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**THE GROWTH VISTA\***

by

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## CHAPTER 6

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## **INTRODUCTION**

In Part I we classified growth and development literature into four major approaches--historical, institutional, planning, theoretical--and these were reviewed and evaluated in previous chapters. In these surveys, it was shown that the historical approach offers a holistic framework for identifying the broad facets of growth and that each of the other approaches focusses upon particular facets covered in the historical perspective. The institutional approach views development as a process of improving the quality of human agents, while both the planning and theoretical approaches view development in terms of the functions which economic agents must perform. We have hinted that each school reviewed bears some relevance to the development of our approach. Hence, our approach may be construed to be a synthesis of the contributions made by each of the approaches surveyed. These origins will be more explicitly acknowledged as they are worked into our synthesis in this part (Part II) of our book.

The four-pronged review undertaken in Part I serves to emphasize the complexity of the growth phenomenon in less-developed countries. The very evolution of four alternative and unique growth approaches underscores the fact that growth is a multi-dimensional process

of social change. In view of this complexity, a central growth vista (i. e., viewpoint) is needed as a point of departure to enable us to identify the most essential growth phenomena to be studied. The primary purpose of this chapter is to present our own growth vista. From the particular vantage point thus provided, the wide range of social phenomena comprising development can be approached selectively and judged to be relevant or irrelevant to our inquiry.

The presentation of one's growth vista and its application for identifying the essential growth phenomena falling within one's purview are preliminary research steps. They are essential for evolving a growth philosophy which, in turn, provides guidance for the eventual formulation of growth theory. Specifically, the growth vista assists in choice of analytical facets and selection of methods suitable for investigation of these facets of growth. Thus, a major purpose of this chapter is to derive heuristic guidance for the organization of the remainder of this book. The issues discussed in the following chapters evolve naturally from the growth vista sketched in the present chapter.

In Chapter 1 we pointed out that our approach is unique in two regards. Unlike the universal scope of some contemporary growth theory, the scope of our study is limited in its focus. First, the study is limited to the growth process in a particular type of economy, the open, dualistic

economy. Our open, dualistic economy focus implies the task of investigating the operational significance of both "openness" and "dualism" in the context of growth--a task we begin in the next chapter (Chapter 7). We secondly limit our scope by concentrating our analysis upon a specific historical phenomenon, the transitional growth experience of the postwar generation. This sharp delimitation of our subject matter, in both content and time span, is derived from our vision of contemporary growth in less-developed countries as a transition process between two major growth epochs. In this chapter we begin to investigate the operational significance of transition growth, a subject which occupies much of Part II. In short, the growth vista which we present in this chapter is a natural outgrowth of the two major features of our study, one typological and the other historical. As we have argued (in Chapter 1), this choice of subject represents a practical compromise between two alternative, but equally untenable, positions, one universal in scope and the other treating each experience found in reality as a unique case study.

We shall refer to the postwar growth experience of the Philippines, Thailand, and Taiwan as transition growth of open, dualistic economies. In Section 1 of the present chapter, we investigate the time aspect of transition growth, both from a historical perspective and a

viewpoint internal to the transition period. In Section 2 we identify the essential growth phenomena upon which our study of the transition will focus, and we introduce an evolutionary growth hypothesis as the one most pertinent for investigating these growth phenomena. We show that an evolutionary view of transitional growth emphasizes interrelated changes in the economy's form or structure, its mode of operation, and the quantity and quality of resources available to the society.

In the following chapters in Part II we proceed to add analytical content to the growth vista expounded in the present chapter. In Chapter 7 we undertake the first formal discussion of the open, dualistic economy, the particular growth type upon which our study focusses. Specifically, we show in that chapter how the properties of "openness" and "dualism" can be defined in terms of our evolutionary growth hypothesis. A national income accounting framework is accepted for this purpose, and its significance for investigating the economy's structural form is examined in some detail. We also show how analysis of the economy's mode of operation is intimately related to the method we use to portray structural form.

In Chapter 8 we develop more fully the analysis of the economy's mode of operation, emphasizing that its growth significance lies in the intersectoral relationships through which the entire economy functions.

The intersectoral operation of the open, dualistic economy is analyzed in terms of its bearing upon three key ingredients of growth: resources, markets, and technology. In that chapter we also move toward synthesizing the various strains of thought presented in this part of our book. Specifically, we place the evolutionary aspects of transitional growth in an explicit time perspective. This involves analysis of the alterations in the economy's mode of operation and the sequential order in which these fundamental changes occur. The key ingredients of growth are integrated into this analysis of the time pattern of changes in the economy's mode of operation. Chapter 8, therefore, comprises an introduction to the evolutionary theory of transitional growth to be elaborated in Part III.

#### 1. THE TIME PERSPECTIVE

From a long-run historical perspective, the growth experience of contemporary less-developed countries unfolding during our generation is a unique historical experience. The uniqueness of this experience has to do with both its origin (or source) and its direction (destination). From the viewpoint of origin, we are witnessing the disintegration of a colonial growth epoch, an epoch created by the penetration of Western

political and technological influence and extending over several centuries in the history of less-developed countries.<sup>1</sup> From the viewpoint of direction, this experience leads toward entry of these societies into a new epoch, the epoch of modern economic growth. From the experience of economically advanced countries, we are led to believe that this epoch, once established, may endure for several centuries. Thus, economic growth in less-developed countries in the middle of the twentieth century is viewed as a process of transitional growth between two long epochs, beginning with the termination of the colonial epoch's enclave growth system and ushering in a new epoch of modern economic growth under the aegis of economic nationalism. In the remainder of this book we shall refer to this particular type of growth experience as the transition process.

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<sup>1</sup>We believe all contemporary less-developed countries to have shared the economic experience of the colonial epoch. Where formal political independence was preserved (as in Thailand and Liberia), Western penetration was adequate to produce the economic manifestations of the colonial epochs. (The case of Thailand is discussed from this viewpoint in Chapter 8.) A purpose of the present chapter is to elaborate the growth relevance of the economic manifestations.

## 1.1 THE COMPLEXITY OF THE TRANSITION PROCESS

The recognition of contemporary growth experience in less-developed countries as a transition process is a major lesson distilled from our review of the historical approach to growth (Chapter 2). This historical vision offers a holistic perspective of the transition process. In accepting a holistic perspective, we are forced to view contemporary growth as an extremely complex phenomenon, involving many dimensions of change. In particular, transitional growth stands out as a substantially different, and more intricate, process than growth within a particular growth epoch in which the rules of growth remain stable. The concept of "transition," in fact, connotes that these fundamental rules of growth are in the process of change. In terms of specific content, the economy's resources are, indeed, involved in this process of change, the aspect emphasized by the planning school (as we have seen in Chapter 4). However, resource changes are but a small part of the story. Fundamental changes also occur in the economy's operational principles, adding new and quite different dimensions to analysis of the transition process. The challenge posed by the transitional growth problem is designing an analytical framework capable of embracing all the crucial aspects of change, resource-related as well as those involving the economy's mode of operation.

## The Colonial Background

The colonial background is important to understanding the transition process since colonialism is the epoch from which the transition is launched. The transition experience is linked with this four ~~tion~~, and it is the system of enclave growth under colonialism which must be remolded to provide the basis for modern economic growth. In Chapter 2 we referred to the necessity for an economic "decolonization process," defined as the erosion of the colonial type growth-promotion forces and their gradual replacement by new growth-promotion forces. Thus, to understand transition growth, we must begin by reviewing the basic characteristics of the colonial epoch as we have portrayed them in Chapter 2. The major growth-promotion forces of colonialism were found to operate in the enclave sector, intimately tied up with foreign trade. Behind this growth pattern lay four essential economic characteristics of the colonial epoch; namely, dualism, compartmentalization, external orientation, and perpetuation of traditionalism in the agricultural sector.

