物體內）之距離永遠保持不變的物體而言（註⑤）。

從上述可以表明物理學的定義，基本上是採用運作定義法（operational definition），這是說，一個概念的定義要藉著實驗運動才能確定，例如要說明時間，只能從量度方面入手，其他如距離、溫度等皆然。我們甚至可以這樣說，凡不能採用運作定義法以說明其實際意義的概念及這些概念所指的對象皆要在自然科學中除去。

(3)參考系統與坐標：

對物體運動的觀測，總要相對於某一對象，這些用以作為觀測或描述物體運動所依據的對象，就稱之為參考系統。利用不同的參考系統來觀測物體的運動，其觀測的結果是不同的，在這個意義下，觀測物體的運動情形是個相等的事件，我們也可以說，運動是個相對的概念。運動學中選擇參考系統是任意的（在動力學中，則有慣性參考系統與非慣性參考系統之分）。參考系統可藉坐標表示出來。換言之，坐標系統是用以把質點在有關時間中的位置定量表示出來的圖表。

§ 4.22 系統的重建：

在一般的力學書籍裡，對運動學的敘述是零散的，也就是缺乏系統性。從方法論的意義上，我們在本文重視方法上的結構，所以我們現在試用公理系統法重新把質點運動學加以系統性的建構。公理系統（依歐氏幾何）可包括下列各項：

- (A)定義：說或成界定系統中的基本概念。
- (B)公理：一些用作為演算或推論始點的命題，這些命題通常視作真命題。
- (C)推論規則：用作從公理中演繹出其他命題所需要的演算或推論之規則或工具。
- (D)定理：指利用推論規則而從公理中推演出來的命題而言。

現在，我們便按照上述的系統模式，把質點運動學加以系統化。

§4.221 基本概念及定義（運作定義法）：

〔定義一〕：時間（ t ）：具備一個時鐘，以規定秒、分、小時的意義。

〔定義二〕：距離（ s ）：具備一剛體，界定長度的單位意義。

以上對時間及長度之定義方法稱為運作定義法，是自然科學理論的唯一合法（有效）方法。運動學中的其他概念可藉以上兩個基本概念而導出。

§4.222 直線運動：

(1)公理（原則）：

〔定義三〕：速度（ \vec{v} ）：質點在所經的時間中位移（空間向量 \vec{s} ）之變化。

(A)平均速度原則（ \vec{v} ）：質點在所經過的時間中其位移的一般變化，即：

$$\vec{v} = \vec{s}/t \quad \dots\dots\dots\text{公理①}$$

(B)瞬時速度原則：質點在一瞬間之速度。即：

$$\vec{v} = \lim_{\Delta t \rightarrow 0} \frac{\Delta \vec{s}}{\Delta t} = \frac{d\vec{s}}{dt} \quad \dots\dots\dots\text{公理②}$$

其中 $\Delta \vec{s} = s_2 - s_1$ ； $\Delta t = t_2 - t_1$

〔定義四〕：加速度（ \vec{a} ）：若速度在變化之中，此變化稱為加速度，故加速度乃速度與所經時間之比。

(C)加速度原則：速度在所經之時間中的一般變化。

$$\vec{a} = \frac{\vec{v}_2 - \vec{v}_1}{t_2 - t_1} = \frac{\Delta \vec{v}}{\Delta t} \quad \dots\dots\dots\text{公理③}$$

(D)瞬時加速度原則：速度在瞬間之變化，即：

$$\vec{a} = \lim_{\Delta t \rightarrow 0} \frac{\Delta \vec{v}}{\Delta t} = \frac{d\vec{v}}{dt} \quad \dots\dots\dots\text{公理④}$$

(2)推論規則：算術、代數、微積分、歐氏幾何、矢量代數等。

(3)定理（舉例）：

(A)定理一： $\Delta \vec{s} = \vec{v} \cdot \Delta t$

證明：從公理①移項即得。 qed.

(B)定理二： $\vec{s}_1 = \vec{s}_0 + \int_{t_0}^{t_1} \vec{v} dt$

證明：1. $\vec{v} = \frac{d\vec{s}}{dt}$ （公理①）

2. $\therefore d\vec{s} = \vec{v}dt$ （從1.）

3. $\int_{s_0}^{s_1} d\vec{s} = \int_{t_0}^{t_1} \vec{v}dt$ （從2.積分）

$$4. \therefore \int_{s_0}^s d\vec{s} = \vec{s}_1 - \vec{s}_0 \quad (\int_{s_0}^s d\vec{s} \text{ 之意義})$$

$$5. \therefore \int_{t_0}^{t_1} \vec{v} dt = \vec{s}_1 - \vec{s}_0 \quad (\textcircled{3} = \textcircled{4})$$

$$6. \therefore \vec{s}_1 = \vec{s}_0 + \int_{t_0}^{t_1} \vec{v} dt \quad (\text{從5, 移項})。$$

qed

解釋： $\int_{t_0}^{t_1} \vec{v} dt$ 乃指質點在極短時區 dt 之位移，我們可以把 t ($= t_1 - t_0$)

分割成極短瞬間，即： $dt_1, dt_2, dt_3, \dots, dt_n$

它們所對應的位移便是：

$$\vec{v}_1 dt_1, \vec{v}_2 dt_2, \dots, \vec{v}_n dt_n$$

其和就是：

$$\vec{s}_1 - \vec{s}_0 = \vec{v}_1 dt_1 + \vec{v}_2 dt_2 + \dots + \vec{v}_n dt_n$$

$$= \int_{t_0}^{t_1} \vec{v} dt \quad (\text{註}\textcircled{6})$$

(C) 定理三： $\vec{s} = \vec{v}_0 t + \frac{1}{2} \vec{a} t^2$

證明：1. $\vec{a} = \frac{\vec{v}_1 - \vec{v}_0}{t}$ (公理③)

$$2. \vec{v}_1 = \vec{v}_0 + \vec{a} t \quad (\text{從}\textcircled{1})$$

$$3. \vec{v} = \frac{\vec{v}_0 + \vec{v}_1}{2} \quad (\text{平均速度})$$

$$4. \vec{v} = \frac{\vec{s}}{t} \quad (\text{平均速度})$$

$$5. \frac{\vec{v}_0 + \vec{v}_1}{2} = \frac{\vec{s}}{t} \quad (\textcircled{2} = \textcircled{4})$$

$$6. \vec{s} = \frac{\vec{v}_0 t + \vec{v}_1 t}{2} \quad (\text{從}\textcircled{5})$$

$$7. \vec{s} = \frac{(\vec{v}_0 t + (\vec{v}_0 + \vec{a} t) t)}{2} \quad (\text{用}\textcircled{2} \text{代入}\textcircled{5})$$

$$= \frac{2 \vec{v}_0 t + \vec{a} t^2}{2}$$

$$= \vec{v}_0 t + \frac{1}{2} \vec{a} t^2$$

qed

(D) 定理四：若物體的初速度為 0，即靜止，則 $\vec{s} = \frac{1}{2} \vec{a} t^2$ 。

證明：以 $v_0 = 0$ 代入定理③即得 qed。

說明：若把定理④中的加速度 \vec{a} 視作自由落體的常數 g ，則定理④便成為伽里略自由降體定律。從方法上看，這個例子說明一項極重要的問題，這個問題就是系統的根本意義。系統性與零散的觀念不同，前者的功能是利用公理推論出其他命題（定理），而不是東一點，西一點的。推論出來的命題可視為一項預測，是待驗證的（實驗證明）。

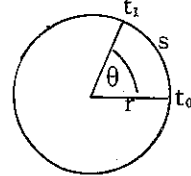
§ 4.223 理論系統的擴大：

我們在〔§ 4.222〕節採取了四個公理（原則）以處理質點的直線運動。現在，我們若要

把運動的概念推廣到圓周運動，那麼我們便需要引入角速度 (ω) 及圓心角 θ ，然後效倣直運動作出原則便可。

定義(-)：角速度：質點在作圓周運動時，其在周邊上移動而構成的弧所對的圓心角 θ 在所經的時間 t 之變化。

圖五：



定義(二)： $\vec{\theta} = \frac{\vec{s}}{r}$

e、公理

e-1、平均角速度 ($\vec{\omega}$) 原則

$$\vec{\omega} = \frac{\Delta \vec{\theta}}{\Delta t} \dots\dots\dots \text{公理⑤}$$

e-2、瞬時角速度原則：

$$\vec{\omega} = \lim_{\Delta t \rightarrow 0} \frac{\Delta \vec{\theta}}{\Delta t} = \frac{d\vec{\theta}}{dt} \dots\dots\dots \text{公理⑥}$$

e-3、平均角加速度原則：

$$\vec{a}_\theta = \frac{\Delta \vec{\omega}}{\Delta t} \dots\dots\dots \text{公理⑦}$$

e-4、瞬時角加速度原則：

$$\vec{a}_\theta = \frac{d\vec{\omega}}{dt} \dots\dots\dots \text{公理⑧}$$

f、定理 (舉例)

f-1、定理五： $\vec{v} = \vec{\omega} r$

證明：1. $\vec{\theta} = \frac{\vec{s}}{r}$ (定義)

2. $\vec{s} = \theta r$ (從①)

3. $\frac{d\vec{s}}{dt} = \frac{d\theta}{dt} r$ (從②)

4. $\vec{v} = \frac{d\vec{s}}{dt}$ (公理②)

5. $\vec{\omega} = \frac{d\theta}{dt}$ (公理⑥)

6. $\vec{v} = \vec{\omega} r$ (比較③, ④⑤) qed.

f-2、定理六 $\theta_2 = \theta_1 + \int_{t_1}^{t_2} \vec{\omega} dt$

證明：1. $\vec{\omega} = \frac{d\theta}{dt}$ (公理⑥)

2. $d\theta = \vec{\omega} dt$ (由①)

3. $\int_{\theta_1}^{\theta_2} d\theta = \int_{t_1}^{t_2} \vec{\omega} dt$ (由②)

4. $\int_{\theta_1}^{\theta_2} d\theta = \theta_2 - \theta_1$

5. $\theta_2 = \theta_1 + \int_{t_1}^{t_2} \vec{\omega} dt$ (由③④)

qed.

其他定理可如此類推

§ 5.0 觀測與理論：

我們在本文〔§ 2.2〕節說過，亞里斯多德認為，科學知識（經驗科學）是由兩部份因素構成，這就是所謂演繹與歸納。關於演繹法的概念，我們已在上文展示過了，亞氏認為演繹理論的前題乃由歸納法而得來，關於歸納法的問題，我們將另立專文討論。但是，我們在此卻要指出的是：歸納法其實並不一定指通常的枚舉歸納法。枚舉歸納法是認為把許多有關的個別命題列舉出來，從而歸納出一全稱命題。從科學史上看，假設的提出常常是靠從若干個別事象中（或說從有關個別事象的語句或命題中），運用理解而猜測一些假設。重要的是：這些個別事象是藉著辛勤的觀測或實驗才能獲得的。觀測或實驗在經驗科學的運用中具有二重意義或功能，其一是藉著觀測而幫助我們提出假設（假設可用作演繹推論的前題），其二是用來印證演繹推論所獲得的結果。因此，觀測或實驗乃建立經驗知識或經驗科學的第二條支柱。關於假設或猜測的提出，現在舉下列兩個例子來說明：

(A) 例一、托勒密的天體隨球面軌道運動說：

(a) 亞里斯多德把行星的軌道視作圓形的（平面時視為圓形，立體時視之為球面的）運動。托勒密就試圖從觀察行星出沒的結果而推論行星運動的軌道。首先，他指出行星繞球面運動的觀點最先可能出自古人對行星的觀測而獲得的，古人不斷地觀察太陽及月亮與其他行星常常在平行的圓（同心圓）中上昇與下降，好像從地球下面慢慢上昇直至中天，然後又慢慢下降，好像往地球掉下去而消失似的。但是，當這些星球沈寂一段時間之後，人們又看到它們再昇起來，好像重新開始一樣。他們觀察到星球的昇降是有一定的秩序和規則的。從可見的星體之圓形軌道，以及它們乃環繞同一中心運動，而使到他們得到有關球面運動的概念，這個中心點便成為天球的中心，接近此點的星球便環繞著它而構成較小的圓，而離它較遠的星球便依其距離比例而構成較大的圓。此外，人們又觀察到距離中心較近的星球消失的時間較短，而距離較遠則消失時間較長，在這些觀察到的結果下，人們就提出球面運動的構想。人們原可假設星球是隨直綫而作無限的運動，但是，這樣的假設就難於說明何故所觀察到的星球每天皆由同一的始點開始運動？一個星球如何能由無限遠的地方又跑出來？它跑回來時又如何能避人耳目呢？

