Bachop, Martin William

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by

MARTIN W. BACHOP

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2/2/82
date

Gilbert Voyat PhD
Chairman of Examining Committee
Gilbert Voyat, Ph.D.

2/2/82
date

Steven J. Ellman
Executive Officer

Laurence J. Gould, Ph.D.

Paul L. Wachtel, Ph.D.

Gilbert Voyat PhD
Gilbert Voyat, Ph.D.

Supervisory Committee

The City University of New York

Abstract

META-CONCEPTS AND THE LANGUAGE OF ANALYTICAL PSYCHOLOGY IN CARL JUNG'S WORK ON THE INDIVIDUATION PROCESS

by

Martin W. Bachop

Adviser: Professor Gilbert Voyat

This dissertation is a critical theoretical investigation of Carl Jung's formulation of the "individuation process". Its purpose is to explore the viability of Jung's expanded conception of science, to identify and eliminate some of the inconsistent and non-scientific aspects of his work, and to elaborate the scientific core of the individuation process in all its complexity and ambiguity. The approach to Jung's work taken in this dissertation has three basic aspects. First, there is a structural attempt to situate his work in its context within the range of human experience. This is done by locating Jung's work in the context of alternative psychological approaches and the nature and background of science, and by categorizing his treatment of issues concerning the individuation process through comparing and contrasting it with that of other theorists from the standpoint of their underlying philosophical assumptions. Second, there is an effort to sharpen the focus on Jung's writings in order to identify the key concepts in his theorizing about the individuation process. The method employed for this effort is to organize a hierarchy of key concepts and appraise them critically. Third, there is an examination of how Jung's concepts arose from his experiences and how they developed over time. In order to do this, Jung's treatment of the individuation process is systematized, the observations which prompted him to create his concepts are discussed, and the concepts themselves will be studied for changes both in extension and comprehension during their historical development.

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Introduction

Carl Jung was an outstanding member of the group of brilliant men who were intensely attracted by Freud and his pioneering work in psychoanalysis at the start of the Twentieth Century. Like several others, Jung broke away to found his own school of thought after an initial apprenticeship period with the master.

Jung employed many Freudian concepts in his theoretical writings such as the unconscious, repression, the ego and transference, but he made them uniquely his own. He often expanded the field of their application far beyond the realm of psychology. Jung also introduced many theoretical terms to account for his observations, among the most important of which are introversion, extraversion, synchronicity, archetype, the collective unconscious and the individuation process.

The scope of Jung's interests was enormous, and his erudition was staggering. He was familiar with and influenced by current and past thinking in such diverse fields as classical theology, literature, mythology, Zen, philosophy, alchemy, anthropology and mysticism. References to authors like Tertullian, Goethe, Nietzsche, Paracelsus and Meister Eckhart abound in his work.

Jung was also an extremely prolific writer, as his collected works fill up nineteen volumes spanning sixty years. He made few and rather limited attempts to organize his theoretical views into a comprehensive, coherent presentation, however, choosing instead to add theoretical commentary where he felt the material he was discussing demanded it. As a result, Jung's efforts at abstract conceptualization are scattered throughout his writings.

For specific reasons which will be elaborated at a later point, as well as the development of his ideas during his career and the sheer bulk of his work, his theoretical statements when placed side-by-side frequently contain inconsistencies and sometimes even outright contradictions. While some of these

discrepancies can be shown to result from the expansion of a previously limited concept or the replacement of an earlier idea by a later one, there remain numerous cases where Jung's formulations fall far short of the internal consistency, clarity and precision required in scientific research.

Despite these limitations, Jung's theory-building was a vibrant attempt to explain psychic phenomena which had hitherto not been investigated in a scientific manner and which for the most part tend to be ignored by the mainstream of contemporary psychologists. While some of his ideas ought to be discarded as no longer useful, his work as a whole offers innumerable insights into man and his mind which remain valid to this day.

For those acquainted with the magnitude of Jung's contribution to psychology, the lack of recognition currently granted him by academic psychologists is problematic and in need of explanation. On the undergraduate level, the teaching of Jung's work is basically confined to a small chapter in a course on personality theory. In graduate programs, even in clinical psychology, Jung is rarely mentioned while other classical approaches such as behaviorism and psychoanalysis are still highly influential, albeit controversial.

There are many reasons for such a state of affairs. The most obvious is probably the small number of psychologists qualified to teach Jung's work, which reflects both a lack of interest in his point of view within academic departments (unlike behaviorism) and the failure of Jung's contemporary followers to create professional groups with strong ties to the scientific community (as did Freudian analysts). While the relatively minor impact of Jungian theory on academic psychology can be analyzed from many perspectives (e.g. sociological, political, cultural), there are significant factors within Jung's work itself which help to account for this situation. It is to these internal factors that this dissertation will address itself.

Technical considerations have undoubtedly played a part in Jung's limited influence: his writing is very difficult, many of his works have only recently been translated, and a skilled application of his techniques requires a breadth of scholarship far beyond the confines of psychology per se. There are two more fundamental reasons related to the nature of the scientific enterprise itself, however, for Jung's low status in the world of academic psychology. These two reasons will receive much detailed attention in the body of this dissertation, as they help to furnish a perspective from which to evaluate Jung's work as science.

The first factor involved is Jung's expansive and creative approach to the conduct of scientific research and theorizing, which transcends by far the narrow limits of the traditional natural scientific method. In its historical development, mainstream psychology strove to differentiate itself from its philosophical heritage by assuming as its own the model provided by the natural sciences. Until recently, deviations from this model were seen as "unscientific" and were regarded as irrelevant or even meaningless. The growing acceptance of such non-natural scientific approaches as structuralism, systems theory and phenomenology, though, may lead to a re-appraisal of the scientific validity of Jung's work, which bears many formal similarities to these movements.

In addition to expressing an enriched conception of science, however, Jung also traveled beyond the bounds of what might reasonably be called science. At times, he was metaphysical in his speculations and even came close to mysticism. Obscure points, vague concepts and apparent inconsistencies are also prevalent in his writings. All of these characteristics tend to surround and conceal a healthy core of scientific insights and discoveries, and serve some critics as a convenient excuse for a hasty rejection of Jung's work as a whole.

It was the hope of defending Jung's expanded conception of science, identifying and eliminating some of the inconsistent and non-scientific aspects of

his work, and elaborating part of its scientific core in all its complexity and ambiguity that provided the impetus for the present study of Jung's thought. The lack of a systematic exposition of his theory on Jung's part and the dearth of critical analyses of his theoretical constructions were additional incentives for this undertaking.

The next section of this introduction will cover in some detail the content of the approach to Jung's work which will be taken in this dissertation. Before focussing on these specifics, however, a brief discussion of this dissertation itself as a scientific endeavor is in order.

The crucial significance of both clarifying the underlying philosophical approach and making a logical analysis of theory itself as integral parts of scientific work is stressed by authors from many backgrounds. The fact that one's scientific methods derive directly from the broad philosophical approach to the subject which is adopted is asserted by Giorgi (1970) and Vygotsky (1978). Polanyi treats a similar issue in his claim that scientific knowledge is ultimately personal knowledge, and that it develops in the context of man-made criteria for observation and evaluation which are philosophical in nature (Schwartz, 1974).

With regard to the essential role of theory, Piaget (1971b, 1972) emphasized the part played by the subject's actions and logical operations as well as his perceptions in the construction of scientific knowledge. Whitehead (1967) spoke of the importance of rationality and even speculation and metaphysics in fostering scientific advances. Sartre (1967) stated that a close study of a thing's "essence" by analyzing the concepts used to describe it, in addition to the usual empirical investigation of the thing's properties and interrelations, is a prerequisite for obtaining truly meaningful scientific knowledge.

Thus, there is support from representatives of phenomenology, dialectical materialism, structuralism and the philosophy of science for considering tasks

such as that of this dissertation as part of the scientific enterprise. The specific form that this undertaking will assume bears close resemblance to what several scientists, most notably Gruber and Barrett (1974), have recently called the "case study method".

As Gruber and Barrett (1974) described it, this method examines the development of an individual's theoretical ideas over time, taking into account both the changing meaning of individual concepts within the structure of a larger theory, and the circular interplay between factual observations and the theoretical constructions postulated to account for them. The broad focus of the case study method is on the individual's "point of view" (Gruber & Barrett, 1974), which is an overriding concept that subsumes the various aspects of scientific work (facts, theories, methods and philosophical approach). In his case studies, Luria (1976) employed a parallel concept, that of "syndrome" as a general pattern or structure evident in some way in all aspects of a person's functioning. The methods of Gruber and Barrett and Luria will supply a paradigm (Kuhn, 1970) for the current investigation of Jung's work.

An Approach to Jung

The approach to Jung's work taken in this dissertation has three basic aspects: first, a structural attempt to situate his work in its context within the range of human experience; second, an effort to sharpen the focus on Jung's writings in order to identify the key concepts in his theorizing; and third, an examination of how Jung's concepts arose from his experiences and how they developed over time.

Structure and Context

On the structural level, it is helpful in elucidating Jung's work as science to discuss how his approach compares with that of other theories in psychology. In

order to understand the similarities and differences, it is necessary to have a grasp of the nature of scientific inquiry in general, which can provide a foundation from which to evaluate particular theories. Also, one can fully comprehend the nature of science only by locating it, in turn, in its context: the various possible approaches to human experience (e.g. pre-reflective thought, art, economic production, etc.). Therefore, in this dissertation there will first be an attempt to situate Jung's work in the context of alternative psychological approaches and the nature and background of science before making an intensive study of his work itself. This approach will be applied in a specific manner throughout this dissertation to Jung's own concepts by categorizing his treatment of an issue through comparing and contrasting it with that of other theorists from the standpoint of their underlying philosophical assumptions.

Sharpening the Focus

After elaborating the background to Jung's work, this dissertation will focus more specifically upon his notion of the "individuation process". This process can be broadly defined as man's path to meaning, a sense of identity and psychic wholeness. It was selected as the main object of scrutiny in this investigation because of its central and unifying role within Jung's theoretical framework. As it refers to a dynamic process, it provides the context which is necessary in order to understand how the phenomena he has described interact, and as a superordinate concept, it helps to elaborate the meaning of his key concepts by showing how they are interrelated. Whether one approaches Jung's work from the direction of method, structure or development, one is ultimately drawn to a study of the individuation process, which effectively integrates all three points of view within its broad compass.

First, from the perspective of method, it provides an ideal forum to observe how Jung applies what he calls his constructive, teleological approach to

psychic events. This forward-looking point of view, it will be argued, is fundamental to Jung's theorizing and is an essential complement to the traditional reductive approach in doing full justice to the phenomena of a human science like psychology.

Second, from a structural point of view, a study of the individuation process necessarily entails a discussion of three other distinctively Jungian concepts (the collective unconscious, archetypes and symbols) whose own meaning becomes most fully clarified by understanding their place in the individuation process itself. Thus, in a sort of circular process, an examination of the individuation process will throw light on several subordinate concepts, while a consideration of these concepts themselves will reveal more completely the nature of the individuation process.

Structurally, the concepts to be discussed can be organized in a static hierarchy with the individuation process at the top as most general and inclusive (see Figure 1). This process may be viewed as having both a form, Jung's constructive method, and a content, the assimilation of the archetypes of the collective unconscious. The latter in turn may be seen as possessing a form, unconscious processes, and a content, archetypes. Unconscious processes themselves include a formal element (the degree of consciousness) in combination with their particular contents. When one looks more closely at archetypes one discovers that they, too, display both a form, the archetype per se, and a content, the symbol.