Colonial enclave-type growth implied an economy with a dualistic structure, comprising the economic enclave, on the one hand, and the large, traditional agricultural sector, on the other. The

remaining properties of colonialism were operational in nature, reflecting this basic dualism. In the enclave, growth-promotion forces were externally oriented, and these forces were commercial. Growth responded to fluctuation in export demand, and the response to these forces was the prerogative of foreign agents whose outlook was external. Exports had a relatively narrow production basis, concentrated upon a few raw material-specific and/or labor-specific commodities. The externally-oriented enclave was relatively insulated from the rest of the economy, leading to compartmentalized growth. Enclave activities involved only a small part of the economy's population, and the growth-promotion forces in the enclave had little impact upon the traditional agricultural sector. We have shown in Chapter 2 how the colonial economic system impeded the transmission of technological change from the enclave to the traditional agricultural sector. Agriculture, therefore, continued to be influenced predominantly by the slow-growth mechanism of agrarian-mercantilism.<sup>2</sup> This growth phenomenon, along with the cultural and sociological overtones of colonialism,<sup>3</sup> served to perpetuate

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<sup>2</sup>Analyzed in detail in Chapter 2.

<sup>3</sup>Discussed in Chapter 3.

agricultural traditionalism in all of its ramifications, leading to a continuation of general stagnation in the economy as a whole.

### Requirements for Modern Economic Growth

With these major characteristics of the colonial epoch in mind, we can readily see that a transition to the modern growth epoch involves a complete reversal of the economy's mode of operation--almost the complete antithesis of the colonial epoch's major characteristics. This process begins with internally oriented industrialization, contrasting to the external, commercial orientation of the colonial enclave. Eventual extension of modernization of production to agriculture occurs through integrated growth of both sectors in lieu of the compartmentalized nature of colonial growth. This process of integration will gradually overcome the traditional stagnation of agriculture, as productivity increases become routine. In this way, stagnation is overcome as the country achieves economy-wide application of modern knowledge to production--the essence of modern economic growth. Indeed, these characteristics, which may be summarized as internally oriented industrialization, economic integration, agricultural modernization, and widespread innovation, together comprise the essence of modern economic growth. Through these, the economy

evolves a new mode of operation, and the task of transition analysis is precisely to investigate how these fundamental changes come about.

The importance of integration of the economy during the transition is obviously critical in view of the colonial economy's insulation of the traditional economy from the enclave. The operational significance of this observation is that intersectoral economic relationships (e.g., among the industrial, agricultural, and export sectors) are central to analysis of transition growth. In effect, the transition process is a gradual modification in the economy's pattern of intersectoral flows involving knowledge, technology, savings, capital, and human agents, both labor and entrepreneurs. In Chapter 7 we turn to a systematic examination of an intersectoral approach to the transition process.

## 1.2 THE GENERATION TIME HORIZON

In our review of the historical approach in Chapter 2, we pointed out that the study of the transition between growth epochs calls for a unique type of analysis, different from that applied to growth within an epoch. Behind this conclusion lies our conception of the transition as a phenomenon overlapping two successive epochs. This notion was pictured abstractly in Diagram 4 of Chapter 2 where the overlapping of two epochs during transition is shown as a certain horizontal length on the time

axis. This view of the transition immediately raises the question of the duration of the transition. If the transition is to be a meaningful concept, it must be conceived of as a period of time significantly shorter than an epoch, the latter measured in terms of centuries--say, 100 to 300 years.<sup>4</sup> For the transition is a period during which a concentrated process of cumulative change occurs, adequate to change irreversibly the society's basic rules of growth. From these considerations we are led to place tentatively an upper limit on the duration of the transition as approximately 70 years.

We are forced to rely mainly on our intuition since little empirical research has been done to shed light on this problem of duration of the transition. One obvious reason is that there are as yet few, if any, countries with a fully recorded transition from a properly defined colonial epoch to a modern growth epoch. Japan's case is somewhat relevant, however, since Japan completed a transition from a mercantile-agrarian epoch to a modern growth epoch, largely by adopting innovations created by her more advanced contemporaries. Since less-developed countries share this advantage, Japan's experience may

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<sup>4</sup>Kuznets describes epochs as extending "well over a century." Simon Kuznets, Modern Economic Growth, p. 2.

provide us with some clues. Though there is likely to be considerable disagreement on periodization from actual experience, we merely mention that the Japanese transition appears to us to have lasted some 50 years (1870-1920).

We may accept as a hypothesis, therefore, that the duration of a contemporary transition is at least 30 years and its maximum length may be as long as 70 years. While it must be frankly stated that the duration of the transition from a colonial to a modern growth epoch is a matter of conjecture, we find it useful to adopt such a preliminary, though rough, time perspective.<sup>5</sup>

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<sup>5</sup>This does not appear to be inconsistent with Kuznets' speculation on the duration of periods of transition to modern economic growth. Given the paucity of material on this subject, we quote Kuznets as follows:

"With this specification of what modern economic growth is, it becomes possible, given the data, to place its beginning in the various countries in which modern economic growth occurred. The date of inception need not be a year, or even a quinquennium; it may be a band of some width, but still narrow enough to permit us to say that the two or three decades following it are the early phases of modern economic growth and the two or three decades prior to it are the ones directly preceding the beginning of modern economic growth in the country--without missing much in between. If, then, we consider it important to study just the early decades of modern economic growth, and/or those immediately preceding it, in the hope of finding characteristics and relations that would permit us to construct an adequate theoretical scheme, we may want to call the first two or three decades following the initiation of modern economic growth the 'early growth phase' and the two or three decades preceding it the 'late pre-modern phase.'" Simon Kuznets, "Notes on the Take-Off," in Walt W. Rostow, The Economics of Take-Off into Sustained Growth (London: Macmillan and Co., 1963), p. 42.

Fortunately, more precise specification of duration of the transition is not crucial for the task we undertake in this book. A specific time dimension is essential, however, for any study of growth phenomena. Significant events in a growth process can only be defined in relation to a specific time focus. Some events essential to transition, for example, a revolution in a society's total education process, may be significant in terms of a 30-year perspective but hardly discernible in a five-year horizon. Other events, for example, the formulation of a five-year plan, may be highly significant from the short-run viewpoint but peripheral in a longer time perspective. We are necessarily involved with the issue of a time span since the transition process occurs over time.

The specification of a specific time span for our transition analysis is constrained by one paramount historical fact frequently referred to earlier chapters; i. e., transitional growth has been occurring in a large number of contemporary less-developed countries during the generation since the end of World War II. Our natural time frame of reference, therefore, is the generation--or roughly two decades--of experience accumulated in the postwar period. We shall frequently refer to this specific time horizon which we have adopted for our analysis as the "generation view" or the "generation view of the transition." By this we mean the 20 years of postwar experience which we construe to be the first

20 years of penetration into the modern growth epoch, tentative though it may be, by many less-developed countries.

There are both practical and substantive justifications for focussing our analysis upon the generation time span. Pragmatically, we now find in many less-developed countries a record of their transitional growth experience during the postwar period. The availability of this stock of inductive evidence, often but not necessarily in terms of statistical data, is obviously an invaluable asset for the study of growth. Many of the ideas and theories surveyed in Part I are conjectural in nature, precisely because opportunities for testing them against facts were lacking. By way of example, we may mention the difficult area of the relationship between socio-cultural forces and growth phenomena. The very fact that a major empirical effort on this subject<sup>6</sup> could be made recently, but not earlier, attests to the necessity for at least minimum data, which have only recently become available. An observation of more general significance is that much of the theory surveyed in Part I was formulated without a specific time focus precisely because a challenge was not posed in these terms since inductive evidence was lacking.

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<sup>6</sup>Irma Adelman and Cynthia T. Morris, op. cit. See the discussion of this work in our Chapter 3.

If empirical corroboration of analysis of transitional growth is considered unimportant, of course, there is no necessity for choosing a particular time span. It is a fundamental purpose of this book, however, to demonstrate an empirical basis for our study of the transition process in open, dualistic economies. In our view, the time has come for formulating a theory of transition growth in such a way that it can be verified by observable and documented facts. For this reason we resort, in particular, to intensive statistical verification by data collected from the three countries comprising our empirical focus. Where possible, inductive evidence from other open, dualistic economies will also be used to provide a broader basis for supporting certain aspects of our analysis of the generation of transition growth.

Heuristically, the generation view also appears to be a particularly suitable one. This time horizon is not so long that it obliterates short-run changes which may be crucial transition growth phenomena but may be compressed into a concentrated sequence of events. Indeed, in a mere twenty-year period, profound modifications of an economy's production structure may occur--as witnessed by Russian experience between 1918 and 1938. Conversely, a span of 20 years is not too short to show phasing of events, which would be difficult to establish for a period substantially shorter than 20 years. It is also not so short a

period that events are likely to be dominated by short-run policy influences, which might happen in a very short-run time perspective.<sup>7</sup> In brief, there is considerable justification for selecting a time horizon of about 20 years' length. In summary, the choice of a generation view of the transition with a time span of approximately 20 years is based on the practical ground of availability of inductive evidence. However, what may appear at first glance as a rather arbitrary choice turns out to possess considerable analytical justification. For many contemporary less-developed countries, the postwar generation is indeed the first generation of transition. It is this time perspective which we incorporate into our growth vista.