(b)托勒密認為從以太的物性方面加以考慮，亦可以「猜測」出星球乃環繞球面而運動的，因為以太乃一切物體中最細微及作均勻分佈的（此即所謂同質，homogeneous），因此，平面上的圓及立體中的球形也就成為同質的。由於以太不是平面而為一立體，故以太只能是球形的。此外，事實又於顯示出自然世界把地球上及所有可毀壞的東西塑造成同質的圓形，而天上的物體卻藉以太而以同質的球形構成，因為如果它們只是平面的圓形，這樣，對於在地球上的人來說，他們在同時間而不同地點不會同樣地看到天體的圓軌的。所以，我們就有理由猜想那些受到以太包圍的東西是球形的，又由於球體各部份的同質性（homogeneity），所以它（球體）便作圓軌及有規則的運動（註⑥）。

我們在這裡列舉托勒密對於天體環繞球面運動的理由，這是個「假設」或「猜測」（conjecture）。從方法論上說，我們特別感到興趣的是這個猜測是怎麼樣被提出來的。以上所列舉的(a)(b)兩項，分別是從不同的基礎上提出的，也就是說，一個假設或猜測是可從不同的理論基礎上提出的。但是，我們這裡列舉(a)(b)兩項的理由，卻在方法論上極具代表性。

先就(a)點說，那是從觀察而作出的「猜想」。觀察到的「事實」似乎是：星球有規律地（往復循環地）從地球某方位上昇，然後在某方位下降。為了「合理地」說明這種現象，於是古人就採用了圓軌（circular）或圓周運動的概念。然而，古人為甚麼不採用近似圓或橢圓的概念以解釋這現象呢？這個問題的答案見於亞里斯多德的「天體論」，亞氏認為直線運動及圓周運動是運動（位移）的兩種（最）簡單的形式，而所謂簡單的運動是因為這些運動只有簡單的矢長（magnitudes，量）。圓軌運動是繞圓心的運動，而直線運動則分別為向上及向下兩種。向上運動乃指離向圓心而運動，向下運動則指朝向圓心的運動（註⑦）。這裡涉及幾個問題：

(1)何謂簡單運動？回答這個問題的答案不妨視之為有關「簡單運動」的定義。

(2)星球是以圓軌這種簡單形式運動嗎？這個問題的答案不可視為定義，而是藉著觀察天體運動的種種現象，並且藉著(1)以解釋或說明這種現象。

進一步而言，如果把上述的(1)視為定義，那麼(2)便可視作假設或猜測。但是，這些假設或猜測不是隨意提出來的，而是把之視為解釋，所觀察到的現象（事實）的根據（理由）。這樣的「猜測」既然不是隨意的，那麼，這在方法上是否有一定的途徑可循呢？亞里斯多德把這種方法途徑稱為「歸納法」，也就是說，「星球以圓軌的途徑運動」這個命題是由歸納而得的。然而，歸納法的結構又是怎麼樣的呢？它是從許多個別語句或個別現象中歸納出全稱命題嗎？我們有甚麼理由以保證歸納而得的命題是全稱的呢？如果它不是全稱的，那麼，它的有效領域又如何的呢？此外，在歸納的過程中是否又涉及個人的洞悉力（insight，有些之稱之為直覺 intuition）呢？這些都是方法論中等待分析的問題。

再其次，我們就(b)點說，從以太的物性而猜想「星球環繞球面運動」，這個「猜想」（猜測）的觀測根據就較(a)點少了，它基本上是用「以太」這個概念為基礎，分析「以太」的物性而提出的構想。然而，「以太」本身就是一個假設或猜測，所以，建立在以太這個猜測之上的有關星體運動方式，其猜測性就較(a)項更強了。進一步而言，以太的概念又如何被提出來的呢？它有甚麼的物性呢？以太的概念在古希臘的哲學家 Anaxagoras 已經提出，但以亞里斯多德的構想影響托勒密較大。

亞氏在他的「天體論」一書第一卷第二章有二個有關以太存在的論證，我們在這裡只展示其中的一個。亞氏的這個論證是這樣的：他把位移運動分為自然的與非自然的二種，而非自然

的運動又視乎有關的事物而不同，意思是說，對甲事物為非自然的運動，但對乙事物來說卻為自然的運動。例如石頭以向下為自然運動，向上為非自然的。但是對火焰來說則剛好相反。同理，圓軌運動對甲物來說為非自然的運動，而對乙物來說卻是自然的。進一步而言，如果圓軌運動是自然的，那麼，它必然是某種簡單物質的運動形式。反之，如果圓軌運動為非自然的，那麼，我們就難以想像何故這種違背「自然」的運動都是連續不斷的，因為經驗告訴我們，非自然的運動總是很快便會終止下來。由於圓軌運動是連續不斷的，又由於已知的元素（水、火、土、氣）皆為直綫運動，所以，亞里斯多德便推想有另一種物質，它的運動形式是圓軌的（註②）。

由此可見，以太在亞氏的理論中完全是一項猜測，現在，托勒密又以此猜測為基礎而提出星球繞球面軌道運行之說，就成為猜測中的猜測了。由此可見，雖然上述(a)(b)兩項皆屬猜測，但其猜測性也有層次之分，這種分別可說是構成自然科學裡的二種不同的理論進路，我們也可以借助氣體動力學的情形說明這兩種處理方法的差別。

(B) 例二、氣體動力學中的宏觀與微觀的概念：

在氣體動力學裡有二種不同的理論進路：

(a) 宏觀的描述：從觀測中建立有關氣體的溫度、壓力及其體積的一般原則，例如波義定律：在對閉的容器內，當氣體的溫度不變時，其壓力與體積成反比例。查理定律：在上述的情況下，若氣體的壓力不變，則氣體的溫度與其體積成正比。伽爾文定律：氣體的體積與其壓力成反比，而與其溫度成正比。這些所謂定律，其實是由實驗歸納得來的。而提出這些原則的方法類似於本節例一中的(a)項。

(b) 微觀的假設：在氣體動力學中，除了上述的宏觀原則之外，還有一套假設以說明氣體運動的情形，例如說：

(1) 氣體是由一堆像小皮球般的小粒子所構成。

(2) 這些粒子的運動是遵守牛頓運動三定律的。

(3) 在同溫同壓下，同體積的任何氣體，會有同數的分子。

(4) 粒子與粒子之間及粒子與容器壁之間的碰撞時，其動量及動能保持不變。

以上四條，可視作氣體的微觀模型，這個模型的特性與上述托勒密從分析以太概念而提出星球繞球面運動的猜測在方法上較為接近。有時候，(a)類的假設又稱之為原則或公理，而(b)類猜測稱為假設，愛因斯坦分別名之為「原則物理學」(physics of principles)及「假設物理學」(physics of hypohese)。他說：「在物理學裡，我們可以把各種不同的理論加以分別，大多數的理論是建構的理論(konstruktive theorien)，這些理論是企圖從一個相對地較為簡單的形式結構作基礎而把較複雜的現象建構成一幅圖像。例如，氣體動力便企圖把力學的、熱學的及擴散情形還原到分子的運動中去，這是說，利用分子運動這個假設以建構氣體的力學的、熱及擴散現象。……。在最重要的理論方法之中，還有一種方法，我名之為原則理論(prinziptheorie)，這種方法不是用作綜合的，而是分析的，這種方法的始點及基礎並不是假設性的建構成素，而是藉經驗而發現出來的自然現象之一般性質，這就是原則，從這些原則在利用數學而獲得一些規則，從而便進一步獲得個別事件或理論圖像(Bilder)」(註③)。

愛氏所謂原則理論及建構理論(假設理論)，前者實即指以歐氏幾何的方法模式之演繹系統而言，這是阿基米德、托勒密、哥伯尼、伽里略、開普勒、牛頓及愛氏的相對論所共同採用

的方法，而後者為模型理論，如上述對氣體的微觀理論便是。托勒密從以太概念以解釋星球的圓軌運動以及亞里斯多德對以太概念的構想等均可列入建構理論中。亞里斯多德特別重視原則理論，他一方面認為這些原則乃來自歸納，其真確性是自明的；另一方面又認為科學知識就是以這些歸納的普遍原則作為前題，從而演繹出其他命題。關於觀測與假設的問題，我們將有專分另行分析。

§ 6.0 結 語：

在本文，我們從運動的概念而分析與展示這個概念的有關方法，這就是演繹與觀測（實驗），我們特別分析了演繹法的源流及其特性。我們又特別對亞里斯多德有關方法論的觀點詳加分析和展示。就現代力學的觀點看來，亞氏的運動理論並不能與伽里略的思想協調，但是，在方法論上說，亞氏的貢獻是至巨的。亞里斯多德是第一個提出演繹法及實驗歸納的思想家，認為演繹理論的前題必須從歸納觀測的結果而來。

在演繹的理論方面，亞氏建立了三段論邏輯，幾何學方面的演繹系統則由歐幾里德所完成，這種方法就是公理系統法。亞里斯多德的物理學並沒有採取數理的系統演繹法建構，但他對科學知識的演繹系統卻經歐幾里德而由阿基米德應用於力學中去，再由托勒密應用在天文學上。從托勒密、哥伯尼、伽里略、開普勒而由牛頓綜合成更完整的古典力學體系，體系一詞根本就離不開演繹這個概念。

除了演繹概念及其方法之外，經驗科學的第二條支柱就是實驗觀測。實驗觀測的作用一方面提供了演繹的原則或假設，另一方面又在於檢證演繹的結果是否與事實相符合。若理論與實驗不相符合，便要根據實驗結果而提出新的假設（原則），從而修改舊理論。我們已說過，假設可分二類，從而構成了兩種不同的理論型態，儘管如此，無論原則理論中的假設或建構理論中的假設，皆直接或間接地與觀測有關係，就這二種理論中的假設來說，其差別只在於「猜測」的程度有所不同而已。托勒密在他的“Almagest”卷一提出了一些假設，作為他的演繹理論之基礎，例如地球是球體、星球繞球面運動、地球為天體中心、地球是固定不動等。從科學方法論方面看，天文學的發展很自然地使我們認識到科學方法的內含，這種對方法的認識便間接地促進其他科學在方法上的改進。當天文學家提出理論以處理天體問題時，他們便自然地從事於天象觀測。我們已經說過，觀測的功能一方面在於幫助我們提出假設，另一方面是印證演繹的理論，若理論不符合事實，便要修改理論（指原則理論的假設系統），托勒密的地球中心說便是一項實例。

托勒密既然提出星球作圓軌運行，並且環繞地球而作等速運動的。但是，如果星球是作等速運動，則有些現象就無法得到合理的解釋。例如：如果太陽以等速環繞地球運行，則何故又會有四季的差異現象呢？如果地球為天球的中心，水星及金星何故永遠較接近太陽？而火星、土星等有時會相對於其他星球而靜止，有時則相對地運動著，這其實表示出這些星球運動的不規則性，與上述的假設相違背。哥伯尼在「論天球的繞動」（*On the Revolutions of the Heavenly Spheres*）一書裡，檢討了地球中心的假設。他在觀測中發現，從地球上看到水星及金星常處於接近太陽的方位，此二星並且從不出現於與太陽成反方向的空間，他因而推斷水星較接近太陽，而且認為水星及金星皆繞太陽而運動。至於火星、木星及土星，它們有時出現於與太陽成反方向的位置，這等於說地球有時是位於這些行星與太陽之間。當行星出現在與太

陽成反方向的位置時，它們便是現得較為明亮，這就表示這些行星此時較接近地球，也可從而進一步推斷此三星距太陽的軌道較地球距離太陽為遠，由此可知地球不是宇宙的中心，它只是六個環繞太陽運行的行星之一吧了（註⑥4）。