Third, in terms of development, the individuation process is a description of the stages the mature adult encounters while undergoing his primary psychological task, that of self-individuation. Jung has written very little on early psychic development, but his accounts of man's confrontations with the unknown

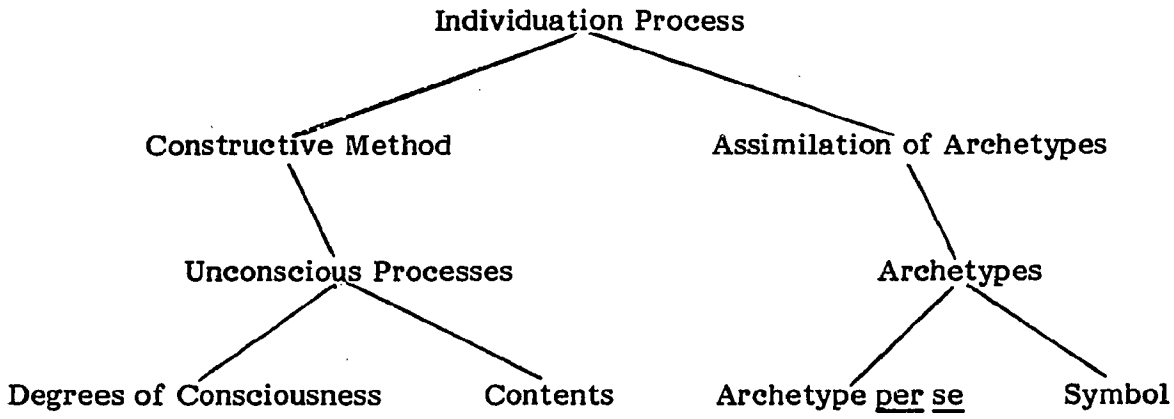

Figure 1. - Hierarchical arrangement of concepts

psychological world (the unconscious) later in life rank among his most significant achievements. From this perspective, particular archetypes may be ordered developmentally according to the various stages of the individuation process, beginning with the persona and the shadow, proceeding through the anima and wise old man, and ending with the Self (see Figure 2).

Unavoidably, much that is interesting and worthy of discussion in Jung's writings cannot be treated in depth in this paper. The areas which will be investigated are those most central to Jung's thought, which bear directly on the individuation process. Little mention will be made of the discoveries that led him to coin terms like synchronicity, introversion and extraversion. Except for a brief section using his views on dream interpretation as an illustration of his constructive approach to psychic occurrences, reference to Jung's ground-breaking work on dreams will be minimal. Finally, the techniques employed by Jungians engaged in psychotherapy and analysis will not be dealt with per se. Consideration of relatively abstract issues will nonetheless raise implications for conducting therapy, and these implications will be noted in order to indicate directions for further inquiry.

Origin and Development of Concepts

The concepts specified above (namely, the constructive method, the collective unconscious, archetypes, symbols and the individuation process) will be dealt with in their role within Jung's theory in three main ways. First, there will be an attempt to systematize Jung's treatment of the individuation process by identifying five overlapping points of view he took on the subject. Second, to the extent this is possible, there will be a discussion of the observations and experiences, both clinical and otherwise, which prompted him to create his concepts. Finally, there will be an effort to trace the historical development in Jung's writings of his key concepts. This review will include a classification of

Persona → Shadow → Anima → Wise Old Man → Self

Figure 2. - Developmental sequence of archetypes

Jung's papers to identify his major theoretical statements. The first time a key concept is used will be noted, and these concepts will be examined for changes both in extension (a quantitative change where the category is generalized to subsume more members) and comprehension (a qualitative change in the very meaning of the idea). This paper will rely heavily upon direct quotations from Jung's Collected Works as the best way both to illustrate the varying contexts in which he used his concepts and to demonstrate the all-too-frequent internal inconsistencies and contradictions.

In summarizing the approach to Jung's work which will be taken, it will be advantageous to delineate briefly the problems this dissertation was written to enlighten. By means of a close study of Jung's notion of the individuation process, an evaluation of the scientific nature of his work will be made. This will include specifying how Jung's approach remains within an expanded idea of science, noting where it exceeds the bounds of scientific work, and identifying the varying philosophical presuppositions underlying his treatment of different issues. By carrying out a detailed examination of the individuation process and the concepts interrelated with it, Jung's contribution itself will also be clarified in several ways: ideas scattered over many years and volumes will be systematized; the sources of Jung's theoretical postulates in his experience will be discussed; and the historical development of his concepts will be traced in order to differentiate to what extent the confusion on Jung's theorizing is due to revisions which were meant to replace earlier ideas and how much arises from the complexity of the subject matter itself.

Outline of the Project Ahead

This section will provide a brief overview of the body of this dissertation. The first chapter will be devoted to situating Jung's work as science in its context

within the range of human experience. This will be done by first providing a very broad picture of the background to scientific work and then gradually narrowing the focus until Jung's own formulations come clearly into view. More specifically, attention will be given initially to the context of science in the "lived world" of everyday experience and the nature of the primary subject/object relationship. Next will follow a short discussion of the growth of reflective thought from its foundation in the lived world, and then a review of different basic approaches to reflective thought. This will lead into a consideration of the nature of scientific inquiry, especially with regard to the distinction between the natural and human sciences. After dealing briefly with alternative conceptualizations of the mind/body problem, the chapter will end by directly comparing and contrasting the assumptions of several major psychological approaches (behaviorism, psychoanalysis, structuralism and phenomenology) with those of Jung.

The subsequent chapters of the dissertation will be concerned with elaborating and analyzing Jung's own work. Chapter two will cover abstract scientific and methodological issues, including a discussion of Jung's own views on the nature and limits of psychology as a science, an examination of his notion of psychic energy, and a broad critical analysis of Jung's work as a scientific enterprise. There will also be a consideration of Jung's constructive approach, which will be distinguished from both a reductive point of view and from philosophical teleology.

The next two chapters move on to a critical evaluation of several key concepts involved in Jung's description of the individuation process. In the third chapter, the notion of "the unconscious" as an explanatory principle will be dealt with. Contrasting ideas on its most effective use, whether as a theoretical model containing "potential realities", as an entity with an ego of its own, or as an adverb describing the quality of psychic processes, will be evaluated. Jung's

distinction between the personal and collective unconscious will also be examined.

The fourth chapter will focus on the major contents of the collective unconscious, the archetypes, and again the merits of various ways of understanding them as theoretical terms will be appraised. The relationships between this concept and those of "instinct" and "symbol" will be discussed.

Using the preceding analysis of Jung's method and several basic concepts as a foundation, the remainder of the dissertation will concentrate on elaborating five overlapping points of view on the individuation process itself, and suggesting a formulation of what Jung meant by the goal of the process, the Self. The individuation process will be viewed first in energic terms, as what Jung called a "canalization of libido", the transformation of psychic energy from its instinctual sources into spiritual products. Next, from a developmental perspective, the evolution of the "problem of opposites" will be traced from repression to an awareness of the opposites, the subsequent introversion and production of a reconciling symbol, and finally the culmination in the union of opposites in suffering. Third, on a structural level, the relations between the conscious and unconscious minds during the process will be examined. These begin with identity; move through projection, inflation and alienation; and end in dialogue, with the goal as the expansion of consciousness. Fourth, individuation will be viewed as the development and incorporation into the personality of the individual's "inferior psychological function". The functions of consciousness include thinking, feeling, sensation and intuition, and the task of becoming whole is to develop sufficiently each of the four. Finally, the successive confrontations and assimilations of archetypes, including the shadow, anima and wise old man, will be described. In the section on the Self, several possible readings of its transcendence will be proposed, and it will be argued that it is a process to be undergone rather than a concrete goal which can be achieved.

Chapter 1: Psychological Theory in a Scientific and Philosophical Context

The Background to Science

One of the major contributions of the phenomenological tradition since Husserl has been the recognition that the work of science is grounded in man's experience of what is called the "lived world" (Giorgi, 1970; Kockelmans, 1967b; Romanyshyn, 1977; Schuetz, 1967). This is the world of "prereflective" experience: "the world as we encounter it in everyday experience ... the world as we live it prior to any reflection upon it as such" (Giorgi, 1970, p. 134). This world of meaning is based upon perception (Merleau-Ponty, 1968) and provides a framework for more "specialized" worlds such as that of science and empirical research (Strasser, 1967; Giorgi, 1970).

Writers from other philosophical perspectives have reached similar conclusions. For example, Whitehead (1967) asserted that the fundamental experiences underlying all scientific knowledge are vague, emotional and unarticulated. From a systems point of view, Jantsch (1976a) stated that natural systems form the basis for all formal systems.

If one accepts the thesis of the primacy of the lived world, there are two major consequences regarding the conceptualization of science. First, science must be acknowledged as possessing inherent limits (Engels, 1966; von Bertalanffy, 1968). Giorgi (1970) declared that all scientific knowledge is "perspectival", which "essentially means that every stance that we take up with respect to the world opens up some possibilities and closes off others" (p. 162). Kockelmans (1967c) stressed that no scientific theory can be complete, while Engels (1940) pointed out that scientific laws are valid not eternally, but only under certain historical and material conditions.

A second result of viewing the lived world as the matrix from which more "specialized universes" arise (Giorgi, 1970), is that science is just one of many possible ways to obtain knowledge. Wallace (1971) added to science three alternative approaches: acceptance of the pronouncements of recognized authori ties, mystical experiences and strict logico-rational analysis. Scientific inquiry also intersects with the discipline of philosophy. While science and philosophy can be differentiated by the latter's more general search for coordinating principles (Whitehead, 1967; Piaget, 1972) in a manner which need not remain restricted to empirical experience, philosophical assumptions are inevitable in any scientific work (Schwartz, 1974) and, in fact, scientific interpretation "will ultimately have to reach a supra-empirical level, and thus always requires an hermeneutic horizon" (Strasser, 1967, p. 519).

Before proceeding to discuss how scientific work develops from its foundation in the lived world, it will be helpful to examine briefly the structure of this lived world from the point of view of the subject/object relationship. The attempt to carry out this task leads to a paradoxical but illuminating result: namely, any intended description of the lived world is inevitably reflective, and thus cannot fully convey the nature of prereflective experience. In a similar fashion, the idea of a subject/object relationship itself is also a product of reflective thought, and the lived world per se actually is prior to any such distinction. The following account of the lived world in terms of relationships between "subjects" and "objects" therefore imposes concepts born of reflection in a necessarily perspectival attempt to elucidate a world prior to such reflection.

Writers from various schools of thought have approached this central problem in two main ways: they describe a reciprocal relationship or interaction between two aspects of a whole in which neither of the two is seen as primary, or they posit a primordial unity. The first approach is limited at the outset by

beginning with parts instead of a prereflective whole, while the second is soon forced to introduce differentiations within its postulated unity in order to communicate meaningfully.

Within the first approach, dialectical materialists view the basic situation as one where man is both the product of the material conditions surrounding him and also the creator of these conditions by his own actions (Marx, 1970b; Marx & Engels, 1970; Newman, 1974). Systems theorists speak of man as having a circular relationship with his environment (Waddington, 1976a) and as being part of an ecosystem (Rosenblatt & Thickstun, 1977) and integrated in the universe (Jantsch, 1976a). Phenomenologists stress the need to see man in context, in relationship with his environment and part of his world (Strasser, 1967; Van Den Berg, 1955; Merleau-Ponty, 1968). Piaget (1971b), a pre-eminent structuralist, also takes an interactionist approach.

The main project of writers employing this interactionist approach is to describe a world where both subject (man) and object (world) play a part and neither "determines" the other. A second way to try to capture the nature of the lived world is through the use of concepts designed specifically to embrace both poles of the subject/object relationship in a higher-order unity. Such concepts represent ingenious attempts to use mediational symbolic tools originating in a reflective attitude to evoke a world with no subjects or objects. In order to explicate the meaning of these concepts, however, one is compelled to dissect this unity at least to the extent of discussing parts in interrelationship, which brings us back to the first approach described above.