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<sup>7</sup>This remark is partially intended to warn against a common difficulty experienced by development economists studying development processes in particular countries. Almost inevitably led to adopt a short-run viewpoint, their approach to growth reads like a narrative of headline policy issues; e.g., those concerned with balance of payments, banking, labor unions, inflation, unemployment, and five-year plans. Although the scope of such studies may cover a twenty-year period and the policy narratives may be subdivided into shorter periods, one finds little or no reference to the relationship between the short-run and a holistic view of the underlying growth process. We shall see in later chapters that the relationship among shorter-run phases in terms of a sequential and logical order is the essence of a process analysis approach to the twenty-year transition experience.

For reasons given earlier in this chapter, explicit emphasis on a particular time span, however, has little precedent in the conventional approaches to economic growth. The historical approach, of course, is conscious of the need for specifying the time perspective relevant for analysis--usually a relatively long-run horizon. The institutional and theoretical approaches generally abstract from the problem of historical time spans, rarely specifying a particular perspective. Although the planning school emphasizes time specificity, particularly in their dynamic models, the exactness of their time perspective refers to the future (for prescriptive purposes) with little or no reference to historical reality.

### 1.3 PHASING IN THE GENERATION TRANSITION PERSPECTIVE

The significance of the generation view of transitional growth may be explored from both an external and internal viewpoint. From the external vantage point, the generation of transition is viewed as embedded in the long-run growth spectrum, specifically linking the colonial growth epoch and the modern growth epoch. Thus conceived, the generation of transitional experience stands out as having a long-run historical mission; i. e., the transformation of the enclave, compartmentalized, externally oriented, and stagnant growth-promotion system of the colonial epoch into the innovative, industrialized, integrated, and dynamic process of modern

economic growth. From the internal viewpoint, the key analytical issue posed by the generation view revolves about the process through which this historical transformation occurs as it is experienced during the first 20 years of the transition.

We believe the issue of how this crucial process of transition growth comes about to be the most meaningful of all growth questions which may be raised for understanding growth as well as for policy purposes. During the transition process, the economy's mode of operation undergoes changes of the most fundamental kinds, as unfamiliar economic functions come to be discharged by new economic agents. This pervasive modification of the economy in all its essential details is governed by its internal forces and, thus, explicable only through the logic of an evolutionary process. Development policy must be rooted in an understanding of this evolution if policy is not to be ineffective and misleading. Unfortunately, the logic of an economy's evolution during an epochal transition is the most difficult of all growth issues in view of its intricacy and complexity. The design of our approach to this challenging issue is based on two preliminary steps, one addressed to the identification of distinct phases in the generation horizon and the other to the logical necessity of the sequential order of these phases. We introduce these important steps separately.

### Identification of Phases

As the transition process unfolds, transformation of the economy's mode of operation<sup>8</sup> does not occur smoothly. To depict the discontinuous nature of this evolutionary process, we employ the technique of dividing the twenty-year generation span into several phases. The length of these phases in empirical situations will be likely to vary considerably as we, indeed, observe in our later empirical chapters.<sup>9</sup> Hence, the number of phases occurring during a generation will also vary. Heuristically, we may think of an average of 3-5 phases as occurring in "normal" transition experience covering a generation--giving an average length of four to seven years for each phase. On the one hand, a genuinely evolutionary thesis requires that the number of phases not be too small in order to trace out a meaningful process of change. On the other hand, the number of phases within a generation must not be so numerous that the duration of each phase is too short (e.g., less than two years) for us to identify a distinct mode of operation for each phase. Our intuitive judgments, presented here, of course, reflect, and can only be evaluated in terms of, the analytical design they engender. These judgments appear, however, to be substantiated by both theoretical and inductive evidence in later chapters.

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<sup>8</sup>The reader is asked to accept an intuitive notion of the concept of "mode of operation" until it is formally defined and discussed in Section 2 of this chapter. This allows us to retain here our focus upon the time perspective aspect of our growth vista.

<sup>9</sup>See, in particular, Chapters 18-20.

A central attribute of each phase in the transition process is its uniqueness in terms of the economy's mode of operation. This uniqueness implies that we can describe each phase in terms of its fundamental growth characteristics. For example, we may conceive of phases of "import-substitution growth," "export-diversification growth," "agricultural-innovation based growth," "traditional export growth," "industrial diversification growth," and many other hypothetical possibilities. In terms of such phases, the transition process may be portrayed as successive shifts in the economy's dominant mode of operation.

This idea of unique growth phases in the transition in which a dominant "growth thrust" can be identified is, perhaps, not an unfamiliar idea.<sup>10</sup> In our view, however, such a dominant growth thrust, though superficially emanating from a particular sector (e. g., industry, agriculture, export), is typically diffused beyond the confines of that sector and becomes intersectoral in nature. Thus, a dominant mode of operation must be viewed and interpreted in terms of intersectoral

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<sup>10</sup>It is, however, difficult to present documented evidence to support this assertion. In part, the difficulty lies in the intrinsic vagueness of such notions as "dominant growth thrust" and "dominant mode of operation," which mean different things to different authors. We may, for example, mention Rostow's "leading sector" phenomenon as having some affinity to our transition phases. We again ask the indulgence of the reader in our present loose usage of the concept of "mode of operation" until it is defined more precisely in the next section.

relationships covering the entire economic system. Thus, intersectoral relationships are of prime importance inasmuch as alterations in the economy's mode of operation during the phases of the transition are definable only in intersectoral terms.

A phase in the generation view of the transition is thus conceived as a unique, but temporary, mode of operation with distinct intersectoral features associated with a particular type of growth thrust. It is for this reason that the number of phases cannot be too small or too large. Having accepted this vision of transition growth, an important first step in our research is to identify, in a systematic way, all the essential types of phases (i.e., the temporary modes of the economy's operation) that are likely to occur in the first generation of the transition. The feasibility of this task is greatly enhanced by the typology character of our approach to growth. Among the multitude of patterns of intersectoral relationships that might constitute a phase, our perspective limits us to those relevant to the open, dualistic economy. In Chapter 7 we shall investigate the structure of the open, dualistic economy, partly to provide the technical basis for identifying transition phases. Chapter 7 also prepares the groundwork for our theoretical analysis, which we now discuss in very preliminary fashion.

### The Evolutionary Logic of the Transition

In the generation view of the transition, we envisage a series of 3-5 phases following a definite sequential order. For example, during this 20 years of transition, the economy may begin with an "import substitution phase" of five or six years duration, then move on to an "export diversification phase" lasting seven years, and finally embark upon a "heavy industrialization phase." Alternatively, we may find a sequence more characteristic of a centrally controlled economy (as in the Soviet Union or Communist China) in which successive phases of heavy industry, diversified light industry, and agricultural modernization are traversed. Again, the country may follow the sequence that occurred in Japan, beginning with agricultural modernization, leading into labor-intensive industrialization, export-led growth, and, finally, heavy industrialization. In passing through these phases, the economy performs the historical mission of the transition, the transformation of its mode of operation to a modern growth regime.

The familiarity of the examples just cited suggests that the idea of a sequential order in phases of growth has been long recognized as a useful concept in economic history. Since transitional growth, unlike growth within an epoch, is intrinsically a discontinuous process, this periodization device is a natural tool, and, in fact, must be relied upon to

handle the complexity of any historical transition process. We believe that the use of this conceptual device, reinforced by the statistical record now available, will contribute to our understanding of the contemporary transition process. Although inductive evidence is obviously essential to assist in identifying the phases occurring during the generation transition, the true value of this approach, however, can only be appreciated by a complementary effort of a more deductive type. This analytical task is a matter of establishing the evolutionary logic of a particular sequence of phases. This amounts to analyzing the forces which inevitably cause one phase to terminate, while laying down the conditions from which the next phase may naturally evolve.