哥伯尼雖然取消地球中心說，但他的世界圖像並沒有超出的太陽系，他以太陽作為整個宇宙的中心，這正表示科學工作是漸進的。一個時代的科學知識常常就在於藉著檢討前人的工作而作出有限度的推展。此外，從亞里斯多德到哥伯尼，皆認為行星的軌道為圓形（從平面上看），這個構想到了開普勒才加以修正，他的第一定律告訴我們：「行星繞太陽運行的軌道是橢圓的，而太陽是在橢圓的一個焦點上」。開普勒三大定律是藉觀測所得的資料才整理出來的，這些資料基本上是來自布拉格的天文學家布巴哈（Tycho Brache）。布氏觀測火星12個周期，約經歷20年的歲月，才累積這些資料（數據）。開普勒原先是順著托勒密以火星沿圓軌道運行這個假設，使用逐步逼近法，經過數十次的演算，但演算的結果一直無法與實際的觀測互相一致，才放棄了圓軌道的假設。隨後，開普勒又假設行星是沿著像鴨蛋形（兩端大小不等）的軌道上運行，經過複雜的數據演算之後，發現從這個假設而得出的結論仍與實際觀測不相符合，最後才採用了行星沿橢圓軌道運動的構想，並且以此假設進行演算（推演），所得的結果才與實際觀測所得到的結果相符合。此外，開普勒又從天文學家布巴哈有關火星的資料中，發現當火星接近太陽時的速度較快，而遠離太陽時的速度較慢。於是，他便推想到在橢圓軌道上運行著的火星與它所需的時間有一定的比例關係，這就是他所發現的第二定律：

「行星在矢徑（太陽中心與行星中心所連接的直線）在相等時間內，它所掃過的面積相等」（註⑥5）。

然後，開普勒又用十六年的時間，從觀測中分析行星公轉的時間與太陽之間距離的關係，結果，他又發現了第三定律：

「行星繞太陽而轉動的周期（時間）之平方與橢圓軌道的半長軸之立方成正比」（註⑥6）。

天文學家之所以接受開氏的三大定律，因為用這些定律以計算行星的方法，其演算結果之準確性（即驗證於實際的觀測），較採用傳統上以行星繞圓軌道所得的結果之準確性更高。理論要以實際的觀測加以印證，才斷定理論是否可以接受，這是經驗科學工作的基本衡量方法。亞里斯多德雖然已提出了歸納法以處理這些資料，但到了法蘭西斯培根，才對歸納法的結構及運作提出較詳細的分析，這可見於他的「新工具」一書第二卷（註⑥7）。

總言之，科學知識在於它的系統性。以上是藉運動的概念以展示「原則理論」的系統結構，在這些分析中，我們說明了理論和假設的意義，同時，我們也藉著這些分析而闡明科學的進步乃是循序漸進的，並非一躍即至，而這種進步，又與其中的方法分不開。

註 釋

- 註1. Aristotle, *Physics*, Book III, 193a, 1-25. 見於“The Basic works of Aristotle, p.237, trans. by R. Mckeon.
- 註2. 同前, 193a, 193b.
- 註3. J. Barnes, *The presocratic philosophers*, p.29.
- 註4. D. Ross, *Aristotle*, p.62.
- 註5. S. P. Lamprecht, *Our philonopical Traditions*, p.68.
- 註6. *Physics*, Book III, §3, 194b, 同① p.240.
- 註7. Aristotle, *Natural Science (physics)*, in Aristotle, pp.25-26, trans. by P. Wheelwright.
- 註8. Aristotle, *posterior Analytics*, Book II, §1., 同① p.158.
- 註9. 同⑧, 71a, 同① p.110.
- 註10. 同前, 72a-5., 同① p.112.
- 註11. 同前, 75b, 同① p.121.
- 註12. 可參考 R. Carnap, *Logical Syntax of Language, Formalization of Logic* 等書。本文作者在“古典邏輯與建構主要邏輯的比較”一文(東海學報廿五卷, pp.219-259)也可參閱。
- 註13. *Posterior Analytics*, 100b, 同① p.186.
- 註14. “Nature has been defined as a principle of motion and change.” 同① Bk. III §1, p.253.
- 註15. 同前, 201a, p.254.
- 註16. Aristotle, *Metaphysics*, Bk. Ix, 同 1. pp.820-833.
- 註17. 同 1. , 220a, p.293.
- 註18. 同 1. , 254b, pp. 363-4.
- 註19. 同 1. , 254b-255a, pp.363-4.
- 註20. “then all things that are in motion must be moved by something.” 同①, 256a, p. 367.
- 註21. 同 1. , 243a, pp. 342-3.
- 註22. 同 1. , *physics*, Bk. VII, ch. 5, p.353.
- 註23. 同前, 250a, p. 354.
- 註24. Aristotle, *De Caelo (On the Heavens)*, Bk. I, chap 2, 同①, p.399.
- 註25. 培根說:「人類的理智有一種奇特的本性,就是易於設想較事物本身是有更大程度的秩序及均等性……因此,就有了認為天體是以絕對的圓形方式而運動的假想,……。」見於 Francis Bacon, *Novum Organum*, First Book, § 45 in “Great Books of the western world, vol. 30, Francis Bacon, p.110.
- 註26. 關於阿芝拉斯的這個論點,見於亞氏的「物理學」卷六,第九章,同① pp.335-6。
- 註27. 同註② Bk. VI, chap. 9。又可參考 D. Ross, *Aristotle*, pp.83-85。
- 註28. *Euclid's Elements*, in “Great Books of the western world”, vol. II.
- 註29. Kant, “*Metaphysische Anfangsgrunde der Natur wissenschaft*” in Bd. IV der Akademieausgabe, S.467.
- 註31. Archimedes: *On the Equilibrium of planes*, Bk. I, 同② pp. 504-505.
- 註32. Ptolemy, “*The Almagest*”, Bk. I, preface, p.5. in “Great Books of the western world”, vol.16.
- 註33. 同註32, p.5。
- 註34. 同32, pp.6-7。
- 註35. Nicolaus Copernicus, *on the revolutions of the Heavenly spheres*, p.535.
- 註36. Isaac Newton: *Principia*, Book one, section I, p.29.

註37. 同註③⑥, Section XIV, 在光學方面, 牛頓是主張光乃由粒子構成。

註38. 笛卡爾的觀點見於他的“principles of philosophy”, part III, 特別是由 principle III — principle CXVIII。

註39. 同36., Book III, pp.411-217.

註40. 同前 Hypothesis I: “That the centre of the system of the world is immovable”.

Proposition XI. Theorem XI: “The the common centre of gravity of the earth, the sun, and all the planets, is immovable.” p.419.

註41. Hypothesis I: “That the centre of the system of the world is immovable”. p.419.

Hypothesis II: “If the other parts of the earth were taken away, and the remaining ring was carried alone about the orbit of the earth by the annual motion, while by the diurnal motion it way in the meantime revolved about its own axis inclined to the plane of the ecliptic by an angle of $23 \frac{1}{2}$ degrees, the motion of the equinoctial points would be the same, whether the ring were fluid, or whether it consisted of a hard and rigid matter.” p.489.

註42. 同前, p.2。

註43. 同前, pp.5-6。

註44. Newton's system of the world, 本文附錄在註③⑥的書中, pp.549-626。

註45. 同前, pp.551-552。又見於全書卷首的定義部分也有論及, p.3。

註46. 同前, p.397。

註47. John Locke, An Essay Concerning Human Understanding, pp.112-113. (Glasgow, 1964).

註48. 同③⑥, p.398。

註49. 同前, p.14。

註50. 同前, p.14。

註51. 若要更正確地描述力, 則除了力的大小與其作用的方向之外, 還要考慮到力的作用點。

註52. Axioms or Laws of Motion, Corollary II, 同前 p.150.

註53. Galileo Galilei: Dialogue of the two New Sciences, p.197.

註54. 同前, pp.197-8。

註55. 同前, p.203。

註56. 本論證全部照譯, 其中分點則由筆者所加, 見前引, p.205。

註57. 關於採用公理系統法重建質點運動學的問題, 筆者在「後設倫理學」一書第一章已經提出來, 該文刊於中國文化月刊第六十期, 頁46-72。

註58. 但是, 由於剛體只是一個理想性的東西, 實物卻常因環境而有變遷, 所以物理學家就想以自然物取代放在巴黎計量局裡的鉑銥合金棒, 這是在1960年以前視為長度標準的剛體。1980年的第十七屆國際計量會議, 規定一米為光在真空中以 $1 / 299792458$ 秒的時間所行徑之距離。至於時間的量度工具可用時鐘, 凡具有周期性的過程皆可視作時鐘。1967年在第十三屆國際計量大會規定以鉯-133 原子基態的兩個超精細結構之間的微波輻射周期 T 為時間單位, 1 秒界定為 $9,192,631,770 T$ 。

註59. 參考 Alonso-Finn: Fundamental University physics p.88.

註60. 同註③⑥, pp.7-8。

註61. Aristotle: On the Heavens, p.399.

註62同前，pp.401-403。

註63. Albert Einstein: *Mein weltbild*, ein Ullstein Buck, Bd. (Germany).

註64. Nicolaus Copernicus, "On the Resolution of the Heavenly Spheres", in "Great Books of the western world", vol.16, pp.499-838.

關於檢討地球中心說的問題，哥伯尼在該書卷一第七章至第十章有詳細的分析，特別是在第十章（On the order of the Celestial orbital Circles）裡所展示的。見pp.521-529。

註65. Kepler 的第一及第二定律見於1609出版的「新天文學」（New Astronomy）一書，這本書的德文的原文頗長：

‘Neue Astronomie mit Beweisfunrung oder physik des Himmels dargestellt in Abhandlungen uber die Bewegungen des sternes Mars, Nach den Beobachtung des Tycho Brahe, Auf Befehl und kosten Rudolfs II . . . Romischen Kaisers . . . in mehrjabriger rastloser Arbeit verfasst zu Prag von Sr. Heil Kais Maj. Mathematiker Johanner Kepler’. (1609).

註66. 他的第三定律則在他另一書提出的，此書名為「世界的協調」（*Harmonices mundi, weltharmonie. The Harmonies of the world*), (1619).

註67. 關於這個問題，見於培根的名著「新工具」一書第二卷，他把歸納過程分為三個階段，此即：(a)肯定階段，把觀測而得的資料系統化，觀測工作常常需要科學儀器，才能進行收集有關現象（例如熱）的一切事例。(b)否定階段，研究否定的事例。(c)比較階段，研究不同現象的差異，觀察各種變化之間的關係，從普遍性低的相互關係而歸納出其普遍性較高的相互關係。他提出這些相互關係有些是屬偶然的，有些則為必然的，故要設法排除這些偶然性而保留其中必然性。例如說，就A B二事物而言，當A增加時，則B會減少，則A與B的相互關係為偶然的，應把之排除。原理的普遍性程度隨着歸納的逐步上升而增高，而普遍性程度最高的原理就是定律，見於Francis Bacon, "Novum organum". Second Book in "Great Book, of the western world" vol. 30, pp.137-195.

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PHENOMENOLOGY AND COMMUNICATIVE ETHICS

Chan Wing-cheuk

When one regards life-world as the normative fundament, one has to face a problem: "how to show that such a position is compatible with the thesis that morality is autonomous?". From the communicative ethics developed by Karl-Otto Apel and Jürgen Habermas, one can find a possible way to demonstrate this compatibility. However, the basic difference between Apel's and Habermas' conceptions of communicative ethics has complicated the solution. Accordingly, it is necessary for us to clarify the difference between them, before showing how the communicative ethics can at the same time maintain the autonomy of morality and the function of life-world as normative fundament.

For the phenomenologists, the significance of the communicative ethics lies naturally first of all in its discussion of the role played by life-world—an important leading concept in phenomenology. But beyond this general concern, in this essay we shall try to point out that the difference between Apel and Habermas in the communicative ethics reflects the difference between Husserl and Merleau-Ponty in the phenomenological movement. Namely, in order to make clear the nature of the difference between Apel and Habermas, it is helpful to compare it with the difference between Husserl and Merleau-Ponty.

Moreover, although it is not quite well-known, Husserl had developed a systematic criticism of Kant's formalistic ethics in his unpublished lectures of the Freiburg period. Regarding the formalistic character of the communicative ethics claimed by Apel and Habermas, it is also interesting to see whether Husserl's critique of Kantian formalistic ethics is also applicable to the communicative ethics in Apelian and Habermasian sense.

Finally, by appreciating the critical function of the communicative ethics, we shall try to show in what way can the communicative ethics mediate the thesis of life-world as the normative fundament and the thesis of the autonomy of morality.