Dialectical materialists use the idea of human "practice" or activity in the world as a unifying conception (Newman, 1974; Sartre, 1968; Marx, 1970b). This practical-critical activity in the lived world is prior to reflective notions such as ideas or objects. Systems theorists like Jantsch (1976b) employ terms like

"symbiotization" to designate the essential unity of organism and environment. Phenomenologists have adopted Brentano's concept of "intentionality" to describe the fact that man's consciousness is necessarily directed toward his world (Van Den Berg, 1955; Giorgi, 1970; Kockelmans, 1967b,c).

Phenomenological philosophers have devised several other terms to try to portray the inherent unity of the lived world. For Strasser (1967), the "situation" is a concept encompassing the dialectic between man and his environment. Merleau-Ponty (1967) used the word "behavior" to depict the same dialectic. It is a "neutral" term similar to Marx's "practice", between materialism and mentalism, neither physical nor mental, but structural. The idea of "structure" itself is another unifying concept for Merleau-Ponty (1967). He called it the "union of idea and existence" and said it integrated both internal and external perspectives.

The Relationship between the Lived World and Science

Given the fact that the lived world is the matrix of reflective thought, the tasks remain of differentiating between the two on a structural level and describing how science develops autonomy from prereflective experience while maintaining an essential relationship with it.

Perhaps the crucial distinction which can be made between the lived world and that of science is in the attitude the individual takes towards his world. Traditionally, the stance most characteristic of a scientist at work has been called "objectivity". As contrasted with the fully involved orientation of prereflective experience, objectivity is variously described as disinterested observation (Schuetz, 1967), an impersonal attitude (Giorgi, 1970) and a theoretical attitude to an objective world (Kockelmans, 1967c).

These two orientations necessarily lead to two different kinds of experience. On a general level, man in his lived world has a more vague background

consciousness based on perception while the scientist strives for clarity, formalization and functionalization (Whitehead, 1967; Mujeeb-ur-Rahman, 1977; DeWaehlens, 1967; Kockelmans, 1967c).

More specifically, these two worlds may be distinguished by the prereflective unity of the lived world as contrasted with the polarity of experience resulting from the process of reflection. The lived world is a phenomenological world of values, meanings and intentions, spontaneous and oriented to the future (Giorgi, 1970; Schwartz, 1974; Kockelmans, 1967b; Merleau-Ponty, 1967, 1968; Grossman & Simon, 1969). This world is best characterized as possessing unitary "structures" which both reveal and conceal meaning, rather than having "relationships" between previously separate subjects and objects (Jantsch & Waddington, 1976; Merleau-Ponty, 1967).

On the other hand, the reflective action intrinsic to science creates a separation between subject and object and also introduces the idea of a temporal sequence of events. Thus, the world of science presupposes an original dualism of subject and object which must be subsequently linked together (Jantsch & Waddington, 1976; Schuetz, 1967). The unified structures of meaning and intention in the lived world are divided into such components as "cause and effect" and "means and end" (Giorgi, 1970; Merleau-Ponty, 1967; Grossman & Simon, 1969). With regard to time, the prereflective experience of the moment, where the past only exists as lived in a present which anticipates the future, becomes transformed into a discrete chain of events leading from a separate realm called the past to a present which serves mainly as a boundary between past and future (Merleau-Ponty, 1968).

Because of the contrasting natures of the lived world and that of science, different approaches are required in dealing reflectively with each of them. The intentional structures of the lived world are more amenable to such modalities as

description and explicitation than that of explanation (Van Den Berg, 1955; Merleau-Ponty, 1967; Giorgi, 1970). Science, on the other hand, also values description but places its highest priority on constructing explanations.

A danger which must be continually guarded against is the temptation to treat as primary one of the components distinguished by reflection when describing the reciprocal relationships of the lived world. While the assignment of such priorities (at least relatively) is an essential aspect of scientific explanation (as in isolating the "cause" of an event), it inevitably distorts the mutual character of the circular and interlocking structures of the lived world. There is then the risk that this relatively primary component will be treated as fixed and absolutely primary, and in this way the possible primacy of other components when seen from a different perspective may be overlooked.

For example, perception in the lived world is not adequately characterized as a passive reception by the organism of sensory data from external sources (Piaget, 1972). Instead, this process can only be fully understood as occurring through the medium of the lived body in the context of an individual and continuous personal identity (Whitehead, 1967). As such, perception is a selective process involving the interpretative activity of the subject as well as the world which is perceived (Whitehead, 1967; Marx & Engels, 1970; Merleau-Ponty, 1967; Schwartz, 1974; Cornforth, 1971b).

In a similar manner, Merleau-Ponty (1967) argued that consciousness itself, which bridges the lived world and reflective thought, is not only conditioned by the world but also forms the basis of the world as we know it. Thus, it is a mistake to see consciousness as a mere effect, since it is consciousness which constitutes the reflective idea of a cause-effect relationship to begin with. Also, while consciousness may develop in history, this historical becoming is only for

consciousness, a view which consciousness constitutes and gives itself (Merleau-Ponty, 1967).

The process of reflection transforms the field of consciousness from the fundamental lived world to a world which is thematized. What has been vague, implicit and inexact becomes clarified, explicit, exact and predictable (Giorgi, 1970; Gruber & Barrett, 1974; Schuetz, 1967). What Sartre (1968) called indirect "comprehensive" knowledge becomes direct, conceptual knowledge. Science changes the world of meaning into one of objects: phenomena and appearances grasped by perception become facts which are interpreted by an intellectual consciousness, and concrete particulars are metamorphosed into idealized abstractions claiming universal validity (Van Den Berg, 1955; Voyat, 1976; Giorgi, 1970; Whitehead, 1967; Schuetz, 1967; Sartre, 1967; Merleau-Ponty, 1968; Cornforth, 1971b).

How this process occurs has been disputed heatedly through the ages. Traditionally, opposing views have been held by empiricists, who believe that sense perception is primary and concepts are later "abstracted" from our perceptions, and idealists, who assert that ideas and consciousness are both logically and actually prior to sense perception. During the past century, however, it has been recognized that while there is some truth in both of these views, each errs in trying to establish a priority in what is essentially a simultaneous and reciprocal process.

In opposition to the empiricists' contention that theoretically "neutral" observation or perception is the basis of scientific knowledge, numerous writers have argued that <u>all</u> observation presupposes a theoretical perspective (Rosenblatt & Thickstun, 1977; Nagel, 1961; Wallace, 1971; Popper, 1968; Gruber & Barrett, 1974). Such a perspective is necessary for there to be any structure to the

observation, as even the noting of repetitions requires at least an implicit definition of what qualifies as the "same" event (Popper, 1968; Scheffler, 1967).

To answer those idealists who claim that our ideas are prior to perception, Merleau-Ponty (1968) replied that concepts and "essences" are not constructed from thin air, but arise only through our experience of things, based on perception. In fact, if one approaches a particular area with pre-established premises, the end result of the investigation is to a great extent already determined, as reality is "adjusted" to fit the theory (Newman, 1974). In order to avoid this, one must treat the real, concrete people of the lived world as the basis premises, and not ideas and abstractions (Newman, 1974; Marx & Engels, 1970).

Fortunately, there is a position midway between an empiricism which ignores the primary organization of observation and an idealism which fits reality to preconceived ideas. According to this view, "totalities" or concepts become defined only <u>during</u> the course of the research (Sartre, 1968). Similarly, Newman (1974) stated that the analysis <u>itself</u> creates the conceptual units it employs. This developmental approach, while recognizing the impossibility of theoretically neutral observation, avoids the pitfalls of idealism by permitting the theoretical framework to be constantly shaped by the subject matter itself. It is also imperative to repeat this process as much as is possible with each area to be analyzed, rather than assuming <u>a priori</u> that previously established parameters can be applied (Sartre, 1968).

Attention has been given in this section to distinguishing structurally between the lived world and that of reflection and to describing how science develops from its matrix in the lived world. Before concentrating more closely on the various approaches to reflective thought, some ideas on how it maintains an essential connection with the lived world will be explored.

Polanyi's (1965) concepts of "focal" and "subsidiary" awareness help to elucidate this relationship (Schwartz, 1974). He illustrated his ideas (1965) with the example of two stereospecific photographs, one eye looking at one, the other eye at the other. Then, "we may describe the situation by saying that we are focally aware of the stereo-image, by being subsidiarily aware of the two separate pictures" (p. 800). Thus, a subsidiary awareness of the parts serves the function of focussing our attention on the whole, which in this way has meaning. If one applies these notions to the relationship between the lived world and reflective thought, one might say that it is only through a subsidiary awareness of the lived world, involving the use of our body, that we become focally aware of the world of reflection.

Polanyi (1965) took pains to distinguish subsidiary awareness from subconscious or preconscious awareness. Instead, the relationship of the "clues" (in our example, the lived world) to that which they indicate (reflective thought) is a logical relation, which may best be described as "tacit inference", since the inferences drawn from the clues are not explicit. In fact, "the fusion of the clues to the image on which they bear is not a deduction but an integration" (Polanyi, 1965, p. 800).

Sartre (1968) also ventured an integration of the lived world and reflective thought through his "progressive-regressive" method. The first step in this approach to a subject matter bears close resemblance to traditional science: the "regressive" situating or locating a given phenomenon within a larger framework. It is akin structurally to both logical classification and the subsumption of particulars under general laws. The second step represents Sartre's attempt to integrate the insights of the existential philosophical tradition into science. In an effort to maintain the uniqueness of the particular event, the "progressive" method consists in trying to reproduce the real experience of the concrete

individual, to "recover his project" in its actual historical development. The appearances themselves have significance and ought not to be "dissolved" into an abstract theory. Sartre insisted that only by integrating the progressive reproduction of the experience in the lived world with the regressive treatment of that experience as an instance of an abstract class can one gain a full understanding of a phenomenon.

An apt summary of the implications of the relationship of the lived world to that of reflective thought can be provided by Merleau-Ponty's (1967) concept of "ambiguity". This ambiguity arises most immediately from the use of the same linguistic terms to designate phenomena which are in fact very diverse due to their origin in two different levels of experience. Thus the "organization" and "rationality" occurring spontaneously in the lived world do not necessarily correspond to the "organization" imposed by scientific thought (Merleau-Ponty, 1967; Schwartz, 1974). Similarly, the "lived body" and "lived world" of nature do not represent the same things as the anatomist's "body" or the scientist's "nature" (Wild, 1967; Merleau-Ponty, 1967; Schuetz, 1967). Also, the real subject, a flesh and blood person, is not equivalent to the abstract "organism" or "epistemic subject" of reflective thought (Grossman & Simon, 1969).

The ultimate source of this linguistic ambiguity itself is the same as that encountered in the previous section on describing the structure of the lived world from the point of view of the subject/object relationship: the fundamental inability of any reflective mediational tool to fully capture pre-reflective experience. Thus, reflective consciousness, positioned on the borderline between the lived world and that of science, points simultaneously in its expressions in both directions and thereby exhibits its irreducible ambiguity.

Scientific Approaches to Reflective Thought

This section will be devoted to outlining in very general terms the basic approaches to reflective thought which are taken by scientists. All approaches must deal either implicitly or explicitly with the two-pronged task formulated by Sartre (1968) and discussed at the end of the last section: establishing a phenomenon's uniqueness while demonstrating its place within the continuity of nature.

With regard to the subject of man, systems theorists and phenomenologists illustrate two different emphases in carrying out this task. While systems theorists acknowledge the existence of both a continuity of nature and of qualitative differences within nature (Buckley, 1968), their focus is much more on the side of continuity and uniting both mechanistic and organismic approaches under the aegis of one comprehensive theory (Bowlby, 1969; von Bertalanffy, 1968; Marney & Schmidt, 1976). Phenomenologists and existentialists, on the other hand, stress man's unique place in nature as indicated by such specifically human achievements as being self-conscious, using symbols, conceiving possibilities and both expressing and creating meaning (Merleau-Ponty, 1967).