More concretely, growth accomplishments in one phase contribute to the emergence of the next phase. These growth accomplishments can be thought of in terms of broadly defined resource-augmentation phenomena. They affect not only the quantity and quality of traditional economic resources (e. g., land, labor, and capital), but, more importantly, the capacities of the economic agents who must perform the critical economic functions. These latter growth accomplishments are matters of a broadly defined educational process, in which learning by doing plays a most essential part in the accumulation of this "human capital." In the next section of this chapter we develop the central thesis that augmentation of

human and material resources in one phase leads naturally to a new mode of operation for the economy in the next phase.

In adopting an evolutionary approach to transitional growth, we recognize that a completely deterministic theory of historical evaluation is a dangerous oversimplification. An evolutionary emphasis always represents an attempt to understand the nature and logic of growth controlled by endogenous forces. In the real world, however, such a process will always be distorted by the presence of exogenous forces which interfere with the "logical" unfolding of the endogenous forces. We learn from our empirical studies in the Philippines, Thailand, and Taiwan that the generation of transition experience takes on a variety of sequential patterns, explained by significant differences in exogenous factors. Any evolutionary thesis of social change must, therefore, be intrinsically imprecise--in the sense of lacking completely deterministic power--since it must take account of a combination of endogenous and exogenous forces. The contribution of such a thesis lies in its capacity to disentangle these two types of forces. We attempt such a distinction in Section 2 of this chapter.

To summarize our growth vista we now offer a first answer to the question we posed--how does growth come about in the first generation of the transition. We view this transformation of the economy as

accomplished through distinct phases so that growth comes about through the sequential evolution of these qualitatively different phases. The evolutionary thesis is not completely deterministic. Its application to empirical reality requires cognizance of exogenous forces which blur the logic of the evolutionary process. In this study we shall employ inductive evidence from less-developed countries to permit speculation about this important issue.

Having thus stated a central intellectual thrust of our approach, let us briefly consider its relationship to the economic heritage reviewed in Part I. In one of its aspects, our approach may be described as the periodization of the generation view of transitional growth, the application of a method of historiography. Thus, one major intellectual precedent for our work is found in the historical approach. In the study of economic growth, however, the historical method has been scarcely applied to periodization during transitions between growth epochs. This neglect is probably attributable to the historians' preoccupation with creating broad historical visions of the development process and incorporating a wide variety of economic, cultural, social, and political factors in their historical perspective. The generality of the historians' framework hampers their investigation of the operation of the economic system, a focus which we believe is the nub of transition periodization.

We have also noted (in Chapter 3) the institutional school's neglect of economic functions which can only be investigated from a perspective covering the economy's mode of operation. Hence, the institutionalists have also failed to attack the central issue of phases during transition growth. We do, however, appreciate this school's emphasis upon the human agent, and this emphasis will be incorporated into our framework for analyzing transition phasing.

In certain respects, our periodization approach to the transition has much in common with the outlook of the planning school. We follow their lead in appreciating the importance of growth typology, the recognition that there are several growth types among contemporary less-developed countries. We also accept the planners' instinct that strategy planning is a matter of analyzing the definite sequential order in which growth occurs (see Chapter 4, Section 4.5). However, our affinity for the planners' approach ends here, as was pointed out in our review of their approach. The planning school is clearly resource-oriented in their growth philosophy, to the virtual exclusion of other dimensions of the growth process. Moreover, the prescriptive and forward-looking character of their planning and strategy models is fundamentally different from our own orientation, which seeks to understand the historical reality of economic growth.

There are certain aspects of our approach which show significant links with the theoretical approach. We share the interest of that school in analysis aimed at explaining the growth process in terms of the economy's overall mode of operation. Explicitly this means that we borrow from the theoretical approach the emphasis upon intersectoral economic relationships as a key, in our view the most strategic, analytical facet of economic growth. The theoretical approach, however, shares with our other intellectual precursors the neglect of the periodization aspect of transition growth and, in fact, any explicit specification of the time dimension. It is this neglected area of study which we seek to open up for serious investigation in the growth field.

#### 1.4 SUMMARY

In presenting our growth and methodological vistas in this chapter, we provide a synoptic view of the strains of thought which we attempt to weave into a consistent framework for studying the development of the open, dualistic economy. In this section, we have explicitly introduced the distinctive time perspective of our approach and discussed its operational significance.

To recapitulate briefly, the focal point of our analysis is the transition process by which contemporary less-developed countries are,

to varying extents, escaping from the colonial growth epoch and entering the epoch of modern economic growth. The purpose of our transition analysis is to understand the process transforming the mode of operation of the entire economy. This process converts the stagnant, compartmentalized growth based upon the commercial forces of the enclave into a dynamic, integrated growth process based upon economy-wide innovational forces. To conduct this analysis in a historical context, we select a specific time span, the generation (roughly 20 years) of transition experience to take advantage of the first body of inductive evidence available for a study of this kind. In order to investigate the challenging issue of how growth comes about, we employ the historical method of periodization, identifying a few (3-5) distinct phases which occur in the generation view. Each phase represents a dominant pattern of growth, with growth emanating from a particular source, though always having intersectoral effects. We seek answers to the origins of continued growth by investigating the sequential order of phases as well as the plausible causes of the natural evolution of a subsequent phase from the one preceding it--while recognizing disturbances introduced by exogenous forces. Succinctly stated, our approach consists of periodization of a generation's experience in transforming the economy's mode of operation.

The first difficult task confronted in the application of this approach is the precise definition of an economy's mode of operation, which has been accepted heuristically up to this point. For this task, the structure of the open, dualistic economy must be analyzed, and this is the subject to which Chapter 7 is devoted. Having adopted a thesis of evolutionary change as a central theme in our growth vista, we now turn to a more detailed investigation of the essential growth phenomena exposed by this thesis.

## **2. THE TRANSITION PROCESS AS AN EVOLUTIONARY PHENOMENON**

### **2.1 A BIRD'S-EYE VIEW OF THE TRANSITION**

A large number of less-developed countries--including the Philippines, Thailand, and Taiwan--entered the post-World War II period having inherited economies with characteristics of colonial-type, open dualism. We have summarized these characteristics inherited from colonialism as compartmentalized growth, in which an externally oriented enclave sector is dominated by commercial forces and exists side by side with an agricultural sector controlled by traditional forces. In Chapter 2 we have shown that the long-run performance of such an economy leads to stagnation, with virtually constant per capita income and little change in the production structure.

Open, dualistic economies evolved in situations where overt political colonialism existed (e.g., the Philippines and Taiwan) as well as where overt colonial political control was absent (e.g., Thailand). Investigation of the precise impact of overt political colonialism is not essential to our study. It is necessary, however, to understand the central economic manifestations of colonialism and the structure of the colonial economy (as portrayed in Chapter 2) as a point of departure for our analysis of the transition. In this section we identify the essential

economic phenomena which occur in the transition and point to the growth philosophy appropriate for analyzing these phenomena.

We have consistently viewed the transition as a period during which the growth-promotion forces of one epoch are gradually eroded as those associated with a new epoch evolve. In the transition from the colonial epoch to the modern growth epoch, both the form and operation of the economy are irrevocably altered. These modifications reflect underlying changes in the basic characteristics of the economy inherited from colonialism. Integration of the economy's sectors replaces compartmentalization; an internal orientation replaces the external orientation; industrialization replaces the commercial orientation; and modernization replaces traditionalism in the agricultural sector. Thus, the transition of an open, dualistic economy may be viewed as the process by which these characteristics of modern growth--integration, internal orientation, industrialization, and modernization of agriculture--supplant the colonial economic heritage in the national economy. As a result of these changes, the economy gradually enters the epoch of modern growth, the epoch characterized by continuous economy-wide innovation as scientific knowledge is consciously applied to all productive activity.

Assuming an ex post view of this transition process, we may ask what are the essential growth accomplishments during a generation of

transition needed for replacing the growth promotion forces of colonialism by those associated with modern growth. In posing this question, we immediately recognize that some of these accomplishments are likely to be more tangible and measureable than others. The essential growth phenomena which we seek to identify are precisely those needed for achieving these accomplishments during the generation of transition.