I

Both Husserl and Apel are similar in attempting to develop a new type of first philosophy (*erste Philosophie*). While Husserl identifies the first philosophy with a new kind of philosophy of consciousness, i. e., a transcendental phenomenology, Apel equals it with a new kind of philosophy of language, i. e., a transcendental pragmatics. In regard to their respective development of thinking, one can also discern the following basic correspondences between these two philosophers.

First, in Apel's writings there implies a kind of reduction which functions like Husserl's phenomenological reduction. Such a reduction leads us from a conventional

domestic moral (*konventionelle Bienenmoral*) to a postconventional universalistic moral (*postconventionelle universalistische Moral*).¹ One can analogically call it “communicative-ethical reduction”.

Second, the principle of universalization (*Universalisierungsprinzip*) (U) has a status within the communicative ethics paralleling to the status of the principle of all principles within Husserl’s phenomenology. The formulation of the principle of universalization in the communicative ethics is as follows:

(U): “Each valid norm must fulfill the condition that the consequences and side effects, which presumably result from its *general* following for the satisfaction of interests of *each* individual, can be accepted by *all* people concerned without any compulsion”²

Although this principle is introduced by Habermas, Apel totally accepts it and regards it as “an adequate explication of the normative principle”.³ Indeed, the principle of universalization in the communicative ethics, like the principle of all principles in Husserl’s phenomenology, is conceived as a *Rechtfertigungsprinzip* or *Begründungsprinzip*.

Third, in claiming that (U) is merely a *Verfahrensprinzip*, Apel, at this point Habermas too, exercises a kind of eidetic reduction. But, unlike the “eidetic reduction” in Husserlian sense, “eidetic reduction” in Apelian (and Habermasian) sense only admits formal a priori but not material a priori. In general, communicative a priori, or, in particular, the normative-ethical conditions of possibility of communication are purely *formal* in character. For example, (U) is “kein *Generationsprinzip* inhaltlicher Normen, sondern nur ein *Verfahrensprinzip* für die --realen oder internalisierten-- *praktischen Diskurse*, in denen inhaltliche Normen begründet werden sollen” -- as it is pointed out by Apel.⁴

Fourth, both Husserl and Apel maintain the possibility as well as the necessity of the “Letztbegründung der philosophie überhaupt”. While Husserl appeals to “die Letztbegründung im cogito”,⁵ Apel bases it “in die *Nichthintergebarkeit des argumentativen Diskurses*”.⁶ According to these two philosophers, overcoming the skepticism is the major task of philosophy. They believe that the final triumph of philosophy over any skeptical challenges and hence the very possibility of philosophy itself can only be guaranteed by the “Letztbegründung” of philosophy. In this respect, they are followers of Descartes. But while Husserl starts with the notion of “apodictic evidence”, Apel begins with the concept of “pragmatic contradiction”.

Fifth, for Husserl as well as for Apel, philosophy is essentially *transcendental*. Habermas points out that “Mit der Argumentation überhaupt” gewinnt Apel einen Bezugspunkt, der für die Analyse nicht-verwerfbarer Regeln genauso fundamental ist wie das ‘Ich denke’ bzw. das ‘Bewusstsein überhaupt’ für die Reflexionsphilosophie”.⁷ That is to say, “argumentation in general” has a place in Apel’s transcendental

pragmatics exactly corresponding to the position occupied by "consciousness in general" in Husserl's transcendental phenomenology. In insisting to develop philosophy in a transcendental manner, both Husserl and Apel belong to the Kantian tradition.

Finally, the concept of "responsibility" plays an important role in Husserlian transcendental phenomenology as well as in Apelian transcendental pragmatics. With this concept both Husserl and Apel respectively introduce a *teleological* dimension in phenomenology and communicative ethics. In realizing the regulative character of "apodictic evidence", the later Husserl has to conceive the intentional constitution of objects as a teleological movement. Only with the conception of intentionality as responsibility can Husserl see the possibility of realization of a *complete* account of the constitution of objects in the world. According to Husserl, the search for apodictic evidence can be made possible only when the phenomenologist himself fulfill the ethical condition: "To be a *responsible* philosopher!". On the other hand, Apel maintains analogically, "(U) selbst müsste nämlich . . . nicht nur auf der Ebene des *handlungsentlasteten Diskurses* für die von den Folgen ihrer Anwendung Betroffenen akzeptiert sein, sondern sie müsste auch auf der Ebene der *geschichtsbezogenen Anwendung* für die Einzelnen als *hinreichendes Prinzip der Maximenbefolgung*, etwa im Sinne der Pflicht zur Beteiligung an schon institutionalisierten oder noch erst zu organisierenden praktischen Diskursen, akzeptierbar sein".⁸ As a consequence, in addition to (U), Apel introduces in an auxiliary manner "ein *moralisch-strategisches Ergänzungsprinzip* (E)".⁹ In fact, Apel formulates (E) in the following way:

"Das im *handlungsentlasteten Diskurs* gültige Prinzip sollte auch bei der Lösung von Interessenkonflikten in der *Lebenswelt*, in der Kommunikation nicht handlungsentlastet sind *angewendet* werden".¹⁰

Apel also emphasizes: "Das von mir angedeutete Ergänzungsprinzip (E) ist zwar *teleologisch* orientiert, aber nicht am substantiellen *Telos* des *guten Lebens*, sondern am *Telos* der Beseitigung der Hindernisse, die der Anwendung des reinen Diskursprinzips (U) im Wege stehen".¹¹

The above thematization of the similarities between Husserl's transcendental phenomenology and Apel's version of communicative ethics reminds us of Habermas' complain that Apel "den Letztbegründungsanspruch der Transzendentalpragmatik genau auf jene Identifikation von Aussagenwahrheit und Gewissheitserlebnis, die nur im reflexion Nachvollzug einer vorgängig intuitiv vollzogenen Leistung, d. h. unter Bedingungen der Bewusstseinsphilosophie vorgenommen werden kann".¹² However, in order to fully work out the difference between Habermas and Apel, it is helpful to start with an exposition of Merleau-Ponty's critique of Husserl. Such a move can be understandable if we realize that there is a strong anti-Cartesian tendency in Merleau-Ponty's and Habermas' philosophies.

In brief, one can summarize Merleau-Ponty's critique of Husserl in the following thesis:

(1) The Cartesian ultimate grounding (*Letztbegründung*) is impossible. Like other French phenomenologists, Merleau-Ponty emphasizes the pre-givenness of life-world. Phenomenology for him is nothing but the explication of the "logos of the aesthetic world".

(2) Phenomenological reduction is essentially *incomplete*. Accordingly, phenomenological reduction does not lead us to any "worldless" subjectivity.

(3) Eidetic reduction is necessary only because we need the realm of ideality to know and conquer the factuality of the world. Fixation through eidetic variation is merely a means and basically transitional. The goal is rather the living stream of reality. In other words, "he views the entire order of essences merely as a provisional conceptual fixation, imposed on us by the character of language".¹³

Paralleling to Merleau-Ponty's critique of Husserl, Habermas develops a similar objection against Apel. First of all, Habermas rejects Apel's thesis of "Letztbegründung". According to Habermas, Apel's claim of "Letztbegründung" is resulted from "einer inkonsequenten Rückkehr zu Denkfiguren, die er mit den energisch vollzogen Paradigmenwechsel von der Bewusstseins-zur Sprachphilosophie selber entwertet hat".¹⁴ Habermas himself regards communicative ethics as a kind of reconstructive science. Namely, the presuppositions and rules of argumentation are resulted rather from a rational reconstruction. As a reconstructive science, communicative ethics has to be supplemented by the empirical sciences. In general, a reconstructive science has to be subject to the empirical test. Such a thesis of complementarity between philosophical theory and empirical sciences reminds us of Merleau-Ponty's phenomenological positivism. In fact, in granting the transitional character to eidetic reduction, Merleau-Ponty also emphasizes the cooperation between essential variation and induction.¹⁵ Indeed, Merleau-Ponty is well conscious of the fundamental *dynamic* character of reality. Accordingly, "he views the entire order of essences merely as a provisional conceptual fixation".¹⁶ Similarly, in granting the status of reconstructive science to the communicative ethics, Habermas tries to avoid the absolutization of moral theory. One can ascertain that for Habermas the meta-community has to be "sensitive to everything" or "sensitive to the variety of the situation". As a matter of fact, Habermas claims that there is no damage resulted, if the "Letztbegründung"-thesis is abolished.¹⁷ Such an anti-fundamentalistic position can also allow us to have a new possibility of testing the validity of the communicative ethics. Namely, it can well be incorporated into the dimension of the development of moral and legal consciousness and hence subject to an indirect test.¹⁸

In addition to Lawrence Kohlberg's six-stages classification of the development of moral consciousness, Habermas introduces a seventh stage. This is a stage of the communicative ethics. At this highest stage, "the principle of justification of norms is no longer the monologically applicable principle of universalizability but the com-

munally followed *procedure* of redeeming normative validity claims discursively".¹⁹ With this new principle of justification of norms, Habermas is able to find a possible solution for the problem of legitimation at the rational level. That is to say, the rational reconstruction of the conditions of validity of expressions provide a *critical* standard in the face of law-giving authority.²⁰ Here one can see that Habermas' theory also implies a kind of communicative-ethical reduction which leads us from the conventional level of moral to the highest stage of the post-conventional level of moral.²¹ However, Habermas' version of the communicative-ethical reduction is by no means transcendental. The difference between Habermas' and Apel's versions of the communicative-ethical reduction is quite similar to that between Merleau-Ponty's phenomenological reduction and Husserl's transcendental-phenomenological reduction. Moreover, it seems that for Habermas the necessity of the communicative-ethical education lies in the *critical* function of the communicative ethics. Indeed, Habermas not only embeds this reduction into the process of social evolution, and hence admits the *historical* character of the communicative-ethical reduction, but also emphasizes that even the communicative ethics itself is rooted "im Horizont der Lebenswelt".²² In fact, he explicitly points out: "Wenn nicht schon hier, in Zusammenhängen kommunikativen Handelns, also vor aller Reflexion, Geltungsansprüche im Plural auftreten, ist eine Differenzierung zwischen Wahrheit und normativer Richtigkeit auf der Ebene der Argumentation nicht zu erwarten".²³ On the other hand, in spite of recognizing that "Universalistische Moralen sind auf Lebensformen angewiesen", Habermas claims that at the post-conventional level of moral consciousness "löst sich das moralische Urteil von den lokalen Übereinkunften und der historischen Farbung einer partikularen Lebensform; es kann sich nicht länger auf die Geltung dieses lebensweltlichen Kontextes berufen".²⁴ As a consequence, in distinguishing from Merleau-Ponty, Habermas fails to realize that the communicative-ethical reduction is essentially *incomplete*.

Indeed, from a phenomenological standpoint, one can make the following remarks in regard to Habermas' distinction from Apelian communicative ethics:

First of all, Habermas, like Merleau-Ponty's critique of Husserl which is rested on the conception of pre-reflective consciousness, bases his critique of Apel on the notion of pre-reflective communication. According to Habermas, we have to understand "the communication community in the first place as a community of interaction and not of argumentation, as action and not as discourse".²⁵ In particular, we have to recognize that "Der Streit um Norm bleibt, auch wenn er mit diskursiven Mitteln geführt wird, im 'Kampf um Anerkennung' verwurzelt".²⁶ Insofar as practical discourse is already operative in our *lebensweltliche* praxis, there is no need to introduce any principle of application of the communicative ethics -- as it is claimed by Apel. Only by overlooking this dimension of pre-reflective communication (and hence falsely identifying communication with reflective argumentation), then one is not able to see the *analytical* relation between the communicative ethics and the

ethics of responsibility. As a consequence, by disclosing the dimension of pre-reflective communication, one can derive the conclusion that "Letztbegründung" in Apelian sense is not only *unnecessary* but *impossible*. Such an effect is similar to that which is brought out by Merleau-Ponty in his argument against Husserl's thesis of "Letztbegründung" through working out the dimensions of pre-reflective consciousness. Indeed, Merleau-Ponty tells us "daß Reflexion radikal nur ist als Bewusstsein der Abhängigkeit ihres selbst von dem unreflektierten Leben, in dem sie erstlich, ständig und letztlich sich situiert".²⁷

Secondly, according to Ernst Tugendhat, there are actually two different motives underlying Husserl's phenomenology. Namely, the "motive of a critique of knowledge" and the "dogmatic motive". It is only the latter motive which leads Husserl to the Cartesian position of "Letztbegründung".²⁸ Such a teaching should help the proponents of the communicative ethics making their mind *for* the critical function of the communicative ethics but at the same time *against* the thesis of "Letztbegründung".