Regardless of their philosophical orientation towards man's place in nature, scientists utilize two basic approaches to their subject matter, the structural and the developmental, which will be the main topics of this section. The structural point of view is concerned with such issues as interactions of elements and hierarchies within a fairly limited period of time, while the developmental perspective deals with the transformations of the structures themselves over time. Holt (1967) traced the historical origins of these approaches in the conflict between "being" and "becoming". In the contemporary literature, Piaget (1971) and Voyat (1977) discussed the importance of studying history and process as well

as structure, while Skinner (1965) mentioned both the environment and past history of behavior as significant variables.

The Structural Approach

The general notion of "system" provides the basic unit of reference for the structural approach. Rosenblatt and Thickstun (1977) used the term "system" to refer to "elements in interaction", and Murphy (1977) identified four aspects of a system: its parts, the relationships between the parts, the function of the whole system, and the relationship of the system to its environment. Piaget's (1971b) idea of "structure" as a self-regulating whole with a law-governed system of transformations is a more specific and delimited subset of the total class of systems that is particularly relevant for more complex systems.

In order to examine more closely the nature of a system, it will be beneficial to identify its two main dimensions: the static and the dynamic. It must be emphasized that these dimensions refer to theoretical perspectives on a system which are isolated for the purpose of analysis, and not to inherently separate features. In fact, it will become obvious that for most purposes each dimension is meaningful only in combination with the other.

The static view of systems is essentially spatial and includes such concepts as wholes and totalities (Piaget, 1971b; Engels, 1966; Sartre, 1968); parts, elements and contents (Murphy, 1977; Rosenblatt & Thickstun, 1977; Pankow, 1976); and context and environment (Cornforth, 1971a; Newman, 1974; Jantsch, 1976b). The dynamic view, on the other hand, introduces a temporal dimension by considering in a limited way the notion of change. From this perspective, the system or structure is treated as maintaining a relatively invariant identity, while it engages in internal processes, interchanges with its environment, or both. Concepts such as internal relations (Murphy, 1977; Cornforth, 1971b; Engels, 1966; Pankow, 1976), interaction (Rosenblatt & Thickstun, 1977; Voyat, 1977), equilib

rium (Jantsch, 1976b; Piaget, 1971b) and function (Jantsch, 1976b; Pankow, 1976; Prigogine, 1976; Piaget, 1971b) are central to this point of view.

The static dimension For some time it has been commonplace to distinguish two opposing, qualitatively different approaches to the static dimension of structures: one that viewed wholes as sums of essentially independent parts, and one that treated these wholes as exhibiting properties transcending those of its component elements, because of the organization of those elements. Nagel (1961) argued persuasively, however, that instead of seeing these two perspectives only in their opposition, one can view each as representing one end of a continuum which ranges along a dimension of organization from a random distribution to extremely organized structures. If one uses this conceptualization, it becomes clear that the difference between any two wholes regarding additivity may be seen as a matter of degree of organization.

At one end of the continuum, systems with a random distribution of elements are described as being characterized by "unorganized complexity" (von Bertalanffy, 1968). The parts or units of these systems are seen as independent and isolated from each other (Russell, 1969; Cornforth, 1971a; Zeleny & Pierre, 1976; Jantsch & Waddington, 1976; Maruyama, 1976; Mao, 1971). When combined with one another, these elements are additive in a linear manner, creating "composites" and "sums" (Schwartz, 1974; Piaget, 1971b; Maruyama, 1976; Buckley, 1968; Hall & Fagan, 1968; Nagel, 1961).

Physics, especially classical mechanics, is perhaps the science whose subject matter conforms most closely to the "unorganized" systems described above. The atomistic characteristics of this area of study make it amenable to employing the methods of physics: experiments to isolate relevant factors, and the establishment of relationships of parts to one another by means of laws (Pankow, 1976; Carnap, 1966; Cornforth, 1971a). The existence of discrete and

additive elements also lends itself well to such techniques as quantification and classification (Maruyama, 1976).

Systems which exhibit varying degrees of organization make up the rest of the continuum described above. Most simply, "organization" can be understood as that which leads the relationship between two elements in a system to depend on one or more other elements (Ashby, 1968a). Thus, instead of isolated and independent components, the parts of these systems have internal relationships, connections and interactions (Russell, 1969; Cornforth, 1971a; Marx, 1964; Taylor, A., 1976; Maruyama, 1976; Markley, 1976; Merleau-Ponty, 1967; Buckley, 1968; Kremyanskiy, 1968). Maruyama (1976) characterized these relationships as mutual, symbiotic and contextual.

Because of the organization of their elements, such systems are not mere composites or sums, but totalities displaying a unified structure (Jantsch & Waddington, 1976; Piaget, 1971a, 1971b). Merleau-Ponty (1967) emphasized that these systems are "wholes" in their own right, and not just "unconscious syntheses". The components of an organized system may be arranged in a hierarchy with several possible levels, so that a given structure may comprise many sub-structures (Jantsch & Waddington, 1976; Marney & Schmidt, 1976; Bowlby, 1969; Rosenblatt & Thickstun, 1977). Categorization of a particular system as a part or a whole is relative to the observer and his perspective, since a whole may itself be a member of a larger system, while a part may in turn have components and thus form a sub-system of its own (Buckley, 1968; Miller, Galanter, and Pribram, 1968). The behavior of the parts of an organized structure can be explained as being governed by "rules" (Zeleny & Pierre, 1976; Waddington, 1976b; Rosenblatt & Thickstun, 1977; Merleau-Ponty, 1967), and this behavior often serves to carry out a "function" (Piaget, 1971b).

Their internal organization also affects the nature of the relationships between the wholes and parts of these systems. This situation is suggested in the well-known idea that "the whole is greater than the sum of its parts" (Cornforth, 1971a). The whole controls the parts, and makes visible through the interaction of the elements new features and properties not actualized in the elements alone (Piaget, 1971b; Redfield, 1968; Kremyanskiy, 1968). Nagel (1961) clarified the point that their position in the context of the whole does not change the parts themselves, but does modify their effect. In these systems, individual facts have meaning only in relation to the totality (Sartre, 1968; Merleau-Ponty, 1967). Thus, each part both depends on and affects the whole, as any change in a part of the system affects the whole system (Merleau-Ponty, 1967; Hall & Fagan, 1968).

Another perspective on the relationship between the parts of an organized system is provided by dialectical materialists. These systems are viewed as invariably possessing internal "contradictions" (Mao, 1971). Contradiction is defined as a polarity and interpenetration of opposites (Cornforth, 1971a; Engels, 1940). The opposites are interdependent, and are simultaneously opposed and united in struggle (Mao, 1971; Cornforth, 1971a).

There are two types of "struggle" which are discussed, one of which is relevant to the static dimension here being examined, while the other pertains to the developmental perspective which will be the subject matter of the second part of this section. The first type of contradiction, whereby opposites form a unity in a static manner, is in the area of meaning. Relative terms such as "big" or "hot", which range along a continuum, only gain meaning in relation to their opposites ("small", "cold"). Similarly, the full meaning of a great variety of concepts becomes clear only when seen in relation to their "opposites", as when an individual truly understands what it is to be a person by studying other people as well as himself, or when a psychologist comprehends the "essence" of man by

exploring what it is that sets him apart from other animals. It is in this sense that an idea depends on its "opposite" for its very meaning (Mao, 1971).

The qualitative differences which are found between organized and unorganized systems have spawned correspondently different methods with which to investigate them. Piaget (1971b) identified the contrasting methods as analysis, whereby one seeks to dissect a phenomenon into its constituent parts, and synthesis, a dialectical view that aims at understanding how the parts function together as a whole.

While analysis is generally more appropriate for a random system and synthesis for an organized whole, Piaget (1971b) criticized an exclusive focus on "emergence" and wholes for organized systems. He stated that such an approach yields superficial results unless accompanied by an analytic search for "laws of composition" and "deep" structures. It is this combined approach to which he referred when he said that structuralism is a method (Piaget, 1971b). Merleau-Ponty (1967) also saw value in both analysis and synthesis, but believed that the structure as a whole should be elucidated before an analysis of its parts is attempted.

The dynamic dimension The dynamic point of view is concerned basically with processes which occur in time and may involve change but not development. Thus, the focus is on either internal processes in a system whose fundamental nature remains invariant or external relationships between systems which maintain a fairly stable identity, but not on the transformation and development of the system itself. Three types of dynamic processes are generally distinguished: causal, functional or teleonomic, and truly teleological or purposive. A short description of each of these types of interaction will be given and then the relationships among the three will be discussed.

One of the main tasks of traditional science has been the study of causal processes. Finding a "cause" for a given event has involved isolating particular actions from the entire situation which are believed to provide both the necessary and sufficient conditions for the event (or "effect") to occur (Engels, 1940; Moore & Lewis, 1968). In this way, the initiation and persistence of a process can be explained, with an emphasis on the elements of the system (Nagel, 1961).

The cause/effect process is conceptualized as a sequence in time, and has traditionally been seen as a linear, unidirectional process (Rosenblatt & Thickstun, 1977; Buckley, 1968; von Bertalanffy, 1968; Maruyama, 1976). One type of cause is conceived of as an external, independent event (Merleau-Ponty, 1967; Mao, 1971). This model is particularly appropriate for "closed" systems, where an external stimulus impinges on a system which then returns to a closed state (a relative independence from its immediate environment). In a closed system, the final equilibrium of the system is determined by the initial conditions, including any causes which might be active (von Bertalanffy, 1968). Linear causality may also occur within a system when it is arranged in a hierarchy, where a change in one factor determines a change on a "subordinate" level in a unidirectional manner (Bowlby, 1969; Jantsch, 1976b; Maruyama, 1976).

By way of contrast, the fields of biology and cybernetics provide examples of processes best understood from a functional or teleonomic perspective. The focus here is on functions and goals of the system as a whole, on the molar level, while the activation and mechanism of particular sequences of events and the isolation of causes is of secondary importance (Taylor, 1970; Rosenblatt & Thickstun, 1977; Buckley, 1968). "Function" is defined as a "necessary condition" or an "essential effect", and functional analysis explains a recurrent activity or behavior pattern by describing its role in the system, and how certain parts maintain the global behavior of the whole (Nagel, 1961; Hempel, 1970b).

Similarly, teleonomic explanations are concerned with laws governing the end or goal to which various means lead (Moore & Lewis, 1968).

In addition to the stress on wholes and functions as opposed to parts and mechanisms for causal processes, there are other distinguishing features of teleonomic processes. Mutualism and complementarity between parts of a system, or between a system and the environment, are manifested instead of linear causality (Maruyama, 1968, 1976). In this regard, the concept of continual "feedback" from the environment or another part of the system is crucial, and the entire feedback loop is treated as the unit of study (Miller et al., 1968). A corollary of this mutualism is a decreasing emphasis on unidirectional hierarchies in favor of multi-level arrangements where feedback occurs between levels in both directions (Jantsch, 1976b).

As in causal processes, there are two kinds of functional or teleonomic processes: one involves the relationship between a system and an external goal in its environment, while the other is concerned with intra-systemic self-regulation (von Bertalanffy, 1968). The distinction is somewhat artificial and really only makes exposition more convenient, however, as obtaining an external object can often aid in maintaining a system's internal equilibrium, while self-regulation may require an interchange with the environment.

In attaining a goal outside the system, feedback from the environment can direct and correct progress towards a pre-set target (Bowlby, 1969; Rapoport & Horvath, 1968; Rosenblatt & Thickstun, 1977). Thus, behavior is progressively constructed in self-correcting adjustments to external conditions, and is not just given an initial momentum by a "cause" which then ceases to influence it (Shibutani, 1968).