Contemporary growth analysis stresses the need for augmentation of an economy's productive capacity during the transition through enhancing the volume and quality of resources available. These resources will be employed to build and strengthen links between the economy's major productive sectors to promote the development of a modern, integrated economy. This implies that the form or structure of the economy must be modified, involving changes which are likely to be highly visible. There are, however, associated changes of a more dynamic quality which are considerably less visible. The growth-promotion force of colonial profit accumulation through external trade will gradually fade as the internal force of economy-wide production innovation becomes increasingly ascendant. These dynamic changes in the economy's driving force go well beyond the symptoms shown in changes of resources and the economy's "form." In the process of displacing the colonial economic system, the economy's entire mode of operation

undergoes transformation. The essential growth phenomena, or growth accomplishments, during the transition, therefore, consist of modifications of the economy's form and its mode of operation, induced by the diffusion of a new driving force throughout the economy. The issue to which we now turn is what growth philosophy is germane to this type of growth process.

## 2.2 THE EVOLUTIONARY VISTA

As the title to this section suggests, we consider the appropriate growth philosophy to be one which views growth as an evolutionary process. Central to this philosophy is the belief that each epoch has an "origin in other pre-existing types and that the distinguishing differences are due to modifications in successive generations."<sup>11</sup> This basic meaning of evolution is consistent with our historical vision of epochal change. Moreover, we view the epochal transformation process as "a process of continuous change from a lower, simpler, or worse to a higher, more complex or better state."<sup>12</sup> Our emphasis upon

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<sup>11</sup>This is one of several connotations given to the term "evolution" in Webster's Seventh New Collegiate Dictionary.

<sup>12</sup>Ibid., a second connotation.

the "integration" aspect of modern economic growth is construed as such a progression toward greater complexity. Finally, the transition process is comparable to organic evolution as a process "by which through a series of changes or steps a living organism has acquired its distinguishing morphological and physiological characters."<sup>13</sup> Thus, we regard the central phenomena of the transition to be in the "form" of the economy (i. e., the "morphological" aspect) and its mode of operation (i. e., the equivalent of the "physiological" aspect). In short, we view transition growth as an evolutionary process in every sense of its ordinary connotations.

This growth vista of transition growth as an evolutionary process is hardly a revolutionary view of social development. In our application, however, the evolutionary vista serves to broaden the concept of transition growth beyond mere resource augmentation, whether quantitative or qualitative. We have seen from our evaluation of the state of the art in Part I that when the concept, "resources," is construed broadly to include both material and human (or agent) factors that the resource augmentative philosophy of growth is emphasized by all

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<sup>13</sup>Ibid., a third connotation.

contemporary schools--especially by the planning and institutional schools. This philosophy leads to a view of growth in which a broadly defined savings and investment process promotes accumulation of human and material resources of better quality. Its appeal lies in the concreteness it offers as a framework amenable to quantification and the fact that it is consistent with the traditional view of economic growth. The resource augmentation approach, indeed, has considerable merit, and it should be regarded as a part, but only a part, of a philosophy appropriate to studying the transition process.

The resource augmentation philosophy is inadequate as an approach for understanding transition growth precisely because it disregards the evolutionary nature of growth. That is to say, it neglects changes in both the economy's form ("morphology") and mode of operation ("physiology"). Though quantitative increases of resources and their qualitative improvement are important facets of growth, their contribution to growth cannot be fully understood apart from the form, or structural outline, of the economy and the way it is altered as growth occurs. Moreover, changes in the economy's form are associated with modifications of its operation. We view these changes in form and mode of operation as the most important accomplishments in a generation of transition

**growth. It is these growth phenomena--the morphological aspect and the physiological aspect--which are stressed in our evolutionary vista of growth.**

**Our evolutionary view of the growth process may be put in sharper focus by visualizing the cumulative effects of transitional growth in a "comparative statics" perspective. We might envisage two "snapshot" pictures of a developing open, dualistic economy, one at the beginning of the transition in 1950 and a second after a generation of transition growth in 1970. Each snapshot offers a picture of the economy's essential form and the way it operates. In comparing the two snapshots taken at the two different points in time, we would observe marked differences in both the economy's form and mode of operation. The evolutionary view of the transition is addressed to the dynamic process which occurs during the twenty-year period to produce these two basic growth accomplishments.**

**We employ a direct analogy between economic evolution and organic evolution to emphasize that we view the economy as a living entity. Hence, we choose to speak of physiological change to signify that growth is primarily a modification of a living process. This interpretation is meant to depict each economic epoch as a "way of economic life" to enable us to discuss meaningfully the epoch's growth thrust (or growth-promotion force). For example, we have pictured the transition from the colonial to the modern growth epoch as involving a shift from the driving force of**

accumulation of commercial profits to one of applying knowledge for pervasive innovation in production. This view becomes meaningful only when growth is construed as a living process. Hence, the resource augmentation approach is inadequate because it fails to bridge the gap between mere resource stockpiling and the economy's way of life.

We are aware of the problems inherent in application of the evolutionary vista as a method appropriate for scientific economic analysis. The difficulty lies in devising a methodology adapted to measurement of economic phenomena, the criterion by which the resource augmentation approach is found attractive. In contrast to the tangible concepts of that approach (factors of production and their output), the concepts of an economy's "form" and "mode of operation"--the essential components of an evolutionary vista--will at first blush appear nebulous. We find that an important challenge, therefore, lies in the need for evolving a quantitative frame of analysis for implementing our approach. The remainder of this chapter will be devoted to clothing the basic concepts of form and mode of operation with concrete meaning, to give substance to the evolutionary thesis. More systematic development of methodology employing these concepts will be undertaken in the next three chapters.

### 2.3 THE INTERSECTORAL APPROACH TO EVOLUTIONARY GROWTH

To discuss meaningfully the economy's morphology (structure), we must begin by analyzing the economy's component parts as well as the pattern of connectedness among the parts. The component parts are the economic sectors, and they are linked by intersectoral relationships (flows). In adopting an intersectoral approach to investigate the evolutionary process occurring during the transition, we are conscious of three requirements for such an approach. First, the approach must be holistic so that the intersectoral relationships depicted embrace the entire economy. Second, the selection of sectors must be such that the economy's overall mode of operation can be meaningfully discussed in terms of intersectoral flows. Third, the number of sectors identified must be appropriate for analyzing the central evolutionary phenomenon of modification of the economy's overall operation. To enable analysis of this kind, the sectors identified must be limited to a small number of key, large (aggregate) production sectors.

The latter requirement disqualifies the input-output approach which might suggest itself to one familiar with the literature, reviewed in Part I, as a tool to investigate the economy's morphology. To elaborate on the third requirement above, the input-output approach is inappropriate

because its focus is confined to symmetrical relationships among a large number of production sectors. This focus leads to the mechanical nature of the dynamic input-output growth models reviewed in Chapter 4, in which growth can be treated only in a formalistic way. This treatment, in turn, precludes the formulation of meaningful rules of growth which is a basic objective in our analysis of the transition process. By the alternative course of treating asymmetrical relationships among a few strategic aggregate sectors, we seek to arrive at the rules of growth governing the transition process.

The important aspects in our analysis of evolutionary growth during the transition may be illustrated by a concrete example. For this purpose, we introduce Table I, in which the generation time span embraces four phases (1, 2, 3, 4) indicated as the various column headings in the top row. In each of these columns, representing phases, we show certain linear graphs, in which the nodes (or vertices), labelled as  $\textcircled{X}$ ,  $\textcircled{Y}$ , and  $\textcircled{F}$ , represent the aggregate production sectors, agriculture  $\textcircled{X}$ , industry  $\textcircled{Y}$ , and foreign  $\textcircled{F}$ . Economic activities--e.g., production, income generation, income disposition, resource allocation, resource accumulation--which occur may be either intrasectoral or intersectoral in nature. For the moment we concentrate upon intersectoral relationships. Reading horizontally (left to right),

TABLE I  
ASPECTS OF TRANSITION GROWTH

Phases Aspects	1	2	3	4
I Morphological Aspect				
II Physiological Aspect		<p style="text-align: center;">Bilateral Exchange</p>	<p style="text-align: center;">Triangular Exchange</p>	<p style="text-align: center;">Bilateral Exchange</p>
III Resource Augmentation Aspect				

**Table I gives a picture of changing patterns of intersectoral relationships as the economy moves through the four phases of the generation of transition.**

**In view of the complexity of the transition process, we find it helpful to identify three aspects of the essential transition phenomena, shown as Aspects I, II, and III in the left-hand margin. Given the aggregate production sectors (X), (Y), and (F), the transition may then be discussed in terms of three aspects:**

- (I) the morphological aspect, according to a constructional viewpoint**
- (II) the physiological aspect, according to a functional viewpoint**
- (III) the resource augmentation aspect, according to an accumulation viewpoint.**

**In our earlier terminology, Aspects I and II are elaborations, respectively, of the concepts of "form" and "mode of operation," while Aspect III is associated with the resource-oriented growth approach. The identification of these distinguishable aspects constitutes an analytical design to implement our evolutionary approach to transitional growth. We now proceed to elaborate on each aspect.**

## 2.4 MORPHOLOGY OF THE ECONOMY

The epoch of modern economic growth calls for an economy whose form is vastly more complex than that found in any preceding epoch. This complexity of form is describable in terms of the number and quality of intersectoral relationships among the aggregate production sectors (X), (Y), and (F). Thus, we find it convenient to adopt a constructional viewpoint, in which construction of new and more intricate intersectoral links is a primary task to be accomplished during the transition process. In the first row of Table I, the morphological aspect, this construction process is depicted by emergence of new types of directed edges (links) between the production sectors (vertices) as the economy traverses successive phases of the transition.