Finally, by limiting himself to "the point of view of idealizations of pure communicative action", Habermas, however, fails to realize the *material* presuppositions underlying his communicative ethics.²⁹

II

It is well-known that Hegel has criticized Kant's ethical formalism. In a recent essay, Habermas tries to show that Hegel's critique of Kantian formalism does not apply to the communicative ethics.³⁰ However, Husserl's critique of Kant's ethical formalism remains unknown to the public. It is indeed interesting to examine if the communicative ethics can escape from Husserl's critique of formalism.

In the unpublished part of his dissertation, Iso Kern points out: "Husserls Kritik an der Kantischen Ethik bezieht sich — abgesehen von den üblichen methodischen Verwürfen — hauptsächlich auf die Verkenning einer apriorischen fühlenden Vernunft und den daraus resultierenden ethischen Formalismus. Andererseits bewertete er den Kantischen Gedanken einer *formalen* Ethik (auf die sich nach Husserl aber notwendig eine *materiale* aufbauen muss) und spezieller eines formalen Imperativs sowie die Kantische Idee der Pflicht sehr hoch".³¹ According to Husserl, the status of Kant's formal ethics is quite similar to formal logic. So, just as we cannot formally decide what is true merely through the law of contradiction, we cannot formally decide what is morally good merely through the categorical imperative. Furthermore, Husserl complains that the categorical imperative itself is too loose. He writes: "Offenbar läßt sich mit diesem Satz alles machen. Da man in jedem Fall die *Maxime* in verschiedenster Weise fassen, bald dies, bald jenes, bald allgemeinere, bald weniger allgemeine Umstände in sie aufnehmen kann, so ergeben sich verschiedene und entgegengesetzte Möglichkeiten der Verallgemeinerung".³² For Husserl, the origin of

Kant's "abstruser Formalismus" lies in Kant's "Sensualisierung des Gefühls, bzw. das Verkennen der fühlenden (oder wertenden) Vernunft".³³ So, if one can free the moral feeling from the sensualistic prejudice and rightly recognize the "fühlende" character of reason, then one can realize that the valuating, active feeling alone can differentiate between rightness and unrightness. Accordingly, Husserl claims that "das Verpflichtende" is determined "aber nicht bloß durch einen formalen Imperativ, sondern wesentlich auch durch materiale Normen".³⁴ In other words, according to Husserl, Kant's formal ethics has to be supplemented by a *material ethics*.

Whether Husserl's critique of Kantian formalistic ethics is also applicable to the communicative-ethical formalism? This interesting question can be answered in the following manner.

First of all, from the Husserlian standpoint, the communicative ethics, despite its distinction from Kantian formalistic ethics, would be too "intellectualistic" in failing to develop a theory of moral feeling. It is true that the proponents of the communicative ethics are content of conceiving the fundamental principle of the communicative ethics, i. e., (U), not as a "*Generationsprinzip* inhaltlicher Normen, sondern nur ein *Verfahrensprinzip* für die — realen oder internalisierten—*praktischen Diskurse*, in denen inhaltliche Normen begründet werden sollen".³⁵ But one might ask: "Has the communicative ethical reason not also the 'fühlende' character?". As a matter of fact, the communicative ethicists need arguments to support their position which excludes the "fühlende" aspect of action from the dimension of moral justification. In other words, the proponents of the communicative ethics have to explain why moral feeling in Husserlian sense can contribute nothing to the justification of moral norms. Indeed, if Habermas now also admits "that the 'evidential dimension' of the concept of truth is badly in need of further clarification", then, similarly, the dimension of moral feeling in Husserlian sense should also be clarified, regarding a full explication of the concept of rightness.³⁶ Moreover, in interpreting (U) as a *Begründungsprinzip*, the proponents of the communicative ethics cannot change its "loose" character as it is founded by Husserl in Kant's categorical imperative. For example, we can well find an intelligent but morally imperfect person who is skillful in producing convincing and wholly acceptable arguments in the face of the public to justify his actions. Accordingly, (U) is not any sufficient condition for the justification of moral norms. Husserl would also urge us to go beyond the realm of formal principle in the communicative-ethical version and step into the dimension of material norms. Indeed, as Charles Taylor points out that there is a determinate idea of mankind underlying Habermas' (and Apel's) communicative ethics and such an idea itself is a product of the *Neuzeit*.³⁷ Namely, in conform to Habermas' own theory of social evolution or to Apel's theory of the logic of the development of moral consciousness, the arise of a post-conventional communicative ethics itself presupposes the outbreak of a new understanding of the essence of humanity since Enlightenment. Hence, even the very possibility of the communicative ethics itself has to be grounded on certain

concrete, material *lebensweltliche* norms.

III

It is true that both Apel and Habermas insist that (U) is a kind of *Begründungsprinzip*. However, if one discovers that each practical discourse has to start with or presuppose an implicit *Norm-Einverständnis*, then one cannot deny that life-world as normative fundament is "nichthintergebar". Indeed, the limitation of (U) mentioned above shows clearly that it is better understood as a principle for criticism rather than as a principle of justification. Accordingly, its proper function lies primarily in providing a procedure for the critical examination (*Prüfung*) of the validity of norms. As a matter of fact, (U) in itself can neither generate nor ground any norms. It rather points us to the possibility of critical examination of norms in the direction of requiring of a justification. Correspondingly, the ideal speech situation can merely function as a critical standard. This readjustment of the status of (U) not only provides a new topological determination of the communicative ethics, but also enables the communicative ethics to exercise its mediating function between the thesis of life-world as normative fundament and the thesis of autonomy of morality.

The communicative ethics occupies a unique position in contrast to other types of ethical theory by forming an essential aspect of modernization. The possibility of self-criticism is a constitutive condition for a rational society. Regarding the "sittliche" norms of our life-world, the communicative ethics provides us with a rational apparatus or procedure for putting this self-criticism of society into reality. Indeed, such a kind of self-criticism made possible by the communicative ethics also prevents the *lebensweltliche* norms from degenerating into a heteronomous status. For the reason that the *lebensweltliche* norms could become morally heteronomous only when they appear in the form of coercive order and with unchallengeable authority. Namely, only when they demand people to follow them blindly. Only when such a degeneration happens, then life-world as normative fundament is incompatible with the autonomous character of morality. However, if all the *lebensweltliche* norms are kept to be open to critical discussion, then they would not appear as heteronomous or external. In fact, the possibility of critical examination of their validity not only eliminates their infallible character, but also guarantees their rationally motivated acceptance by the people. To be sure, on the level of the post-conventional communicative ethics, the autonomous character of morality is related primarily to the intersubjective consensus. Nevertheless, the process of rational self-criticism of a society can only proceed in a piecemeal manner. Namely, every criticism itself is *horizonhaftig*. There is no rational self-criticism of a society which can be carried out "at one blow".

On the other hand, as it is shown above, since the "better argument" approach or the argumentative justification is just *one* form of moral *Begründung*, it is a mistake to reduce the moral rationality to the communicative rationality — though the latter

is a component of the former. Indeed, just like the role played by perception in justifying the natural knowledge, moral feeling in Husserlian sense can also contribute to the moral justification. That is to say, there is also non-discursive form of justification within ethical dimension. For example, that to save a child from falling into a well is morally obligatory can well be sufficiently justified by purely appealing to our moral feeling. Certainly, in the present industrial society, the human situation is highly complicated. Accordingly, in order to solve the moral conflicts in a rational manner, the necessity of the communicative ethics is undeniable. But here the communicative ethics has to be understood as a form of rational criticism. Moreover, one must admit that not all forms of moral justification are discursive. Finally, we can conclude that the communicative-ethical approach has to be supplemented by the phenomenological-ethical approach. In general, this should show that a philosophy of consciousness can well cooperate with a philosophy of language.

Footnote:

1. Apel, K.O., "Kann der postkantische Standpunkt der Moralität noch einmal in substantielle Sittlichkeit 'aufgehoben' werden?" (Ms.) 1985: pp. 21-22; p. 7; p.14.
2. Habermas, J., *Moralbewusstsein und kommunikatives Handeln*, Ffm. 1983: p. 131.
3. Apel (1985): p. 9.
4. Ibid.
5. Gadamer, H-G., *Heideggers Wege*, Tübingen. 1983: p. 143.
6. Apel (1985): p. 9.
7. Habermas (1983): pp. 91-92.
8. Apel (1985): p. 10.
9. Ibid. p; 16.
10. Ibid: p. 17.
11. Ibid: p. 21.
12. Habermas (1983): p. 106.
13. Kwant, R. C., *The Phenomenological Philosophy of Merleau-Ponty*, Pittsburgh. 1963: pp. 159-160.
14. Habermas (1983): p. 106.
15. Waldenfels, B., *Phänomenologie in Frankreich*, Ffm. 1983: p. 164.
16. Kwant (1963): pp. 159-160.
17. Habermas (1983): pp. 107-108.
18. Ibid. It should be noted that Merleau-Ponty and Habermas are influenced by Piaget.
19. Habermas, J., *Communication and the Evolution of Society*, trans. by T. McCarthy, Boston. 1979: p. 90. Instead of "generalisability", here we use "universalisability".
20. Habermas (1983): p. 41.
21. Cf. Ibid: p. 119.

22. Ibid: p. 68.
23. Ibid.
24. Ibid: p. 119.
25. Habermas, J., *Legitimation Crisis*, trans. by McCarthy, Boston. 1975: p. 159.
26. Habermas (1983): p. 116.
27. Tugendhat, E., *Der Wahrheitsbegriff bei Husserl und Heidegger*, Berlin. 1967: pp. 201-211.
28. Habermas (1975): p. 159.
29. Cf. Honneth, A., "Diskursethik auf implizites Gerechtigkeitskonzept" (Ms.) 1985: pp. 10-11.
30. Habermas, J., "Moral and Sittlichkeit. Treffen Hegels Einwände gegen Kant auch auf die Diskursethik zu?" (Ms.) 1985.
31. Kern, I., *Husserls Verhältnis zu Kant und zum Neokantianismus*, (Dissertation) Louvain, 1961: p. 386. Here we mainly base our understanding of Husserl's critique of Kantian ethical formalism on Kern's excellent reconstructive exposition.
32. FI 20 (1920): p. 258, quoted according to Kern (1961): p. 389.
33. Kern (1961): p. 392.
34. Ibid: p. 396.
35. Apel (1985): p.9.
36. Habermas, J., "A Reply to my Critics", in *Habermas: Critical Debates*, ed. by J. B. Thompson and D. Held, London. 1982: p. 275.
37. Taylor, C., "Sprache und Gesellschaft" (Ms.) 1985: p. 8ff.

現象學與溝通倫理

陳榮灼

現象學與溝通倫理同為當代西方哲學中之顯學，前者是「意識哲學」之中心，後者則是「語言哲學」之代表。本文企圖通過現象學與溝通倫理之對碰性比較來指出「意識哲學」與「語言哲學」兩種進路的相互補充關係。

本文基本上分成三部分：

首先，通過以胡塞爾與梅勞-龐蒂在現象學上的基本歧異作為對照，我們嘗試釐清阿培爾與哈巴馬斯之論爭底本質。

其次，我們是照胡賽爾對康德底形式主義倫理學的批評，發展出一對哈巴馬斯底溝通倫理的現象學式的批判。

在現代倫理學中有一基本問題，就是：肯定「生活世界」作為規範基礎之立場是否與道德自律之主張相衝突？在第三部分，本文嘗試展示由阿培爾和哈巴馬斯所發展出來的溝通倫理在什麼方式上可以為此問題提供一解答。

The Ontology of Particulars: A Critical Study in Strawson's Metaphysics

by

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In considering the contemporary discussions of the time honored problem of particular and universal, and in appreciating the ingenuity of the uniquely new approach to metaphysics, the analytical approach, the name of P.F. Strawson must stand out among equals. Strawson's treatment of the problem is not historical, any more than is it old-fashion speculative. The problem in the hand of Strawson is relatable, and indeed is related to modern logic and philosophy of language; and also in Strawson, the notions of particular and universal are brought to found on logico-linguistic facts. Moreover, Strawson's theory of particular and universal is in itself a respectable theory in analytical metaphysics in particular and metaphysics in general. The position he maintains is clearly distinguishable from classical realism, nominalism, and conceptualism; he has a unique contribution in this and other respects.