Internally, such systems regulate themselves by performing various functions which maintain a fairly steady equilibrium (Piaget, 1971a, 1971b; Scheffler,

1963; Marney & Schmidt, 1976; Nagel, 1961; Voyat, 1977). This self-regulation is often in the service of self-maintenance, and as such is conservative and stabilizing (Taylor, 1976; Piaget, 1971b; Hall & Fagan, 1968; Buckley, 1968). A functional or teleonomically oriented system frequently utilizes information from negative feedback in order to produce a constant result by various means and despite different initial conditions (Jantsch, 1976b; Taylor, 1976; Merleau-Ponty, 1967; Sommerhof, 1968).

Purposive processes or true teleology are most evident in human behavior. Nagel (1961) was careful to distinguish "purposes" from "function", and these processes are characterized by such uniquely human traits as the creation of goals and a consideration of future possibilities (Vickers, 1968; Whitehead, 1967; Merleau-Ponty, 1967).

Rosenblatt and Thickstun (1977) have classified five broad approaches which have been taken to the question of purpose and human motivation. First, homeostatic, equilibrium models similar to those employed for functional processes can be used to explain human actions through concepts like "drive" and "instinct". Second, incentive models stress both the role of environmental cues and the anticipation of rewards by external objects, rather than internal drives. Third, cognitive theories utilize concepts such as expectation, information-processing and plans. To account for human action from this perspective, one must consider the individual's aims, values, beliefs, ability, information and alternatives available, rationality and consequences of the action (Hempel, 1970a; Scheffler, 1963). A fourth type of theory is called "holistic" and is concerned with the interaction of man and his environment. Rosenblatt and Thickstun (1977) include theories postulating inherent urges for self-realization, self-actualization and individuation in this category. Finally, humanistic and existentialist approaches emphasize notions like free will and man's uniqueness.

It is clear from the above descriptions that a simple one-to-one correspondence between subject matter (inanimate nature, animals and some machines, humans) and dynamic conceptualization (cause, function, purpose) is inadequate. While there is a general consensus about using a causal approach for inorganic matter, both causal and functional perspectives are applied to animals, and there is an even wider variety of points of view on human behavior. The general question of the relationships among the different realms of experience (physical, biological, human) will be explored in the fifth section of this chapter, which deals with the distinction between the natural and human sciences. At this point, only the most basic relationships between causal, functional and purposive formulations will be outlined.

With regard to teleonomy and causality, Rosenblueth, Wiener and Bigelow (1968) stated that they are independent but not mutually exclusive ways of understanding a phenomenon. The two approaches are translatable, in the sense that for a system receiving feedback, the initial stimulus may be conceptualized as a cause which can lead to indeterminate results depending on the state of the system (Rosenblatt & Thickstun, 1977). A major difference is that a cause is concerned with the activation of a process, while a function deals with its result (Bowlby, 1969). Also, Scheffler (1963) pointed out that teleonomic and functional accounts are not strictly speaking "explanatory", unlike causal versions, but only "substantiating", since the function or goal does not precede in time the event to be explained.

While causes and purposes, or "reasons", can be easily distinguished in extreme cases, Toulmin (1970) argued that in fact they range along a continuum. Peters (1970) agreed with this, and asserted that drives and motives were somewhere "between" reasons and causes. As with functions, purposes can also be described in causal terms (Taylor, 1968). For example, "accepting" a reason, the

idea or image of the goal and the process of appraising a situation have all been considered causes (Toulmin, 1970; Scheffler, 1963; Waddington, 1966; Bowlby, 1969).

Systems theorists have also made an attempt to relate teleonomic and purposive processes. Employing Langer's (1970) analysis, they see man's consciousness and "felt experience" as just a phase of the same basic teleonomic processes which occur in animals. In this way, they have begun to assimilate human purposive action to a more general teleonomic model, but one which is grounded in biology. To cite some examples of this assimilation, Buckley (1968) viewed purposes as constituting a variety of feedback; Bowlby (1969) described a "wish" as the awareness of a set goal; and Miller, Galanter and Pribram (1968) saw intent as the uncompleted part of a plan. A critique of this project to conceptualize the human order with concepts based on biological phenomena will be given in the fifth section of this chapter.

The Developmental Approach

Many writers agree on the importance of a developmental perspective, whether it be called the description of the genesis of a particular system or historical analysis (Cornforth, 1971b; Marx, 1964, 1970a; Marx & Engels, 1970; Piaget, 1972; Hartmann, 1977). Zigler (1963) defined the developmental point of view as the investigation of the changes in the form of the structures themselves over time, as contrasted with interactions occurring within or between relatively invariant structures. A similar approach is taken by those followers of Marx who call the study of the laws of motion "dialectics" (Engels, 1966).

Those for whom the developmental approach is essential tend to share a basic presupposition: that continual change is inherent in the nature of things, and not something external which is imparted by other objects (Cornforth, 1971a; Sartre, 1968). This fundamental idea is expressed in various ways: Whitehead

(1967) stated that reality is process; Engels (1940, 1966) believed that motion is the very mode of existence of matter; and Mao (1971) argued that internal self-movement is primary, and that any observed unity is only temporary while struggle and change are absolute.

The adoption of this point of view has many theoretical implications, including the establishment of a broader context for the structural approach previously described which highlights its relativity. It is clear that the "static" dimension of the structural approach must be understood as a limited perspective on reality and not elevated to the status of dogma. Thus, the ubiquity of change, development and becoming reveals the one-sided view which results from an insistence on creating fixed and rigid categories containing static objects and finished products (Engels, 1966; Vygotsky, 1978). An unqualified adherence to an "identity principle" can be seen to be misleading, since it ignores the phenomenon of continual change (Sartre, 1968; Engels, 1940). Merleau-Ponty (1967) also took this phenomenon into account when he suggested that accepting the possibility that a thing could display modified properties depending on the situation is more fruitful than automatically assuming the existence of several <u>different</u> things, each with <u>invariable</u> properties. Even the foundations of physics have been affected, as the inclusion of time in relativity theory has resulted in the "event" replacing the "object" as the basic unit of study (Russell, 1969).

A commitment to the developmental approach also leads to several consequences for the dynamic dimension of the structural approach. First of all, there is no longer a need to postulate underlying "motive forces" for observed interactions, since the assumption of spontaneous and continual activity means that only the <u>direction</u> of movement, and not its <u>existence</u>, needs to be explained (Miller et al., 1968; von Bertalanffy, 1968; Rosenblatt & Thickstun, 1977). Second, laws which are discovered to govern certain interactions are not eternally

immutable, but must themselves be modified as the systems they explain develop (Newman, 1974; Marx, 1970). Third, static equilibriums should be seen as both temporary and relative, since the fluctuations in a system which affect its stability require the idea of a dynamic equilibrium (Engels, 1940; Holling, 1976; Jantsch, 1976b; Prigogine, 1976).

A discussion of several features of the developmental approach will now follow. The assumption of change as inherent in things leads to a stress on becoming, sedimentation and process, rather than static essences (Merleau-Ponty, 1968; Jantsch, 1976b). There is a rejection of absolute classes, fixed categories and the principle of "non-contradiction" in favor of a belief in the essential role of internal contradictions (Cornforth, 1971b; Newman, 1974; Voyat, 1977; Taylor, 1976).

There are various ways of understanding the centrality of contradiction. For Cornforth (1971b), the real contradictions in things and the resulting struggle of opposites are what is at the source of change and development, while both Engels (1966) and Mao (1971) believe that the very meaning of change implies contradiction, since as things are becoming, they are thereby being both themselves and something else. This second view makes it clear how a static framewrok of "being" can only conceptualize a changing reality in terms of contradiction. Both perspectives are in fact different views of the same phenomenon, as change and contradiction are each involved in constituting the meaning of the other, and neither is ultimately primary. Piaget (1971b) made a similar point when he described contradiction as a "consequence of the inseparability of interactions" (p. 126).

Change itself may be seen as only one side of a dialectical unity, since in order for the notion to be intelligible, something must remain the same. In order to understand any transformation, one must discover a conceptual invariant, and

determine in what manner a system retains its identity as it changes (Piaget, 1971b, 1972). In linking the development of structures, Piaget (1971b) identified the subject as such an invariant in its role as the center of activity. In the biological realm, Holling (1976) employed the idea of "resilience" in a similar fashion in discussing a system's ability to persist while absorbing change. Erikson's (1968) work on identity formation and consolidation deals with the same issue with regard to human development.

The transformation of quantitative change into qualitative change is a key concept which dialectical materialists have borrowed from Hegel (Cornforth, 1971b; Engels, 1940, 1966). The meaning of this idea is that after a period of continuous development in a system, discontinuities appear at "nodal points" in the form of discrete "leaps" and qualitative changes (Cornforth, 1971b; Abraham, 1976). Vygotsky (1978) characterized this process as "uneven development" and explained that in this way, revolution and evolution may be understood as complementary.

Systems theorists work with similar notions in their discussion of open as opposed to closed systems. Open systems, or "dissipative structures" (Prigogine, 1976) are contrasted with isolated systems with regard to the kind of equilibrium they reach. Whereas closed systems build up entropy and use mechanisms of goal-correction, open systems reach a "steady state" by means of dynamic interaction with an external environment, and are neg-entropic in character (Rosenblatt & Thickstun, 1977; von Bertalanffy, 1968). After the development of an open system passes a certain limit, or if an external disturbance becomes too great, there will be a qualitative, and often permanent, change (Holling, 1976; Prigogine, 1976).

Another basic feature of open systems which is relevant to the developmental approach is variously called self-organization, self-differentiation and

self-transcendence (Jantsch & Waddington, 1976; Zeleny & Pierre, 1976; Taylor, 1976; von Bertalanffy, 1968). This process is viewed as occurring by "bootstrapping" (Jantsch & Waddington, 1976) and as providing a model for the progressive changes which occur in evolution (Buckley, 1968). The gradual change into a new system is one in which the final state is related to its beginnings, but there is no "pre-existent" goal (Taylor, 1976; Jantsch, 1976b).

Different writers have presented alternative ways of describing the mechanisms of self-organization. Piaget (1971b) introduced the idea of "equilibration" as the process underlying structure formation. Equilibration is a "dynamic synthesis" in which new constructions arise from internal regulations (Voyat, 1977).

Systems theorists utilize the notion of "positive feedback" in their attempt to explain change in open systems (Jantsch, 1976b; Taylor, 1976). A positive feedback model can account for the fact that similar initial conditions can produce divergent results by showing how small initial differences can be magnified in a "deviation-amplifying" way (Maruyama, 1968, 1976).

Another characteristic of development explored in some detail by Hegel is the fact that its form is not linear, but rather approximates a spiral or helix (Gruber & Barrett, 1974). Three aspects of this process are typically distinguished. First, there is a given milieu, construction, or system. Then, an event occurs to deny or negate the original situation. Finally, both thesis (original system) and antithesis (negation) are elevated into a new synthesis (Piaget, 1971b). This synthesis is not radically novel and discontinuous, but instead preserves and retains the past as it transcends and surpasses it (Cornforth, 1971b; Sartre, 1968; Strasser, 1967; Merleau-Ponty, 1967). Dialectical materialists have called this process the "negation of the negation" (Cornforth, 1971b; Engels, 1940, 1966). It fleshes out the general framework provided by Piaget's (1971b)

statement (discussed above) that a system retains some sort of identity as it changes.

On a descriptive level, systems theorists have noted an increase in three qualities as a result of development: differentiation, complexity, and integration, structure and order (Jantsch & Waddington, 1976; Maruyama, 1976; Rosenblatt & Thickstun, 1977; Buckley, 1968).

The Relationship between the Structural and Developmental Approaches

A very brief discussion of the relationship between the two approaches described above will be furnished before considering the structural and developmental aspects of knowledge itself in the last part of this section. Many writers have argued for the utility of both a synchronic, structural approach as well as a diachronic, developmental one (Rosenblatt & Thickstun, 1977; Taylor, 1976; Kockelmans, 1967b). In fact, Jantsch (1976b) claimed that the entire notion of evolution may be seen as process interacting with structure.