These directed edges represent economic flows between sectors, and the significance of such intersectoral flows has long been recognized in economic literature. Intersectoral commodity flows, on the one hand, and intersectoral factor flows (services of factors of production) have received considerable emphasis in traditional economic analysis. We need only construe "sectors" as countries to make the point that much of traditional international economics, with its emphasis on both trade and factor movements (e.g., capital and labor), has operated within such an implicit framework.

Changing the economy's morphology, therefore, involves modification of the pattern of these intersectoral flows. Returning to Table I, as we move horizontally across Row 1, we see that the economy's form becomes progressively more complicated as it moves through the four phases. In Phase 1, in fact, the form is so primitive that intersectoral relationships do not exist. This phase may conveniently be thought of as the primitive agrarian economy, organized on the basis of local self-sufficiency and still so fragmented along household and village lines that no intersectoral contacts exist. In Phase 2, a bilateral relationship, defined by edges "a" and "b," emerges between the industrial sector, (Y), and the foreign sector, (F). This might be construed, for example, to signify the advent of an enclave sector with an external orientation, still completely isolated from the subsistence agricultural sector, (X). In Phase 3, the agricultural sector (X) begins to be drawn into contact with the other sectors through new links in the economy shown as "c" and "d." This phase may be construed as the penetration of the agricultural sector by enclave trading forces resulting in the export of agricultural goods (edge "d") and the purchase of enclave-produced goods and services by agriculture (edge "c"). Note that the agricultural sector now begins to have significance as both a market for domestic goods and as a source of supply of export products. Finally, in Phase 4, the integration (and

complexity) of the economy is extended as the agricultural sector begins to supply the industrial sector with domestically produced goods-- typically, food and raw materials (edge "e")--and imports begin to flow into the agricultural sector (edge "f"). Thus, in Phase 4 the economy assumes both a more national (extensive) attribute and a more internal orientation.

The use of this formalized sequence to illustrate the phenomenon of morphological change during the transition is obviously an oversimplification of a real growth process. Nevertheless, we believe that its significance lies in offering a new departure in the study of transitional growth by throwing into clear focus the problem of modification of an economy's form defined in terms of intersectoral relationship. The construction of these new patterns become a basic, if not the most basic, aspect of an economy's progress toward a new growth epoch. As the economy proceeds from its colonial, mercantile-agrarian past into the modern growth epoch, the emergence of new interrelationships, new contacts, and new patterns for resource utilization stand out as the significant growth accomplishments. Specifically, in all of these manifestations of the economy's morphology, we see progress from the most compartmentalized form (Phase 1) to the most integrated form (Phase 4).

In keeping with our earlier caveat concerning the need for clothing our concepts with operational significance, we note that this constructional view of transitional growth is defined in terms of observable intersectoral flows. Moreover, these flows can be identified in terms of a suitably designed income and asset accounting system. It stands to reason, therefore, that the morphological aspect is amenable to statistical analysis. We systematically explore the methodological implications of these operational facets of the economy's morphology in the next chapter.

## 2.5 PHYSIOLOGY OF THE ECONOMY

The intersectoral links which are constructed during the transition signify the emergence of new intersectoral relationships. Simultaneously with and as a consequence of this constructional process, the economy's mode of operation--which we construe as its "physiology" or functional processes--becomes modified, involving greater complexity as integration among sectors proceeds. To describe the economy's physiology we use the device of conceiving of an economy's total operation as formed of several potential component functional parts. Each of these functional components consists of a distinct building block in the entire system. We shall refer to these building blocks as functional units.

We illustrate this concept of functional units by reference to the physiological aspect (Row 2) in Table I. In the first phase, the absence of any intersectoral flows implies that there are no intersectoral functions. In the second phase, the set of two flows (the directed edges "a" and "b") denotes the rise of the earliest intersectoral function; i. e., the export of commodities (edge "b") to the foreign sector (F) by the enclave (Y) and the import of goods (edge "a") into the enclave from the foreign sector. Together these two flows represent the intersectoral function of bilateral exchange (i. e., the trading of commodities between enclave and foreign sector). This bilateral exchange constitutes a simple functional unit, revealing (1) that the existence of a functional unit requires a set (in this case two) of flows and (2) that the importance of each individual link (flow) lies not so much in its morphological significance (Aspect I) as in the fact that each link is a part of a functional unit, which describes an independent set of events in the economy's overall operation.

Proceeding to Phase 3, we see that a new functional unit is formed (the three edges "a," "c," and "d") representing a new phenomenon, a triangular pattern of trade among the agricultural sector (X), the industrial sector (Y), and the foreign sector (F). We may conceive of this pattern as comprising (1) a flow ("d") of agricultural exports to the

foreign sector, (2) a flow of imported goods ("a") from the foreign sector to the industrial sector and (3) completion of the pattern of resource utilization by a third flow ("c"). The latter flow signifies the compensation of the agricultural sector for the exports it supplied to allow the industrial sector to obtain imported goods. The agricultural sector receives this compensation in the form of domestically produced industrial goods. This triangular pattern of trade is a consistent pattern in that all sectors are satisfied by the existing flows and, hence, this pattern of exchange may assume an independent existence. It is this property which makes it possible to view such a functional unit as an elementary building block in a system which portrays the mode of operation or physiology of the entire economy.

In Phase 4 the physiology of the economy is seen to encompass two additional functional units, describing two types of intersectoral relationships hitherto absent. One of the new functional units (the two flows "c" and "e") signifies bilateral exchange between the two domestic sectors, while the other (flows "d" and "f") pictures a modernized agricultural sector directly absorbing imported goods and exporting new types of modern agricultural products directly to the foreign market. Thus, as we move horizontally across Table I, we envisage the transitional growth process as involving the emergence of more and more of these

functional units as successive phases are traversed. This process is analogous to organic evolution in which the organism takes on more organs at each developmental stage, each organ allowing the appropriation of a specific new function.

Thus, we view the economy as acquiring new intersectoral functions as it develops new functional units (the equivalent of new "organs") by moving through the transition phases. Beginning with Phase 2, the first intersectoral pattern arises, that of bilateral exchange between the enclave and the foreign sector. From the aggregate viewpoint this functional unit alone dominates the economy's mode of operation during this phase. In the third phase, however, the economy takes on an additional functional unit, the triangular pattern of exchange which links all three sectors. The important point to grasp is that the economy's mode of operation in Phase 3 involves two intersectoral patterns, the bilateral exchange pattern acquired in Phase 2 and the triangular pattern which emerges in Phase 3. Finally, in Phase 4, two new functional units emerge, and the economy's physiological aspect is reflected in the simultaneous operation of all four functional complexes built up in Phases 2, 3, and 4. It is through analysis of an economy's acquisition of functional units in this manner that we propose to implement our evolutionary view of transition growth as a process "by which through a

series of changes or steps a living organism has acquired its distinguishing morphological and physiological characters."

This view of transition growth should not lead the reader to believe that the growth process is mechanical in nature. Our approach is quite the opposite, emphasizing that evolution of the economy during the generation of transition is a living process in which growth requires greater integration of previously unrelated parts. These parts are brought into the life stream of the national economy only as new organs are developed.

The language we have introduced in this section has been selected to enable us to discuss the evolutionary process with precision. Moreover, its purpose is to promote discussion in terms of the living economic process which we conceive of as the transition. The terminology is, therefore, relevant to portray the transition from colonialism to the modern growth epoch. We now proceed to illustrate this point by briefly illustrating such an application of the language.