Our purpose is to present an exposition, with criticisms, of Strawson's theory of particular and universal. However, we cannot, due to physical limitations, set forth the exposition in entirety in the context here. To get around the limitations, the presentation here deals with Strawson's theory of particular only, and, as such, it is so designed that this paper can be read as a self-contained piece of work. Our exposition of Strawson's theory of universal will be delivered in the next issue of this publication.

1. The System of Particulars

Strawson does not give an essential definition of particulars; and it seems that no one could manage to do this without involving circularity, if particulars are considered to be what exist primarily. What we have from Strawson is a denotative definition and some occasional explanations. Thus "historical occurrences, material bodies, people and their shadows are all particulars; whereas qualities and properties, numbers and species are not."¹ The enumeration is far from being complete, but it serves at least for illustration. A more illuminating example of a particular can be given by this classification: A physical work of art, for instance, a painting, is a particular; while the painting as an aesthetical work of art is not, since it could be produced or reproduced into many copies.² By the same token, we would say that, for example, Tschaikovsky's *Sympathique* is *not* a particular, but the symphony, as conducted by so-and-so at a certain place and a certain time, is a particular.

With these illustrations, it would seem that particulars are primarily spatio-temporal

items; indeed they are. In one of his articles Strawson presents this notion quite clearly as he speaks of "the quite fundamental distinction between spatiotemporal particulars on the one hand and property-like or kind-like principles of grouping such particulars on the other."³ Though spatio-temporality is a necessary feature of particulars, it is not a sufficient condition that adequately defines particulars; for there are nonparticulars, namely, universals, like gold, which also have spatial distribution or temporal limits.⁴ Spatio-temporal items do not stand in isolation; they are uniquely related to every other to form a system—a unified spatio-temporal frame-work of particulars.

To say that particulars form a unified spatio-temporal system is to say at least two things. First, there is no particular which can be thought of as existing in isolation. In order to be thought of as existent, a particular must be either directly or indirectly related to the spatio-temporal system. In Strawson's words, "every particular either has its place in this system, or is of a kind the members of which cannot in general be identified except by reference to particulars of other kinds which have their place in it."⁵ From the fact that particulars must be spatially or temporally related to one another, we could draw an ontological formula: To be a particular is to be spatio-temporally characterizable. The formula as such is not given by Strawson himself, but is *suggested* by what he says in this connection.⁶ Secondly, insofar as particulars constitute a *unified* spatio-temporal system, it makes sense either to describe a thing as in a position in which another thing was at some time before, or to describe two things as in different positions at the same time.⁷

Strawson claims that we *cannot deny* that "each of us is, at any moment, in possession of such a framework,"⁸ and that there is no doubt that we have the idea of such a system. But, on what ground (or argument) does he uphold the doctrine? In *Individuals* he does not explicate the ground for the doctrine although he alludes to an argument for it, which however is not made explicit. To bring into focus the ground and the argument for the doctrine is what concerns us next.

Strawson's later work *The Bounds of Sense* is subtitled *An Essay on Kant's Critique of Pure Reason*, yet it is not simply another commentary on Kant's *Critique*; he expresses his own philosophical views through interpreting and reconstructing Kant's arguments, and he also unambiguously shows his indebtedness to Kant in building up his own philosophy. Though the work is seven years later than *Individuals*, Strawson seems to have had in mind the thoughts that were later embodied in *The Bounds of Sense*, insofar as there is a continuity of thought detectable in the two works. There is indeed no feeling of disparatedness in reading the two books together.

Strawson seems to be convinced of the main tenet of Kant's "Transcendental Aesthetic" though he does not express it in bare Kantian idiom. The central idea set forth in the "Transcendental Aesthetic" is the doctrine that space and time are forms of sensible intuition. Strawson understands the doctrine as the theory that "space and time are the fundamental systems of relations between particular items encountered in

experience.”⁹ But what does he mean by “fundamental”? There is no magic in the word ‘fundamental’. To say that space and time are fundamental systems of relations between particular items encountered in experience is to say that such items are necessarily incorporated in these systems; or what amounts to the same, that the spatio-temporal relations between such particular items are logically prior to any other relations they may have. Arguing for the logical priority of the spatiotemporal relations between particular items in experience on an epistemological basis has been an achievement of the “Transcendental Aesthetic.” Now what Strawson is doing is to summarize the doctrine and its implications in a condensed form, ridding it of Kant’s idioms of faculty psychology and shifting from an epistemological form to a more logical form of expression.

Another Kantian element Strawson defends and adopts in his own philosophy is the doctrine of the uniqueness and comprehensiveness of space.¹⁰ Obviously the uniqueness of physical space would imply its comprehensiveness. For if there is just one space, then *all* spatially related items must be in that space and not elsewhere. Kant says that “space is essentially one,” and “if we speak of diverse spaces, we mean thereby only parts of one and the same unique space.”¹¹ Here we have Strawson interpreting the oneness of space in this way: “To say that there is only one space is to say at least that every spatially related object is partially related to every other object.”¹² Although Strawson offers this as an interpretation of Kant, it is to a considerable extent a statement of his own position. According to the statement, every physical body is such that it has a spatial relation to every other. This being so, the spatial relation must be all-pervasive, that is, holding between *any* pair of physical bodies. If a system of physical bodies is constituted, there can be just one such system.

Time receives a treatment parallel to that of space, except that time is even more comprehensive in that it embraces not only physical bodies but also states of consciousness. Echoing Kant, Strawson says,

Now it seems true that we do have such a conception of physical space, and it also seems true that, even without the limitation implied by the word ‘physical’ we have a similar conception of time. Of any actual item that stands in temporal relation to any other we think that it stands in temporal relations to every other such item.¹³

Now, it is possible to join space and time together to form the idea of a space-time system. Space is conceived by Kant as the form of outer sense, and time as the form of inner sense. (How the distinction between “outer” and “inner” is made, does not matter here.) He also maintains that whatever is perceived through outer sense must go through inner sense, or in other words, whatever is in space must also be in time, though not vice versa. Strawson specifies what are in space and time, and what are in time alone, to wit, physical bodies and states of consciousness, respectively.¹⁴ His use

of the expression 'particular items encountered in experience' is meant to include both states of consciousness and material bodies. For these items we have the conception of a spatio-temporal system. Strawson declares, "We have . . . the conception of a single spatio-temporal system embracing everything that happens and everything that physically exists."¹⁵ So much for Strawson's Kantian attachment.

Does Strawson have his own argument for the doctrine of a single unified spatio-temporal system of particulars? The answer is positive, but some effort is needed to formulate it into "visible" shape. Strawson's argument could be characterized as an argument of the transcendental type from the identificatory function of language. Transcendental argumentation originated with Kant, whose *Critique of Pure Reason* an exercise and good example of this type of argument. The purpose of transcendental argument is to explain how a given fact or theory is possible by formulating or stipulating or uncovering the assumption (s) presupposed. It is also a kind of regressive argumentation in that it proceeds from the conclusion, that is, the given fact or theory, to the premise, that is, the presupposition of the fact or theory. For a typically Kantian transcendental argument, the given fact has to be experience in general, and the presupposition discovered has to be certain a priori concepts. But it is possible to abstract the general format of Kant's arguments which are then taken as exemplifications of the form of argumentation.

Strawson's argument for the doctrine of a spatio-temporal system can be delineated as follows: It is a fact that we are able to identify particulars in ordinary discourse by means of language. If the successful identification of particulars is to be possible at all, it is necessary (though not sufficient) that we operate with a conceptual scheme of a single unified spatio-temporal system of particulars.

Strawson begins with considerations of actual speech confrontation in which some particular thing, or event, or person is the topic of discourse. The speaker makes an identifying reference to the particular by means of such linguistic expressions as proper names, pronouns, or definite descriptions. Yet this does not guarantee that the hearer would know or identify the particular being talked about. In many cases, it is sufficient for the hearer to be able to identify the particular by locating the particular in the present situation. This is what Strawson calls demonstrative identification of particulars. In these cases, the use of demonstratives is entirely context-dependent; its success relies on a condition that the particular being referred to is distinctly perceived now or not long ago. But, it is plain that demonstrative identification is not always practically possible. In cases where this type of identification cannot be performed, the conversers must rely on uniquely referring descriptions or names to identify the particular, or in other words, the conversers must rely on the non-demonstrative identificatory function of language to carry on the discourse. As far as this non-demonstrative function is concerned, Strawson thinks that unique descriptions are more useful than names, for the reason that a name could not do the job "unless one knows who or what is referred

to by the use of the name," and hence "a name is worthless without a backing of descriptions."¹⁶ This implies that unique descriptions are the basic, though not the only, means of non-demonstrative identifications.

The success of non-demonstrative identifications requires that there is one and only one particular answering the description. The possibility of nondemonstrative identifications lies in the possibility of satisfying, at least theoretically, the requirement of uniqueness. The theoretical solution of the problem consists in this, that "non-demonstrative identification may rest securely upon demonstrative identification."¹⁷

A non-demonstrative identification, be it unique description or proper name, may suffer a high probability of failure, for the identifying description by itself does not guarantee that there is just one and only one object to which it applies. Hence, if there is no way to meet the uniqueness requirement, nondemonstrative identifications would become impossible. According to Strawson, this difficulty of non-demonstrative identifications is simply a theoretical one, which does not *in fact* nullify their function in practice. For it is a fact that we do successfully identify (non-demonstratively) particular objects in actual practices. So, the problem is how non-demonstrative identification is possible, but not whether it is possible.

Though it is impossible to demonstratively identify a historically or geographically remote particular, it is possible to identify it by an identifying description "which relates it uniquely to another particular which can be demonstratively identified."¹⁸ This amounts to saying that non-demonstrative identification of a particular may "finally" reach down, through a process of mediating descriptions, to a demonstrative identification of a particular which is sensibly present. The idea involved here is the supposition that "of every particular we may refer to there is some description *uniquely relating* it to the participants in, or the immediate setting of, the conversation in which the reference is made."¹⁹ To put the idea in linguistic terms, we might say, it must be possible to ultimately replace 'there' and 'then' by 'here' and 'now'.

To illustrate how the idea of unique relation between particulars solves the difficulty of nondemonstrative identification, we may consider an example. A speaker may make an utterance about "the town" which had a fire. Largely dependent on the context in which the conversation takes place, the hearer usually manages to understand which particular town is being talked about. However, since there may be many places answering to the description, it cannot, theoretically, satisfy the requirement of unique application which the speaker intends his utterance to meet. However, if it is possible for the speaker to supply a description relating the town to himself or the hearer, such as "The town which is one hundred miles north of us", the description 'the town' will have a warrant of unique application insofar as the relation, as described, the town has to him is unique, that is, the relation does not hold between him and any other town.

If between any two particulars there is a unique relation, then, for any particular, there are unique relations holding between it and every other particular, and, consequently, all identifiable particulars must be incorporated in a system. Thus Strawson

says,

For all particulars in space and time it is not only plausible to claim, *it is necessary to admit*, that there is just such a system: the system of spatial and temporal relations, in which every particular is uniquely related to every other.²⁰

It is obvious that, without a system of unique relations between particulars, it is not possible to relate uniquely a historically or geographically remote particular to a sensibly present one. The system of relations between particulars is thus seen to be a necessary condition of the possibility of non-demonstrative identifications, that is, the possibility of the unique applicability of identifying descriptions. Strawson remarks,

All that is formally required is a kind of relation such that, given an already identified object, 0, it is possible for us to know that there is, in fact, only one thing answering to a certain description which is related by that relation to 0.²¹

However, what this transcendental argument fails to do is to establish at the same time that the unique relations between particulars are spatio-temporal relations. In fact, Strawson is aware of the limitation of the argument. His remedy for it shows again his reliance on Kant. Among other possible kinds of relations, "the system of spatio-temporal relations has a peculiar comprehensiveness and pervasiveness, which qualify it uniquely to serve as the framework."²²

Although commentators often fail to pay due attention to the force of the idea of a spatio-temporal system, the doctrine of the spatio-temporal *system* of particulars is the core of Strawson's metaphysics. Insofar as the aim of this descriptive metaphysics is concerned, the idea of a spatio-temporal system is what Strawson endeavors to present. Thus he remarks, "There is no doubt that we have the idea of a single spatio-temporal system of material things . . . There is no doubt at all that this *is* our conceptual scheme."²³

The idea of a spatio-temporal system not only warrants the possibility of particular-identifications, but is also the basis for the beliefs in the existence of the external world and the ontological priority of material bodies. Again, Strawson offers a transcendental argument for the existence of the external world, represented as follows. There are different occasions in which we make identifying references to particulars. These different occasions would appear as different and independent referential frameworks if there were no way of incorporating them into a larger context, to wit, the unified spatio-temporal scheme. "We cannot attach one occasion to another unless, from occasion to occasion, we can *reidentify* elements common to different occasions."²⁴ It is, therefore, necessary that we should be able to reidentify particular

if we can use the spatio-temporal scheme. To say that we can reidentify particulars involves saying that we have effective methods, or criteria, of recognizing a particular perceived on different occasions as the same, i.e., as having an identity. If it makes sense to talk of particular-identity, that is, if we have satisfactory methods of reidentification, then we have reason to believe in the continuity of the existence of particulars not being perceived.