With regard to the proper use of each approach, a structural view may be conveniently conceptualized as creating a "frozen" segment of a developmental process. Such a perspective often suffices either for fairly stable systems or for short periods of time. Systems in transition, however, unstable systems, or systems studied for long durations may require the developmental point of view for a more complete understanding (Prigogine, 1976).

Structural and Developmental Aspects of Knowledge Itself

While the previous parts of this section have focussed on the subject matter of reflective thought, scientific knowledge itself can be understood in a similar manner. The relationship of knowledge to action, for instance, has both a structural and a developmental aspect. Sartre (1968) stated that action as a general phenomenon provides the foundation of knowledge. Viewed statically, knowledge is a subset of the larger class of actions, or praxis, and consciousness

only manifests itself as part of conscious existence (Piaget, 1971a, 1971b, 1972; Sartre, 1968; Cornforth, 1971b; Marx & Engels, 1970). Dynamically, one understands only by acting, since intelligence consists in changing situations (Pankow, 1976; Piaget, 1972). On a developmental level, Piaget (1971b, 1972) has described how scientific knowledge has its origins in sensori-motor actions, which lay the groundwork for reflective abstraction and operational thought.

Considered more generally, knowledge can be seen as structurally including two basic components, both of which are essential. The first comprises the facts and experiences given in perception, while the second is composed of concepts, resulting from such methods as logical analysis, interpretation, operational thought and reflection (Piaget 1972; Whitehead, 1967; Giorgi, 1970; Kockelmans, 1967b; Sartre, 1967).

On a developmental level, knowledge should be conceptualized as a process (Piaget, 1972). Both Piaget (1971a, 1971b, 1972) and Sartre (1968) agree that the concepts which are basic to scientific knowledge are constructed, rather than being "ready-made" or innate. Mischel (1977) stated that meanings are developed over time, not preformed, while Cornforth (1971b) noted that the acquisition of truth is gradual.

The Nature of Science

The Definition of Science

As discussed at the beginning of the second section of this chapter, it is the individual's attitude towards the world which fundamentally differentiates science from other approaches to reality. This stance, which has traditionally been called "objectivity", involves both a desire for accurate, reliable and precise knowledge which can be accepted by the scientific community (Giorgi, 1970; Rosenblatt & Thickstun, 1977), and a belief that rationality, as embodied in theories, can

transcend the limits of perception (Schwartz, 1974).

This orientation serves as a conceptual foundation for an enterprise whose essential characteristics have been widely discussed by philosophers and by scientists themselves. Four basic sets of attributes are often agreed upon as providing a definition of science broad enough to include a wide variety of methods and subject matters, yet narrow enough to distinguish it meaningfully from other approaches to reality.

First, with regard to its internal structure, science must be systematic, organized and rigorous (Markley, 1976; Cornforth, 1971b; Nagel, 1961; Giorgi, 1970). Second, it must take a problem-solving approach to a delimited subject matter (Giorgi, 1970; Cornforth, 1971b; Piaget, 1972; Kockelmans, 1967c). This criterion includes attention to specific details of the subject matter in a clear and intelligible manner (Giorgi, 1970; Scheffler, 1963; Schwartz, 1974). Third, with respect to its claim to truth, scientific work must be undertaken with a critical attitude, and independent criteria must be available to test the results by the processes of verification and falsification (Giorgi, 1970; Scheffler, 1967; Piaget, 1972; Nagel, 1961; Skinner, 1965; Popper, 1968). Fourth, science must strive toward universality: toward being accepted and shared intersubjectively by the scientific community (Giorgi, 1970; Kockelmans, 1967c; Schwartz, 1974). What is unique to science in this quest for universal truth is the requirement for all of its knowledge to be potentially linked, either directly or indirectly, to empirical observation and experience (Giorgi, 1970; Scheffler, 1963; Whitehead, 1967; Nagel, 1961; Marney & Schmidt, 1976; Popper, 1968).

The Functions and Purposes of Science

Science functions in two fundamental ways: it describes and classifies phenomena, and it tries to explain them. Explanation, in turn, can serve several purposes. First, it furthers our understanding of reality (Waddington, 1966;

Hempel, 1970a; Zigler, 1963). Second, explanation enables us to predict and thereby to control future events (Borger, 1970; Waddington, 1966; Hempel, 1970a; Marney & Schmidt, 1976; Skinner, 1965; Zigler, 1963; Schwartz, 1974; Rapoport, 1968; Cornforth, 1971b; Wallace, 1971; Popper, 1968; von Bertalanffy, 1968). Third, it aids in constructing models of various aspects of reality (Borger, 1970; Klein, 1977). Finally, on an internal level, explanation can suggest new theoretical developments, either in pointing toward unexplored directions for research or by filling in the gaps in existing knowledge (Waddington, 1966; Hempel, 1970a; Nagel, 1961; Klein, 1977).

The Background to Science

The first section of this chapter dealt with the lived world as the background to science. Upon closer scrutiny, however, there is a significant "border area", where a clear differentiation between what is "science" and what is "background" cannot be made. In fact, while it is true that science has a philosophical context, it is also the case that some philosophy is itself part of science (Giorgi, 1970).

According to Polanyi (Schwartz, 1974) the presence of the lived world within science as well as around it reflects the human basis of science. This human basis consists of the tacit knowledge which is implicit in all scientific work, but of which there is only subsidiary awareness (Polanyi, 1965; Schwartz, 1974). A major example of this tacit foundation to science is the overriding importance of one's (generally unspoken) theoretical or philosophical approach for determining the methods which will be used (Giorgi, 1970; Vygotsky, 1978; Whitehead, 1967). Also, the criteria which are used to evaluate theories are arbitrarily chosen by the scientific community and reflect the implicit assumptions of that community (Schwartz, 1974). In addition, many practical scientific activities, such as the skills involved in correlating observation with theoretical

constructs, are transmitted through implicit "paradigms" rather than by explicit "rules" (Kuhn, 1970; Schwartz, 1974).

The Contents of Science

A brief summary of the components of the scientific enterprise will be given before focussing on the more specific topics of theory formation, theory evaluation and general methodological rules. As described above, values and philosophical models are implicit in all scientific work (Kuhn, 1970). "Facts" determined by observation are obviously fundamental (Gruber & Barrett, 1974; Wallace, 1971; Kuhn, 1970; Cornforth, 1971b; Whitehead, 1967; Nagel, 1961; Piaget, 1972). These facts are related in varying ways by theories and models (Gruber & Barrett, 1974; Wallace, 1971; Hempel, 1970a; Nagel, 1961). Theories and models may include concepts, postulates, propositions, empirical generalizations, laws and definitions (Kuhn, 1970; Wallace, 1971; Cornforth, 1971b; Nagel, 1961). Theories and models can generate hypotheses and predictions about events in the world by means of such methods as logical deduction and the creation of "correspondence rules" which link theoretical concepts with observable phenomena (Kuhn, 1970; Wallace, 1971; Piaget, 1972; Nagel, 1961). Hypotheses and predictions can then be tested by experiments with suitable instruments in order ultimately to yield judgments and decisions regarding the validity and usefulness of the theories from which the hypotheses and predictions were derived (Kuhn, 1970; Cornforth, 1971b; Wallace, 1971; Piaget, 1972).

Induction and theory formation Theory formation is a complex process involving interaction between concepts and observation which exhibits many of the features discussed in the previous section under the "developmental point of view". What follows is an oversimplified linear version of the logical structure of this process, from facts to theories, which does not attempt to recreate its stages as they actually occur.

Specific facts and observations are described by scientists and are related by general principles and laws (Whitehead, 1967; Piaget, 1972; Skinner, 1965). The method by which principles and laws are formed is called induction. Induction is a mysterious process which is difficult to bring into focal awareness, and some philosophers have even argued that it is not a part of science (Popper, 1968). The fact that explicit descriptions of and justifications for concept and theory formation have not been (and may never be) developed, however, does not seem to be sufficient reason for excluding such crucial processes from science. In fact, as discussed in the last part of this section on the background to science, there are many areas of science which rely on tacit knowledge.

Induction involves the creation of idealized concepts which attempt to represent the "essences" of phenomena and their interrelationships (Merleau-Ponty, 1968; Wallace, 1971). The aim of induction is the formation of empirical generalizations and laws (Wallace, 1971; Carnap, 1966). The systematic coordination of these laws is then known as a theory (Wallace, 1971; Skinner, 1965; Kockelmans, 1967b).

Wallace (1971) has distinguished these types of scientific theories: causal, or explanatory; compositional (the description of components against a background); and classificatory. The emphasis in this dissertation will be on explanatory theories, as these have been most intensively studied.

There are also various kinds of explanations. Sherwood (1969) classified them according to whether they explained by means of origin, genesis, function, significance or expectation. An overlapping but not identical list was made by Nagel (1961), who included deductive, probabilistic, functional or teleological, and genetic explanations.

Historically, the dominant form of scientific explanation has been deductive and causal. This type of explanation is composed of relevant laws in

conjunction with certain facts or initial conditions (Hempel, 1970a; Scheffler, 1963; Nagel, 1961). The premises are assumed to be true, and the explanation is intended to elucidate how a particular phenomena occurred (Nagel, 1961; Wallace, 1971). Laws attempt to be universally valid, and they are used to generate predictions for testing (Carnap, 1966).

The "cause" is seen as the total situation, including whichever laws may be operable (Carnap, 1966; Hempel, 1970a; Scheffler, 1963). In order to qualify as a cause, a situation must satisfy four criteria with regard to the event to be explained: it must provide both necessary and sufficient conditions for the event; it must be spatially contiguous with it; it must precede the event in time; and it must be functionally related to it in an asymmetrical way (Nagel, 1961).

Traditionally, the cause has been seen as an "independent variable" which leads to a certain effect (Skinner, 1965). Careful examination of the issue reveals, however, that the selection of any single event as "the" cause is to some extent arbitrary and misleading (Carnap, 1966). In fact, the effect manifests a functional dependence upon an entire process or situation, including a set of boundary conditions which are usually not explicitly stated (Nagel, 1961; Carnap, 1966). Thus, any particular prior event actually may have only a degree of causality, and is not "the" cause (Merleau-Ponty, 1967).

According to Nagel's (1961) criteria listed above, an event with a high degree of causality may be considered the "sufficient" condition for the effect, while the "necessary" conditions are the background variables or boundary conditions (Taylor, 1970). Knowledge of the sufficient conditions is often adequate for making an accurate prediction, while a more complete explanation requires the elaboration of relevant boundary conditions (Churchman & Ackoff, 1968).

A brief discussion of the roles of observational and theoretical terms in scientific theories will follow before turning to the topic of deduction and theory

evaluation. While observation is certainly colored on one level by one's presuppositions and assumptions, as argued in the second section of this chapter, both Scheffler (1967) and Nagel (1961) have claimed that observational and experimental laws are independent of the particular theoretical context in which they occur. Scheffler (1967) justified this position by distinguishing between two levels of assumptions. While alternative theoretical assumptions may produce different scientific conclusions, the assumptions which govern observational categories are on a more fundamental level and are independent of a given theory which makes use of them. Thus, observational laws may be identical in different theories because the observational terms retain their referential relationships across the theories, and may even remain synonymous (Scheffler, 1967).

The status of theoretical terms has been a subject of great controversy. For a time, the doctrine of "operationism" denied meaning to all terms which could not be strictly defined by observational terms (Wallace, 1971). Adherence to this principle would exclude numerous scientific terms as "meaningless", and since many philosophers felt that theories which could use such terms would be superior to versions forced to attempt to formulate explanations without them (Carnap, 1966), operationism has fallen out of favor.