First, we view transitional growth as an evolutionary process comprising changes in both morphology (form) and physiology (functioning). In the first phase, we have pictured the economy's morphology consisting of unrelated parts (sectors) and its physiology in terms of the functioning of these unrelated sectors independently of each other. In fact, it is

difficult to conceive of a national economy in this phase since all economic activity is local in nature with a minimum of intersectoral contact. In Phase 2 a pattern of enclave growth emerges, bringing with it the first intersectoral relationship. In this pattern of bilateral exchange between the enclave and the foreign sector, we see two major characteristics of the colonial epoch: the export-orientation of the enclave and the compartmentalization of growth-promotion forces. Both are associated with the single bilateral exchange link which dominates the economy's mode of operation; this link ties the enclave to the foreign sector while there is no linkage involving the agricultural sector. Breaking this mode of the economy's operation is, in fact, the essence of transition in an economy with a colonial heritage. This begins to occur in Phase 3 as a new type of industrial sector emerges, producing for the agricultural sector and using that sector's exports to facilitate industrial growth. In this new triangular pattern, the economy's previous export-orientation is retained, but its mode of operation now begins to show a measure of integration. Finally, in Phase 4 the economy enters a phase of growth in which the industrial sector becomes more fully integrated with agriculture both through absorbing raw materials and selling its output in a bilateral exchange relationship. Behind this dramatic change lies modernization of agriculture, the breakdown of agricultural traditionalism

perpetuated by colonialism. Thus, we see that the central features of the transition (reversing colonial compartmentalization, that epoch's commercial and external orientation and agricultural traditionalism) can best be analyzed in terms of changes in the economy's morphology and mode of operation. The terminology is designed to give us precise language to investigate these central phenomena of the transition.

In investigating the economy's physiology and the process by which it changes during transition growth we have stressed the relationship between these changes and the construction of intersectoral relationships ("morphological change"). A satisfactory thesis of evolutionary growth must be concerned with both. We find that changes in an economy's mode of operation, in fact, are rooted in changes in its morphology. This crucial relationship between physiological and morphological change is brought out by our concept of functional units. Each functional unit is a consistent set of economic activities, describing a particular pattern of resource utilization and capable of independent existence. Alteration of an economy's mode of operation is conceived of as involving progressively greater intricacy in each phase through simultaneous operation of progressively more functional units.

We have attempted, therefore, to give more tangible and concrete meaning to rather vague notions, such as "form," "mode of operation," "changing economic functions," and "changing economic way of life." In particular, the more precise terminology introduced in this section can be adapted to national income accounting practice, enabling measurement. We submit, therefore, that the evolutionary view of transitional growth, as interpreted in this section, offers an opportunity for new research effort. For this effort, we must explore further the concept of functional units. We must proceed beyond the few examples given in this section to learn how to identify, classify, and analyze these growth phenomena more systematically. This subject, dealing directly with the nature of open dualism, is discussed in the two following chapters. Before proceeding to that subject, we investigate the relationship between our evolutionary view of growth and the more traditional resource-augmentation approach alluded to above. This problem is raised in Table I, Row 3, where resource augmentation is shown as an aspect of transition growth.

## 2.6 RESOURCE AUGMENTATION

In an earlier section (2.2) we have construed the augmentation of human and material resources, both in quality and quantity, to be the focus of traditional approaches to economic growth, particularly prominent in the planning and institutional approaches. The central concepts of a resource augmentation emphasis (e.g., savings, investment, absorptive capacity, entrepreneurship) are obviously germane to an understanding of the transition process. The problem we now confront is integrating the resource augmentation approach with the evolutionary approach just presented. Our own growth vista will not be complete until these aspects of transitional growth are woven into a general framework of thinking.

We begin this task by again referring to Table I, in which the resource augmentation aspect is shown as Row 3. Note that in each phase we show the same vertexes  $(X)$ ,  $(Y)$ , and  $(F)$ , discussed earlier, representing the same macroeconomic sectors as before. We now show in Row 3 a symbol beside each vertex; e.g., in Phase 2, the value "y" is attached to vertex  $(Y)$ , the value "f" is attached to vertex  $(F)$ . In this way, a value is attached to each vertex shown for each phase to denote the size of the vertex. This abstract idea is interpreted to mean that each economic sector (i.e., vertex) shown is given a specific size (i.e., the

value of the vertex) as measured by the quantity and quality of human and material resources contained in that sector. We give tangible impression of size by using larger dots to indicate sectors of larger size. Thus, the resource augmentation aspect means that, as the economy moves through successive phases, the size of two or more sectors increases.

The abstract mathematical expression depicted in Table I leads to a more general type of valued linear graph in which every edge as well as every vertex is given a value. This abstract mathematical tool (mechanical though it may seem) has the special merit of bringing two important economic ideas into focus, the form and connectedness of the economy (emphasized in our evolutionary view) and the size of the economy (emphasized by the resource augmentation approach). A comprehensive growth vista, appropriate to the transition, must emphasize both changes in form and changes in size--which may be interpreted as the qualitative and quantitative aspects of the evolutionary approach.

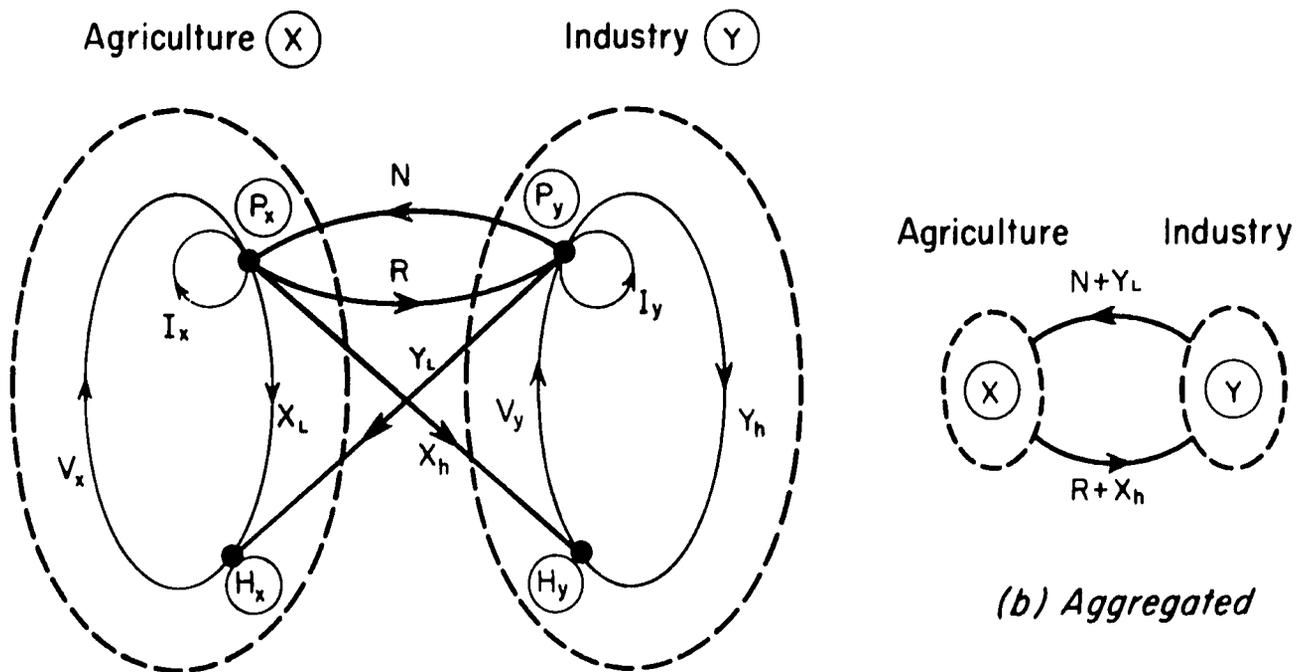
The relation between the size of the economy (i. e., the size of resources available to the various sectors) and the economy's mode of operation can be readily grasped when we assert that resources are created and continuously augmented by the very process of the economy's operation. Since the mode of operation can be analyzed in terms of the

functional units (shown in Row 2 of Table I), it is reasonable to assert that the operation of each functional unit has some resource-creation significance.