Strawson's purpose in constructing the argument concerning the use of a spatio-temporal scheme for the reidentification of particulars seems to be dual: He means to give a complete answer to skepticism about the external world, and what is more subtle, he avoids the possibility of the collapse of his ontology into unintended idealism. For, as soon as the system is claimed to be *our conceptual scheme*, the spatio-temporal items in the system would seem naturally to turn "inward," to become our ideas. Strawson does not wish to see an idealism of this kind lurking in the doctrine; he is inclined to assume some form of realism as he claims that "our ontology comprises objective particulars."²⁵ To secure his realistic position, and to confer meaning to the notion of *objective* particulars, he sets out to argue that particulars in that public system exist independently of our perception. The argument, beginning with considerations of the conditions of our use of the spatio-temporal system, arrives at a theory of particular-reidentification, which then provides a firm ground for the belief in the existence of the external world.²⁶

2. The Notion of Basicness

Strawson's doctrine of basic particulars is another key note of his descriptive metaphysics. The doctrine comprises the central idea that material bodies are the basic particulars. In brief, the notion of basicness is understood in terms of identifiability-independence.

As above mentioned, the theoretical foundation of the possibility of non-demonstrative identification lies with the demonstrative identification of particulars. Strawson says, "Non-demonstrative identification may rest securely and ultimately upon demonstrative identification."²⁷ This, besides requiring a network of inter-related particulars as background, involves the idea of the *dependence* of some particulars upon others in regard to identification. The relation of identification-dependence is not limited to mediating between demonstrative and non-demonstrative identification; the relation also holds between non-demonstrative identifications, a particular which is non-demonstratively identified may be described (identified) in terms of another particular which is also non-demonstratively identified.

However, the relations of identification-dependence must have an end; for otherwise there would be an infinite regress of such relations. There must be some kind of particulars which in principle can be identified without any further reference to other particulars. In other words, there must be some kind of particulars which possess identifiability-independence. The concept of identifiability-independence (and dependence) is construed as follows:

There is a type of particulars, β , such that particulars of type β cannot be identified without reference to particulars of another type, α , whereas particulars of type α can be identified without reference to particulars of type β .²⁸

Then, it is said, particulars of type α are independent, while particulars of type β are dependent, with respect to their identifiability, and, as such, α -particulars are also said to be ontologically prior to β -particulars.²⁹ In Strawson's thesis about identifiability-independence (and dependence) there is a confusion. He says,

Then it would be a general characteristic of our scheme, that the ability to talk about β -particulars at all was dependent on the ability to talk about α -particulars, but not vice versa. This fact could reasonably be expressed by saying that in our scheme α -particulars were ontologically prior to β -particulars, or were more fundamental or more basic than they.³⁰

The confusion consists in his failing to distinguish between the concept of identification and that of identifiability, and, consequently, failing to make clear the transition from identification-independence to identifiability-independence, any, from considerations about linguistic matters to considerations about ontological matters.

The concept of identification is drawn from observations of linguistic matters; it is primarily a semiotic concept in Strawson's context. Talk of particular identification is talk of a speaker's or a hearer's identification of particulars. It directly concerns language and linguistic behavior. Due to its nature as such, the concept cannot warrant any claim about ontological status of particular. For example, from the identifying description "The house that John Doe lives in," one cannot infer anything about the ontological status of the house compared with that of John Doe although the identification of the house is made dependent on the identification of John Doe. The reason is simple enough. There are other circumstances in which the direction of identification-dependence is reversed, as this, "John Doe, who is the person living in that house" The identification-dependence (and independence) of a certain particular upon another particular is in many cases contingent upon the speaker's or the hearer's relevant knowledge, or the actual linguistic situation, or both. It follows that the identification-independence (and dependence) of particulars is not directly or necessarily revelant to the particulars ontological priority or posteriority. The

mere fact that α -particular's being identified without reference to β -particular, does not prove that α -particulars are ontologically prior to β -particulars.

The concept of identifiability, is an epistemic-ontological concept. It is about the nature or disposition of particulars. As Strawson himself often remarks, a particular must be in the spatiotemporal system if it is to be identifiable at all. His position might be expressed as the biconditional: A particular is identifiable if, and only if, it is localizable in the spatio-temporal system. Some particulars can be localized in the system directly or demonstratively, while some particulars can only be localized in the system through the mediation of other particulars. So, the concept of identifiability-independence (and dependence) should be properly expressed in this way: It is *characteristic of the nature* of β -particulars, in respect to α -particulars, that, they cannot be identified *unless* identified with reference to α -particulars, whereas, it is *characteristic* of α -particulars that they can be identified without any reference to other particulars. Then, we say, α -particulars are independent and β -particulars are dependent with respect to their identifiability.

The difference between the concept of identification-independence (and dependence) and that of identifiability-independence (and dependence) is very delicate. We say that the one is a semiotic concept while the other is an epistemic-ontological concept. The two concepts belong to different logical types. We may also characterize the contrast of the two concepts by the contrast between an episodic and a dispositional concept, to use Ryle's terminology.³¹

The episodic concept of identification is concerned with *incidences* of a particular's being identified independently (and dependently) on occasions. For instance, within a social circle or context we may successfully identify a particular dissertation proposal simply by the description 'the proposal' without references to persons or place and time. There are also incidences of the same particular's being identified dependently. Thus we may identifyingly refer to the dissertation proposal as "the proposal presented by John Doe at a certain time in a certain place." From these incidences we cannot validly infer either that the particular proposal is an independent particular or that it is a dependent particular in the sense as Strawson requires.

The dispositional concept of identifiability-independence (and dependence) is a concept about the nature of a kind of particulars. To say that a particular possesses identifiability-independence is to say that the particular by nature can be identifyingly referred to independently of any references to other particulars. To say that a particular does not possess identifiability-independence is to say that the particular by nature cannot be so identifyingly referred to. To make this point clear, let us compare the particular person John Doe with the particular John Doe's smile. On the one hand, the particular John Doe is such that we can identify him as *this* person, John Doe, regardless whether he is smiling or not. On the other hand, the particular John Doe's smile is such that we cannot identify it as *this* smile without the presence of John Doe (or his portrait). This is a contrast springing from the difference of

nature of the two particulars.

Strawson does not seem to be aware of the distinction we make between the concept of identification and the concept of identifiability. He begins his argument with considerations of particular-identification and innocently comes to a claim about the ontological status of some type of particular. B. A. O. Williams has criticised Strawson's argument, remarking that "the trouble is that he [Strawson] needs to establish some such connections [between basicness from the point of view of identification and reality]"³² Indeed, as Williams says, "it is not easy to make entirely precise the connection between Strawson's argument and questions of ontology."³³ These remarks suggest that Williams is dimly aware of the difference between the concepts of identification and identifiability although he does not seem to be able to locate exactly wherein the heart of "the trouble" lies.

Does our distinction represent an insurmountable gap between Strawson's argument and questions of ontology? It does represent a gap which, however, is not insurmountable. There is a way of establishing the connection which, as Williams points out, is in want in Strawson's account. The way of building up the needed connection consists in a suitable interpretation of the concept of identification-independence (and dependence).

The episodic concept of identification independence (and dependence) is that of the identification-independence (and dependence) of *a certain* particular that enters into *a specific* speaker-hearer confrontation. Talk of identification-independence (and dependence) is always relative to contexts. If the concept could be understood only in this way, there would be no hope of bridging the gap that Strawson appears to have left open; in other words, there could be no valid argument from the concept of identification-independence to the concept of identifiability-independence, which is the essence of the concept of basicness.

To bridge the gap is to solve the problem created by the contextual limitation of the episodic concept of identification-independence. This could be done by simply removing its contextual limitation: We attach a sense *in abstractio* to the concept to secure the desired result. In the abstracted or general sense of the concept, the identification-independence (and dependence) of a particular will not be limited to certain specified contexts of discourse. Thus, for example, when we talk of the identification-dependence of particular β upon particular a , we will be talking about its identification-dependence not on a certain occasion, but in general. Yet, strictly speaking, if we take the concept of identification-dependence (and independence) in this general sense, we should understand it as a relation between *types* of particulars rather than between individual particulars.

The above conception could be expressed in the following way: Suppose there are only two types of particulars, β and a , respectively, such that type β is identifyingly dependent while type a is identifyingly independent. Now according to the general concept of identification-dependence (and independence), we would say the following

thing: For any particular of the dependent type β , the identification of it necessarily *presupposes* the identification of at least one particular of the independent type a ; whereas, for any particular of the independent type a , there is at least one identification of it, which does not involve any identification of any particular of the type β .

The general concept of identification-dependence (and independence), formulated as such, can secure the desired result. For, according to the general concept, any member of the dependent type β would remain identifyingly dependent even if it could be in some contexts identifyingly referred to without any reference to other particulars, whereas a particular of the independent type a still possesses identifiability-independence although it is identifyingly referred to *on some occasions*.

From the above general concept of identification-independence (and dependence), we could easily move to the intended ontological concept of basicness of particulars. For the formulation of the concept is tantamount to ruling that, no particular of the dependent type β *can be identified*, unless there is at least one particular of the independent type a which can be identified; whereas particulars of the independent type a can be identified without such condition. Since the expression 'can be identified' means the same as the expression 'identifiable', our ruling virtually defines the dependence of type β upon type a with regard to their identifiability. Now, it would seem to be merely a matter of verbal definition to call particulars of type a , which entertains identifiability-independence in the sense defined, basic particulars.

Still there is something more to be discussed. This is Strawson's remark that basicness is equivalent to ontological priority.³⁴ The problem: Since "the meaning given to the term 'basic' is strictly in terms of particular-identification,"³⁵ what point is there in equating basicness with ontological priority?

The general concept of identification-independence (and dependence) is not merely a linguistic-semiotic concept; it is linked up with the ontological concept of identifiability-independence (and dependence). To say that it is an ontological concept is to say that it relates to the nature or character of things in general as regards their modes or conditions of existence. Now, with Strawson, we say that identifiability is not only a condition but a necessary condition of their existence.³⁶ To put it in another way, we would say that a necessary condition of things that exist is that they are identifiable. The concept of identifiability-independence (and dependence) is simply a further specification of the concept of identifiability. Then, it is obvious that being dependent in the relevant sense can be viewed as a further condition of the existence of some types of things (particulars) in that their identifiability generally and necessarily depends on the identifiability of another type of particulars. Conversely, being independent in the relevant sense can simply be understood as the exemption from such a condition. Since basicness is defined in terms of identifiability-independence, it would not be unnatural to define ontological priority in terms of basicness insofar as they are homogeneous, that is, belong to the same category.

3. Arguments about Material Bodies

The subsequent question would naturally be the question as to what kind of particulars are basic particulars in the spatio-temporal framework. Strawson's answer is that material bodies are basic particulars. This contention, together with his arguments, has invited many criticisms from various angles. In what follows we first outline strawson's arguments and then set up a discussion of them. On the basis of Strawson's text, we distinguish four arguments, and, for convenience's sake, give each a name.