In its place, many philosophers have accepted the practice of partial definition of theoretical terms (Carnap, 1966; Rubinstein, 1967). According to this view, universal concepts, as dispositional, cannot be fully defined by observational terms (Scheffler, 1963; Popper, 1968; Rosenblatt & Thickstun, 1977). The partial definition consists in linking the theoretical terms to observation by means of correspondence rules (Nagel, 1961) or reduction sentences (Hempel, 1970a; Wallace, 1971). This operation does not exhaust their meaning, however, which can only be obtained from examining the theoretical context in which they are used (Carnap, 1966; Rubinstein, 1967). Theoretical

terms can thus be defined only within a theory, by other theoretical terms (Nagel, 1961; Popper, 1968).

Another issue which has been greatly debated is the existential status of theoretical terms. There are three basic positions which have been taken in this regard. The first, instrumentalism, values a particular term's usefulness more highly than its correspondence with external reality (Carnap, 1966; Scheffler, 1963; Nagel, 1961). The main limitation of this view is the resulting uncertainty as to whether a theoretical term refers to a real phenomenon (Nagel, 1961). The second perspective, phenomenalism, asserts that the truth or falsity of a theoretical statement can only be determined if it can be translated into an observational language (Nagel, 1961). Accepting this position restricts the concept of "truth" to observational laws and asserts that asking if theoretical laws are "true" or not is a meaningless question (since they cannot be fully translated operationally). A third point of view, realism, emphasizes the similarities between ideal concepts and real phenomena, and attempts to ascertain if theoretical terms have existential referents (Carnap, 1966; Nagel, 1961). The fact that theoretical terms are not operationally definable creates fundamental difficulties in carrying out this task, however.

With respect to the three perspectives mentioned above, the position taken in this dissertation is that phenomenalism imposes unnecessary restrictions upon the meaningfulness of theoretical statements. As Quine (1963) has argued, the assignment of existential status only to strictly observational terms is an arbitrary and unnecessary decision, since "observation" itself is a relative concept. Actually, both observational and theoretical terms are ultimately "posited" and differ only in their degree of observability. Since it is difficult to determine at which level of inference a concept can be ruled "unobservable", especially when one considers that advances in technology can alter a

phenomenon's observability, it is felt that it is best to leave the question of a term's existential status open, as do the realists.

Regarding the realist and instrumentalist points of view, it is believed that both make valid points. Both usefulness and accuracy are significant criteria for judging the value of theoretical terms and statements. Since these dimensions may conflict, it is imperative that a scientific theory strike an appropriate balance between the two.

Deduction and theory evaluation It is a fact that scientific theories change and develop over time (Piaget, 1971a; Marney & Schmidt, 1976). With respect to this development, the criteria by which two alternative theories, or a theory and external reality, are compared have been closely studied.

A major contribution to this area was made by Kuhn (1970), who distinguished between "normal" science and scientific revolutions. Normal science occurs when a given paradigm for scientific work is accepted by the community of scientists and is successful at solving problems which occur within its scope. If enough "anomalies" are encountered during normal scientific work, however, to make scientists lose faith in the old paradigm, and if an acceptable alternative exists, there will be a scientific revolution. A new, qualitatively different paradigm will then replace the previous one (Kuhn, 1970).

The criteria by which scientists compare two different theories within the same paradigm and those used to compare competing paradigms are overlapping but not identical. Kuhn (1970) has argued that the qualitative differences between two paradigms often make the normal "intra-paradigmatic" criteria irrelevant. While acknowledging this situation, Scheffler (1967) has replied that the inability to use "normal" scientific criteria does not necessitate arbitrary decisions swayed mainly by psychological and political factors. Instead, he has stated that higher-level standards which are meta-paradigmatic are used as

criteria for judging theories from different paradigms, although these standards are not always explicit (Scheffler, 1967).

The criteria which follow apply mainly to comparing two different theories within a given paradigm, although many of them can also be adapted for use in deciding between paradigms themselves. These criteria are in many ways parallel to the attributes of science itself discussed in the first part of this section.

First, just as science must be systematic, one mark of a good theory is its internal consistency (Kuhn, 1970; Wallace, 1971; Bowlby, 1969; Popper, 1968; Nagel, 1961; Mujeeb-ur-Rahman, 1977; Waelder, 1977; Rosenblatt & Thickstun, 1970; Langer, 1970). It should be logically coherent, and compatible with other theories in the field in such ways as being accessible to preferred models and being able to preserve the advances of previous theories (Whitehead, 1967; Marney & Schmidt, 1976; Scheffler, 1967; Waddington, 1966; Kuhn, 1970; Popper, 1968).

A closely related criterion for a theory's internal structure is its "simplicity" or parsimony. (Marney & Schmidt, 1976; Nagel, 1961; Kuhn, 1970; Wallace, 1971; Scheffler, 1967; Rosenblatt & Thickstun, 1970, 1977). There are various views on the meaning of the term "simplicity": it has been believed to measure "degree of regularity" (Popper, 1968), to be a disguised expression of degree of rationality (Schwartz, 1974) and to represent aesthetic values (Kuhn, 1970).

Second, corresponding to science's dealing with a delimited subject matter in a detailed manner are several characteristics of a good theory. With regard to subject matter, scientists attempt to construct theories with maximum breadth and depth (Hempel, 1970a). Breadth means the comprehensiveness of a theory: the range of phenomena included within its scope (Kuhn, 1970; Wallace, 1971; Bowlby, 1969; Marney & Schmidt, 1976; Rosenblatt & Thickstun, 1970, 1977; Frank, 1977). Depth refers to the level of abstraction attained, where many

phenomena can be explained using the minimum number of principles (Wallace, 1971; Nagel, 1961; Hempel, 1970a; Taylor, 1970). Other related criteria are a theory's degree of universality and flexibility (Wallace, 1971; Marney & Schmidt, 1976; Popper, 1968).

With respect to detail, scientists strive to make theories as precise and refined as possible (Kuhn, 1970; Wallace, 1971; Popper, 1968; Nagel, 1961; Frank, 1977; Cioffi, 1970a; Taylor, 1970). This criterion includes developing clear definitions, fixed meanings of terms and systematic relationships between component parts (Nagel, 1961; Zigler, 1963). In this way, it is possible to establish the necessary and sufficient conditions for an event, and to explain why different outcomes occur under altered conditions (Popper, 1968; Taylor, 1970).

A third parallel between the definition of science and the requirements for a useful theory is in the area of facts and observation. Just as science must be empirical, a productive theory must serve as a guide for further research (Kuhn, 1970). It must provide a promise that problems will be solved, and that control over reality will increase (Scheffler, 1967; Marney & Schmidt, 1976). To do this, it must have the ability to generate, systematize and predict new observations (Wallace, 1971; Bowlby, 1969; Popper, 1968; Scheffler, 1967; Frank, 1977).

In a related area, a theory is preferred if it is better "entrenched", and has accumulated a great deal of confirming evidence (Scheffler, 1963). If a theory is better confirmed in relation to rival hypotheses, Scheffler (1963) said it has a greater "projectibility". The more it can be linked to empirical phenomena and observation, the more testable a theory is and hence more valuable scientifically (Popper, 1968; Farrell, 1970; Rosenblatt & Thickstun, 1970; Wallace, 1971).

A second major part of theory evaluation is the comparison of a theory with reality, as opposed to comparing it with another theory (Scheffler, 1967). The theory must demonstrate that it is in agreement with daily experience (Frank,

1977). In order to do so, it must have gathered empirical support and evidence from a number of sources (Gruber & Barrett, 1974; Nagel, 1961; Waelder, 1977; Cioffi, 1970a, 1970b; Grossman & Simon, 1969; Skinner, 1965). Evidence is generally obtained by some sort of test of the accuracy or range of validity of the theory (Cornforth, 1971b; Hempel, 1970a; Whitehead, 1967; Marney & Schmidt, 1976; Nagel, 1961; Langer, 1970; Zigler, 1963). Experiments often serve this purpose (Marney & Schmidt, 1976; Kockelmans, 1967c). Some factors affecting the testability of a theory are the precision and universality of its language, its flexibility and manipulability (Wallace, 1971).

Two criteria for testing theories are attempts at verification and falsification. In the past, much emphasis was placed on the need for verification or confirmation of a theory by discovering "positive instances" of the laws in question (Scheffler, 1963; Strasser, 1967; Rapoport, 1968; von Bertalanffy, 1968). Popper (1968), however, has made a cogent critique of this position by pointing out that universal statements, including scientific laws, cannot generally be verified because of their logical structure. While probability statements can be confirmed, the most that can usually be achieved for universal laws is "corroboration", by which Popper (1968)means a lack of falsification after severe testing. In a similar admission of the limits of science, Scheffler (1967) stated that the empirical basis of theories is credible, but not certain. The theory is asserted to be true, but this can't be logically proven (Scheffler, 1967). Thus, universal statements may be shown to be "valid" (consistent both with other knowledge and external criteria) through citing positive corroboration and lack of falsification, but can only be believed to be "true" (holding for all possible cases) since this cannot be empirically demonstrated.

Falsification, however, faces no such logical difficulties and has been championed by Popper (1968) and others (Wallace, 1971; Carnap, 1966) as the

fundamental evaluative process for scientific theories. Since theoretical terms are not operationally definable, theories cannot be tested directly (Wallace, 1971). Through the use of interpretation, correspondence rules and reduction sentences, though, consequences of a theory may be logically deduced (Carnap, 1966; Wallace, 1971; Scheffler, 1963; Rosenblatt & Thickstun, 1977; Grossman & Simon, 1969; Nagel, 1961). Observational statements which are potentially falsifiable are derived in this way, in order to predict a future event (Hempel, 1970a; Cioffi, 1970a; Popper, 1968; Scheffler, 1967; Rosenblatt & Thickstun, 1977). The accuracy of its predictions then helps to determine a theory's fate, either confirmation or rejection (Wallace, 1971). Bowlby (1969) has argued that predicting a future event is more helpful in testing a theory than postdicting the causes of an event which has already occurred, since all of the causes may not be known, and even if they are, their relative etiological strengths are usually unclear.

With regard to theory evaluation, Quine (1963) and others (Scheffler, 1963; Merleau-Ponty, 1967; Hilgard, 1977) have stressed that it is not individual laws but the entire system of laws which is being evaluated. If one then conceptualizes a theory as a field of statements whose boundaries touch experience, then those statements which are closer to the "boundary", to experience, are more likely to change when a falsifier is discovered than are those statements which are better entrenched or closer to the core of the theory (Quine, 1963; Scheffler, 1963).

General methodological rules Popper (1968) has formulated four basic methodological rules for scientific work which are intended as meta-statements about scientific method as it is ordinarily practiced. First, the scientist must be careful to construct a theory which is falsifiable and to strive not to protect it against the possibility of being falsified (Popper, 1968; Cioffi, 1970a). Second, although there is no need to postulate a "principle of causality", it is a useful

methodological rule to exert some effort searching for a cause even when one is not immediately apparent (Popper, 1968; Nagel, 1961). Third, auxiliary hypotheses should be introduced only if they increase the falsifiability of a theory and not to continually "patch" a theory in the face of contrary evidence (e.g. Kepler's epicycles) (Popper, 1968; Cioffi, 1970a). Finally, it is the scientist's own decision to what level an explanation needs to be carried out: he decides in a particular situation which event to accept as basic and explanatory, and not itself in need of explanation (Popper, 1968).

Natural and Human Sciences

Levels and Their Relation to Method

Various writers have distinguished among phenomena according to their level of complexity. Merleau-Ponty (1967) and Giorgi (1970) have identified three "orders" of structure in reality: the natural or physical, which deals with the equilibria of forces; the biological or vital, which is concerned with needs, instincts and situations; and the psychological or human, involving signification and perception. Boulding (1968) has subdivided these three basic orders into nine levels of complexity. Under the physical order, he differentiated between static, equilibrium and cybernetic systems; for the biological order, he listed self-maintaining systems, genetic-social systems (plants) and animals; and for the psychological order, he included human systems, societies and transcendental systems (Boulding, 1968).