Let us consider as an example the bilateral exchange case which represents exchange between the agricultural sector (X) and the industrial sector (Y) (shown in Phase 4). As one of the major functional units through which the developing economy functions, this pattern of exchange involves more than mere exchange. Lying behind the swapping of goods are production and resource allocation phenomena. Hence, the expansion of bilateral exchange leads to simultaneous augmentation of human and material resources throughout both sectors involved.

The resource-creation effect of bilateral exchange can be better understood if we examine intrasectoral relationships, heretofore disregarded in our discussion of Table I. In Diagram Ia, the two dotted circles represent the agricultural (X) and industrial (Y) sectors. Two types of economic flows are shown: intersectoral flows between the two dotted circles and intrasectoral flows within the two dotted circles. Within the agricultural sector (dotted circle), two vertices (P<sub>x</sub>) and (H<sub>x</sub>) represent, respectively, the production and household subsectors. The production subsector employs as inputs services of primary factors, V<sub>x</sub>, supplied by households as well as current and capital resources, I<sub>x</sub>,

Diagram I: Disaggregated and Aggregated Real Flows



(a) Disaggregated

(b) Aggregated

supplied by the production sector itself. The net output of the production sector is used either for consumption by households within that sector,  $X_L$ , an intrasectoral flow or transfers (export) to the other sector either as inputs for production,  $R$ , or for consumption,  $X_h$ , both intersectoral flows. In return for these intersectoral flows, the agricultural sector obtains both production inputs,  $N$ , and consumption goods,  $Y_L$ , from the industrial sector. A similar description applies, of course, to all flows to the industrial sector. The bilateral pattern of trade between sectors arising from these activities is shown in Diagram Ib, in which we have suppressed the intrasectoral flows and aggregated the intersectoral flows. We now see clearly that the phenomenon of sectoral exchange and its size are the surface manifestations of activities within each sector, including production, consumption, resource allocation, and continuous augmentation of resources.

This brief exercise of disaggregation (shifting to a less aggregative view of the economy) is useful to give us a more precise view of the relationship between the resource augmentation and the evolutionary approaches to growth. We are also reassured of a link with the more familiar method of interindustry analysis. While this is convenient, as an expository device, we wish to warn the reader that the interindustry approach (as we mentioned earlier) is inappropriate as the major conceptual

tool for growth analysis because of its exclusive focus upon symmetrical relationships. We wish to go further in this respect to warn that the traditional methodology for intersectoral analysis is unsatisfactory for growth analysis because it is founded upon an explicitly formulated theory of intrasectoral relationships. This traditional method of macroeconomic analysis,<sup>14</sup> therefore, assumes that intersectoral relationships must be studied from an intrasectoral orientation. The method of intersectoral analysis adopted in this book reverses this traditional assumption. Our fundamental position is that intersectoral relationships have meaningful growth significance independently of intrasectoral relations. This viewpoint is essential for our analysis of transition growth inasmuch as it allows us to emphasize the economy's form and its mode of operation as the heart of transition growth. In this shift of emphasis, the resource augmentation approach embodied in the traditional intrasectoral orientation is not ignored but placed in its proper perspective.

The resource augmentation approach may thus be integrated into our evolutionary view of the transition process. Expansion of human capacities and material resources are significant aspects of growth, but

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<sup>14</sup> Neo-Classical international trade theory and Keynesian foreign trade multiplier analysis, for example, are rooted in this tradition.

their significance lies in their contribution to the living process of growth, reflected in the economy's changing mode of operation. Their contribution in these terms can be analyzed only in the context of a macroscopic (rather than microscopic) framework which focusses upon changes in the economy's form (morphology) and its overall mode of operation (physiology).

## 2.7 SUMMARY

In the study of the transition of such a complicated entity as a whole economy, it is of the utmost importance to have some agreement as to what constitutes the most essential growth phenomena. For this reason, we have raised the question in Section 2.1 as to what are the most important growth accomplishments during a generation of transition experience. For growth phenomena refer precisely to the process of achieving these accomplishments. Without agreement on the substantive content, we can hardly begin to think about theory. In this chapter we have tried to develop our growth vista with respect to the essential growth phenomena. Our first speculation on the nature of theory is reserved for Chapter 9.

On the issue upon which we have focussed, that of essential growth phenomena, we believe there are two parallel sets of ideas which

we have viewed, in our first preliminary exposition, as existing side by side. On the one hand, growth phenomena may be gauged in terms of resource augmentation, while, on the other hand, they are facets in the evolution of the economy. We construe the resource aspect to include increases in the quantity and quality of material and human resources, and we interpret economic evolution to embrace the economy's form (morphology) as well as its mode of operation (physiology). In our view, an adequate growth philosophy for studying the transition must be broad enough to include both strands of thought, resource augmentation and the economy's evolution. In short, a theory of the transition must attempt to explain both types of phenomena.

Of these two parallel strands of thought on the central growth phenomena, the resource augmentation approach is one with which economists are generally familiar. For this reason, we have concentrated on the second, the evolutionary aspect of growth. By employing what amounts to a simplified national income accounting system, we have discussed both change in the economy's morphology and the related alteration of the economy's mode of operation. We have found it useful to introduce a conceptual device, functional unit, which can be identified from the economy's morphology and, in turn, used as an elementary building block to describe the economy's mode of operation. The morphological

evolution of an economy is viewed as a process through which the economy acquires more functional units and moves toward a higher, but more intricate, mode of operation as its integration becomes enhanced.

Further elaboration of our approach hinges upon two critical issues. The first issue concerns wealth of content. Throughout this section, we have discussed the evolutionary view with the aid of graphic examples, using Table I and Diagram I for this purpose. It is natural to question the generality of an approach based on such limited exposition. We expect that the reader may well raise a series of pertinent questions, inter alia, how many functional units may be identified, how can one proceed to identify all of them systematically, how may they be classified, and how can their resource-creation significance be assessed? It seems obvious that the evolutionary approach to growth is not likely to develop meaningful content unless a large number of building blocks of the type described can be identified. There is an immediate challenge, therefore, in the necessity to enrich the content of our approach by careful and systematic investigation of these elementary building blocks. We undertake this task in the next two chapters.

The second and more basic issue is the bearing of our evolutionary approach on theory--an issue which has been consciously sidestepped in the discourse to this point. While much of our growth vista,

as developed thus far, is obviously aimed at an eventual theoretical framework, formal speculation of theoretical implications is deliberately postponed until Chapter 9. It is true that our analysis of what constitutes the essential growth phenomena provides some hint of our theoretical orientation. Thus, we may state our bias directly; we believe that theory must seek to integrate the resource augmentation phenomena and those highlighted by the additional vista of growth as an evolutionary process.

### 3. CONCLUSION

In this chapter we have expounded our vista of the transitional growth process in contemporary less-developed countries in terms of two major themes neglected in contemporary growth studies. The first of these themes is the necessity for an explicit time dimension, the subject explored in Section 1. The time dimension of the transition was examined from both external and internal viewpoints. From an external perspective, the transition was viewed in terms of its historical background, as bridging the "gap" between two growth epochs. In this view the transition emerges from its heritage of the colonial economic epoch and leads into the epoch of modern economic growth. Both epochs are interpreted as long regimes of century dimensions, while the transition is a period of relatively short duration spanning several decades occurring

between these long growth epochs. From a perspective internal to the transition, we select the generation (approximately 20 years) after World War II as our explicit time horizon for intensive analysis of transitional growth. Within this generation view we envisage a few (3 to 5) phases, each representing a unique mode of operation in the evolving economy. These phases occur in a definite logical sequence, each leading into the next.

The second major theme in our growth vista, an evolutionary process of transition growth, was discussed in Section 2. Examination of this theme enables us to elaborate the essential content of the transition in terms of its major growth phenomena. Viewed ex post and applied to our time focus, these are identified as the crucial growth accomplishments achieved during the generation time horizon. Two parallel strains of thought emerge from this discussion; one deriving from the familiar resource augmentation approach to growth and our own evolutionary vision of growth as essentially a matter of the economy's form and its mode of operation. By using expository examples, we have offered a preliminary and somewhat intuitive grasp of the content of these growth phenomena. In the three following chapters we adopt a more formal approach to this problem of analytical content. Chapter 7 is devoted to the issue of the economy's form or structure; Chapter 8, to the economy's mode of operation; and to a synthesis of the various strains in an evolutionary approach to growth.