1. **Deductive argument:** The framework which makes identifications of particulars possible is a single unified spatio-temporal framework. The framework is not something extraneous to its constituents. Therefore the constituents of the framework must be spatio-temporal items. These items must be *demonstratively* identifiable since they must be the bases on which non-demonstrative identifications of particulars rest. Material bodies are inherently spatio-temporal items; and they are demonstratively identifiable, that is, publicly observable. Therefore material bodies are basic particulars in the framework.³⁷

2. **Argument from presupposition of concepts:** There are certain kinds of particulars which *might* be candidates for the basic particulars, for instance, "private particulars" such as a pain, theoretical constructs such as an atom, or a labor strike. However, these particulars must be ruled out, for (1) references to private particulars always contain, *directly* or *indirectly*, an implicit reference to a particular person, that is, the possessor or bearer of the experience, 'the pain' is just a shorthand for the pain he or she or I am suffering';³⁸ and (2) references to those theoretical constructs ultimately depend on references to the grosser, simpler, observable objects, for example, the concept of a strike presupposes the concepts of men, tools, and factories. In addition, there are certain categories of particulars like *processes, states, conditions, and events* which might be considered. But they fail, too. For, "a large class of particular states and conditions, events and processes are conceived of as necessarily states and conditions of, or as performed or suffered by, particulars of other types, notably things which are or have material bodies."³⁹ For example, a birth is necessarily a birth of some creature, a growth is a growth of something (or some person).

3. **Argument from type homogeneity:** States and conditions, events and processes cannot be basic particulars; for they fail to constitute a type-homogenous, comprehensive referential framework, whereas material bodies do. For such a framework is a spatio-temporal framework, but "there was no rich complexity of time-taking things which were generally discriminable and similar related throughout the areas of space we are concerned with."⁴⁰

4. **Argument from reidentifiability:** "If material bodies are basic from the point of view of referential identification, they must also be basic from the point of view of

reidentification.”⁴¹ Other types of particulars such as processes, states, and so on cannot be reidentified without references to other particulars, predominantly material bodies and persons, therefore, these type of particulars cannot be basic from the point of view of identification.

Although there appear to be four arguments, there are in essence only two kinds of arguments. The deductive argument is to establish the status of material bodies, while the second, the third, and the fourth are arguments to *eliminate* other types of particulars from the basic type.

The goal of the arguments is obvious, but whether it is successfully attained is not indubitable to Strawson’s critics. B. A. Brody charges Strawson with having failed to advance “the features of physical objects that are necessary and sufficient for their playing the role that Strawson has assigned to them,”⁴² and J. O. Urmson doubts whether material bodies must be basic for identification.⁴³ These criticisms challenge the validity and the claim of the deductive argument.

Granted that material bodies are basic particulars, there still remains the question whether they *alone* are basic particulars. In this connection, Brody again argues that “physical objects seem to be only one of many enduring particulars that could serve as basic particulars for identification.”⁴⁴ The effect of Strawson’s eliminative argument is questioned. And, J. M. E. Moravcsik argues that Strawson could not make clear “what is to be excluded,”⁴⁵ thus he could not dismiss, for example, Quine’s notion of process-thing as a basic type of particular.

Let us consider the first argument, namely, the deductive argument. The premises are “a certain general feature of the conceptual scheme we possess,” and “the character of the available major categories;” and the conclusion is that “things which are, *or possess*, material bodies must be *the* basic particulars.”⁴⁶ Besides the fact that the argument is vague and ambiguous, it is certainly not valid, for the conclusion claims too much. In what follows we explicate the argument to clarify some of its vagueness and ambiguity and then show what the argument can prove and what it cannot prove.

The condition of the possibility of identifying references necessitates a framework of particulars of a special kind. The framework must be such as makes possible identifications of particulars. It thus must possess certain special features that satisfy the referential needs. For example, the framework must be comprehensive, unified, homogenous, and pervasive. Only a spatio-temporal framework can have these features. As the conception of identification develops, it soon comes into view that some independently identifiable particulars are necessary for the *constitution* of the kind of framework that answers the referential need. Hence the concept of basic particulars is required. Since the concept is demanded by the conception of identification and by the features of the framework, it must be so construed as to be able to fulfill these demands. Hence the fabrication of the concept must be cognate and appropriate to the special and general features of the framework. So, basic particulars proper to the framework have to be ingentially spatio-temporal particulars which are

publicly perceptible, possessing stability, cognizable and recognizable; in short, they must be able to constitute the required framework and be sensibly identifiable and reidentifiable. Now, Strawson could have stopped short here and made the indisputable conclusion: Publicly observable *spatiotemporal items* are *basic particulars* of the framework. This much is what the argument can secure.

However, Strawson has taken a step beyond the "safety zone" his argument can warrant when he claims that material bodies (and things possessing material bodies) are *the* basic particulars. There are many troubles with the claim. As Brody points out, the notion of material bodies is not well-defined. But still this is not serious, for Strawson may reasonably assume that material bodies are publicly observable, spatio-temporal items, and therefore, are basic particulars. The serious problem arises from the exclusiveness of the claim. Material bodies are publicly observable spatio-temporal items, but they are hardly alone. There are other categories of things which are also publicly observable and are spatio-temporal items, such as processes, conditions, events, states. For example, lightning, the coming of Spring, the darkness of the night are not private "thing"; and they are not outside the spatiotemporal framework either. Yet, they are not material bodies in an ordinary sense. Strawson's argument, together with the common notion of material bodies, cannot exclude these categories as candidates for the type of basic particulars. Strawson's conclusion that material bodies are *the* basic particulars is not validly drawn.

But, to be fair, we cannot ignore Strawson's effort to bridge the gap between the argument and the conclusion. We cannot dispose of that conclusion without considering the force of his eliminative arguments. If the eliminative arguments can successfully rule out all other categories, then material bodies may remain *the* basic particulars.

The second argument, that is, the argument from presupposition of concepts, has little force. For all it can establish is merely that "a large class" of particular states, conditions, and so on are dependent. We need not ask how large, for it is certainly not the whole class, and only a single exception can neutralize the effect of the argument.

The argument from type homogeneity is a contention more than an argument. For it fails to explain the nature of states, and fails to show that they cannot supply a type-homogeneous framework for reference. Strawson does not seem to be able to furnish a reply to the philosophers who conceive the world as a system of events and processes. Perhaps this is too big an issue between thing-ontology and event-ontology for Strawson to discuss in a limited context. But in so far as Strawson has not shown the impossibility of constructing a framework on the notion of event or process, his argument here is not forceful enough to eliminate the possibility of events, processes, states, or conditions being basic particulars.

The argument from reidentifiability suffers a serious defect: It is a tautological argument. For, according to Strawson's conception of identification and reidentifica-

tion, to say that something is independently identifiable implies saying that it is also independently reidentifiable, and to say that something is independently reidentifiable necessarily implies saying that it must be independently identifiable. Here is a logical equivalence. Then to argue from the proposition that events, processes, and so on cannot be independently reidentified to the proposition that they cannot be basic particulars, that is, cannot be independently identified, is analytically true. If so, nothing beyond the logical equivalence is proved.

From the above discussions, we can generally say that Strawson's eliminative arguments have failed fully to achieve what they are supposed to because of their *inconclusiveness*. Certainly they have blocked up most, if not all, of the major entrances against events, processes, and so on, but they also leave enough loopholes for those unintended particulars to join the race for basicness.

As a matter of fact, Strawson does not want to reserve the position of basic particulars for material bodies alone; he wants to include "things possessing material bodies" as basic particulars. What he attends to is the category of persons.⁴⁷ However, through producing the phrase "things possessing material bodies," he has inadvertently invited the argument that events, processes, and so on are "things possessing material bodies" and therefore are basic particulars. Of course, Strawson would rather say, and indeed he has said, that events, processes, *et cetera* are what material bodies undergo. But how could he suppress the argument that events, processes, *et cetera* are just the things possessing material bodies?

After all, do we mean that Strawson's arguments about material bodies totally collapse? Certainly we do not intend to be taken to mean that. What we mean is this: What Strawson has done concerning the status of material bodies is not sufficient and conclusive; what he can safely claim from his arguments is a more liberal proposition that inherently spatio-temporal items must be basic particulars in our conceptual scheme and material bodies are paradigm examples of such items. The proposition is more liberal in that it leave open the *possibility* that events, processes, *et cetera* might be basic particulars. Accepting this proposition does no harm to his metaphysics and puts him in a less vulnerable position. For, on the one hand, he can still maintain that material bodies (and persons too) are basic particulars; and moreover, he might strengthen the position by saying, for example, that he could only recognize one type of particular which is clearly of the basic type. And, on the other hand, he can leave the burden of proving other *non*-material bodies to be basic particulars with his opponents. These seem to be convincing reasons, logical as well as extralogical, for Strawson to accept the proposition we propose.

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NOTES

1. P. F. Strawson, *Individuals* (London: Methuen & Co., 1959), p. 15.
2. *Ibid.*, p. 231: note. The distinction between a physical work of art and an aesthetic work of art is due to Stephen Pepper. Strawson himself did not clearly make the distinction, but he did have a vague idea of it.
3. Strawson, "Singular Terms and Predication," original in *The Journal of Philosophy* LVIII (1961), reprinted in the author's *Logico-Linguistic Papers* (London: Methuen, 1971), p. 73
4. Strawson, "Particular and General," original in *Proceedings of the Aristotelian Society* (1953-54), reprinted in *Logico-Linguistic Papers*, p. 51.
5. Strawson, *Individuals*, p. 25.
6. *Ibid.*, pp. 28-29.
7. *Ibid.*, p. 31.
8. *Ibid.*, p. 24.
9. P. F. Strawson, *The Bounds of Sense* (London: Methuen, 1966), p. 60.
10. We are here concerned only with space, but the same could be said of time.
11. Immanuel Kant, *Critique of Pure Reason*, trans. by N. K. Smith (London: Macmillan & Co., First ed.; 1929; reprinted ed., 1970), B39.
12. Strawson, *The Bounds of Sense*, p. 63.
13. *Ibid.*, pp. 63-64.
14. Strawson adopts Kant's thesis that states of consciousness are in time but not in space. The thesis is the key to Strawson's concept of person as in contradistinction to the concept of material bodies. Since his philosophy of mind is not our immediate concern, it will not be discussed. For reference, see *The Bounds of Sense*, p. 69; and *Individuals*, chpt. 3.
15. Strawson, *The Bounds of Sense*, p. 64.
16. Strawson, *Individuals*, p. 20.
17. *Ibid.*, p. 22.
18. Strawson, *Individuals*, p. 21.
19. *Ibid.*, p. 22 (italics mine).
20. *Ibid.*, p. 22 (italics mine).
21. *Ibid.*, p. 25.
22. *Ibid.*, p. 25.

22. Ibid.
23. Ibid., p. 35.
24. Ibid., p. 32.
25. Ibid., p. 15.
26. It is worthwhile to note that, the move from particular-reidentification through particular-identity to the independent existence of particular, is a move from logico-linguistic level through epistemological path to a metaphysical belief. This kind of movement is characteristic of many arguments of Strawson's, reflecting the character of his philosophy.
27. See *Individuals*, p. 22.
28. Ibid., p. 17
29. See Ibid.
30. Ibid., p. 17.
31. See Gilbert Ryle, *The Concept of Mind* (New York: Barnes & Noble, Inc., 1949; Chapter 5. Although we use Ryle's distinction, we are not entirely bound by his analysis of episodic words and dispositional word.
32. B. A. O. Williams, "Mr. Strawson on individuals," *Philosophy* XXXVI (October, 1961): 322.
33. Ibid., p. 321.
34. Strawson, *Individuals*, p. 59.
35. See Ibid., p. 16.
37. For the argument, see Strawson, *Individuals*, pp. 39-40.
38. Whether there are 'private particulars', in what sense they are private, and whether they must have an owner, are problems properly discussed in the philosophy of mind. Strawson is obviously in "Ownership" theorist. Here it is not relevant to discuss these problems.
39. Strawson, *Individuals*, p. 52 (Italics mine). For the whole argument, see Ibid., pp. 41-52.
40. Ibid., p. 54.
41. Ibid., p. 55.
42. B. A. Brody, "On the Ontological Priority of Physical Objects," *Nous* V, 2 (May, 1971): 146
43. See J. O. Urmson, "Critical Notes on *Individuals*," *Mind* (April, 1961): 259-60.
44. Brody, "Ontological Priority," p. 148.
45. J. M. E. Moravcsik, "Strawson and Ontological Priority," in *Analytical Philosophy*, second series, ed. R. J. Butler (Oxford: Basil Blackwell, 1965), p. 112.
46. Strawson, *Individuals*, p. 39 (italics mine).
47. This involves a big issue in the philosophy of mind. For one might maintain that persons are material bodies, and not "things possessing material bodies," Here, we cannot engage ourselves with this problem. In either case, persons are for Strawson basic particulars, for, it is generally accepted that persons are either material bodies or things possessing such bodies.

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