More complex systems develop from simpler structures, which are changed and enriched (Bowlby, 1969; Merleau-Ponty, 1968). The relationships between fully developed systems on different levels of complexity deserve some discussion. "Higher order" systems, while representing a new level of development, are nevertheless not independent from their foundation on a lower level, but contain

the lower level (Cornforth, 1971a; Merleau-Ponty, 1968; Kremyanskiy, 1968). These "sub-" and "super-" structures are thus related to each other while maintaining a relative autonomy (Sartre, 1968).

From a dynamic perspective, there is a hierarchy of levels with reciprocal relationships between them (Schwartz, 1974). Lower orders serve to restrict the range of action of higher orders by requiring certain necessary physical conditions to be met before more complex activity is possible (Schwartz, 1974; Taylor, 1970). The laws governing the less complex systems operate within more complex structures and function as prerequisites for higher level activity, but they are not causes and do not determine or explain this activity (Schwartz, 1974; Merleau-Ponty, 1967; Sartre, 1968).

For their part, the higher orders eliminate the absolute autonomy of lower levels by giving them a new signification as part of a larger system (Merleau-Ponty, 1967). Also, the boundary conditions of less complex systems are themselves controlled and explained only by the principles of a more complex system (Polanyi, 1965; Schwartz, 1974).

Although a mechanical explanation of human behavior is not logically impossible (Taylor, 1970), and several conditions have been specified for "reducing" explanations according to one theoretical perspective to those of a different perspective (Nagel, 1961), many writers have argued against the reducibility of cultural explanations to the laws of physical science (Cornforth, 1971a; Merleau-Ponty, 1967; Polanyi, 1965; Sartre, 1968; Giorgi, 1970). One reason for this position is that laws regulating less complex systems don't contain in themselves all that is required to explain more complex systems adequately. For example, Polanyi (1965; Schwartz, 1974) has stated that, by definition, systems don't include, and hence can't explain, their own boundary conditions. Also, Popper (1968) has asserted that "macro" laws cannot be deduced from

"micro" laws unless independent estimates are made of frequencies and the distribution of the initial conditions.

A second factor which supports an anti-reductionist point of view with regard to the human sciences is the fact that an experimental focus on the parts of a phenomenon can dissolve the whole and break down its structure so that it is no longer recognizable (Polanyi, 1965; Merleau-Ponty, 1967; Voyat, 1977). In order to gain a complete understanding of a given system, one must utilize an explanation of the same order of complexity as the phenomenon itself, not one suitable for simpler systems (Merleau-Ponty, 1967). The underlying reason for this conclusion is the fact that in organized systems, such as human beings, the whole is more than the sum of its parts (see the third section of this chapter for a discussion of this point).

A logical consequence of the perspective that the level of an explanation should correspond to that of the phenomenon to be explained is that the particular problem or subject matter involved should be primary and should determine the method to be employed (Kockelmans, 1967c; Giorgi, 1970; Voyat, 1976). A corollary of this is that a single method is probably not always appropriate and human sciences should not blindly imitate natural scientific method, since it applies to a different content area (Giorgi, 1970). Giorgi (1970) also made the point that neither the natural scientific nor human scientific approach is primary, but both operate in the context of the lived world.

The Natural-Scientific and Human-Scientific Paradigms

It will be instructive to contrast the subject matter of the natural and human sciences before proceeding to discuss how this difference affects the methods which should be used in each case. Although the biological sciences study a third realm of phenomena, they will not be further discussed in this chapter since they have only recently been recognized as constituting an area of

investigation in their own right and begun to exert a significant effect on conceptualization in the human sciences. Traditionally, the predominant external influence on the human sciences has come from the natural sciences and this is certainly true in Jung's case, so these are the two approaches which will be examined.

There appear to be three fundamental differences between the subject matter of the natural sciences and that of the human sciences. These differences include the increased importance of both development and structural organization and the presence of a subject in the human sciences. The human sciences share the first two characteristics with the biological sciences, although not to the same extent, but the third property, subjectivity, belongs to the human sciences alone.

With regard to development, the subject matter of the natural sciences is for the most part fairly stable over time, while the human world is highly unstable and in the process of <u>becoming</u> (Giorgi, 1970; Waelder, 1962, 1977). In addition, many processes in nature are reversible, while human behavior and development is generally irreversible (Prigogine, 1976).

On a structural level, the human world displays many of the characteristics of highly organized systems described in the third section of this chapter, and differs in this respect from the world of nature. Statically, the subject matter of the natural sciences is usually concerned with parts and units which are additive and combined in a linear fashion (Giorgi, 1970; Waelder, 1962, 1977; Hartmann, 1977). For the human sciences, however, the relevant variables are interdependent and highly "coupled" (Giorgi, 1970; Hartmann, 1977; Waelder, 1962, 1977). The high degree of interrelationship results in the creation of wholes which are greater than the sum of their parts (Giorgi, 1970; Prigogine, 1976). Dynamically, natural processes operate in accordance with linear causality while

human action is both goal-oriented and self-determining (Giorgi, 1970; Hartmann, 1977).

An acknowledgement of the existence of subjectivity and a consideration of the subject's point of view have no parallel in the natural sciences, but they are crucial for any science which attempts to study man as man and to include what is uniquely human in its subject matter (Giorgi, 1970; Kockelmans, 1967b). Two aspects of subjectivity are often discussed: the creation of meaning and the fulfillment of purposes.

With regard to meaning, it is the interpretation of a situation by an experiencing subject which is crucial for the human sciences, not some objectively specified independent event as for the natural sciences (Giorgi, 1970; Nagel, 1961; Bowlby, 1969; Kockelmans, 1967b). Meaning may be expressed by means of symbols, and the subject may be more or less conscious of the meanings he creates (Giorgi, 1970; Kockelmans, 1967b).

Human subjects also act purposefully and intentionally, unlike systems in nature (Giorgi, 1970; Kockelmans, 1967b). They are oriented to the future, and can increase their freedom by making and carrying out decisions (Giorgi, 1970; Kockelmans, 1967b; Nagel, 1961).

As a result of the differences in subject matter between the natural and human sciences, there are corresponding differences in the methods most appropriate for the two areas of investigation and the kind of knowledge obtained in each. With regard to development, the relative stability of natural systems has led to a stress on replication of results as desirable (Waelder, 1962; Langer, 1970). The irreversible nature of many human behaviors often makes replication impossible, however, and instead suggests a focus on the overall process rather than its component parts (Giorgi, 1970; Arlow, 1977).

The different levels of structural organization of natural and human systems have influenced their respective methods in several ways. Statically, the additive aspects of systems studied by the natural sciences have prompted use of the "analytic method", whereby wholes are broken down into their constituent parts (Giorgi, 1970; Rapoport & Horvath, 1968). In this way, variables may be isolated and controlled in order to carry out experiments (Giorgi, 1970; Kockelmans, 1967b; Langer, 1970). These relatively independent variables can then be measured and related by quantitative formulae and other laws (Giorgi, 1970; Kockelmans, 1967b).

The interrelationships of factors in the human sciences have required more of a stress on description (Giorgi, 1970), however. Parts of wholes must be viewed with regard to their integration and relationships, not as autonomous variables (Giorgi, 1970). Instead of analyzing a system into independent elements, it must be seen as a whole that exists in a particular context. Giorgi (1970) called the elaboration of this context "explicitation". A precise description then produces a clear picture of the qualitative aspects of a given structure (Giorgi, 1970).

From the dynamic point of view, the isolability of variables in the natural sciences has let to a search for causes (Giorgi, 1970; Kockelmans, 1967b). Because of the close coupling of factors in the human sciences, however, the focus is more appropriately directed to an elaboration of the activity of entire structures than to distinguishing particular causes (Giorgi, 1970).

Three effects of the presence or absence of subjectivity on scientific method may also be seen. First, the lack of a subject in the domain of interest to the natural sciences has enabled researchers to be more "objective" (Langer, 1970). With human subjects, however, the scientist tends to become more emotionally involved and engaged, and this relationship itself becomes an object of study (Giorgi, 1970). Second, since the phenomenon of "meaning" doesn't apply

to the inorganic world, workers in the natural sciences study external relations between parts of the world, where the past explains the present (Giorgi, 1970). The fact that humans express meaning in a way which can be progressively better understood, though, has suggested that present or future events in the human sciences can shed light on the meaning of past actions and in this way help to explain them (Sartre, 1968). Also, the inevitability of interpretation in human perception necessitates a redefinition of the meaning of "cause" in the human sciences as a situation created in and through the interaction of man and his world and not as an independent, "external" event. Third, the impersonal processes which occur in natural systems are amenable to explanations involving notions of cause and effect. Human purposive action is more readily conceptualized in terms of aims or goals, however, as the individual's intentions are an essential factor to be considered (Giorgi, 1970).

The differences in subject matter and therefore in methods between the natural and human sciences which have been described above also lead to corresponding differences in the kind of knowledge obtained in each. For the natural sciences, such features of their subject matter as stability, reversibility, additivity and linear causality have facilitated the construction of deductive explanations including general and universally valid laws (Giorgi, 1970; Kockelmans, 1967b). The formulation of detailed, deterministic explanations makes possible a high degree of predictive power and control over natural processes (Giorgi, 1970; Rosenblatt & Thickstun, 1977).

For the human sciences, the interrelationships among variables in combination with individual differences in meaning and interpretation produce a complexity which presents a formidable obstacle for one seeking to establish universal laws (Nagel, 1961; Waelder, 1977; Cioffi, 1970a). The sheer number of relevant factors makes any particular finding less certain and prevents the

attainment of exact validity (Giorgi, 1970; Waelder, 1977; Hartmann, 1977). Since it is thus difficult to determine the sufficient conditions for an event's occurrence, statistical laws are developed instead of universal laws and prediction is much more difficult (Horwitz, 1977; Giorgi, 1970; Nagel, 1961; Cioffi, 1970a; Waelder, 1962). The complexity of human systems and the relative youth of the human sciences have also resulted in the use of theoretical terms which are vague and imprecise (Giorgi, 1970; Nagel, 1961).

From the factors considered above, Giorgi (1970) and others have drawn the conclusion that the application of the approach and methods of the natural sciences to human systems is inappropriate. A natural scientific approach would not fit the subject matter and would tend to limit both the phenomena which would be studied and the kinds of questions which would be asked (Giorgi, 1970). It would be unable to explore important issues regarding development, freedom and experience, and would see man as only an object, not as also a subject (Giorgi, 1970). Instead, Giorgi (1970) argued that the human sciences require their own paradigm which would study man directly and on his own terms.

Special Features of the Human Sciences

The facts that the object of study in the human sciences is itself a subject and that the human sciences are at a relatively early stage of development help to account for their unique character.

The object of study is a subject An intriguing aspect of the human sciences is that while the object of these sciences is human activity, science itself is a human activity (Giorgi, 1970). Sartre (1968) stated a similar point when he declared that science must comprehend the movement of structures, but comprehension itself is such a movement. The implication of this situation is that the human sciences must study their own activity and examine a unique subject matter which is both a subject and object simultaneously. The scientist himself

thus becomes the object of research, as human sciences like psychology investigate the activity of subjects (Giorgi, 1970; Piaget, 1972).

Several observations have been made about how this situation affects the practice of the human sciences. Strasser (1967) addressed the practical question of how a science could capture its own subjective aspect by making it an object to study. He explained that only part of the subject is treated as an object at any one time; that inquiries are directed not to current activity but to past behavior, which is more easily objectified; and that locating the subject in a context aids in comprehending it. Both Sartre (1968) and Kockelmans (1967b) have pointed out that the scientist, by his very action of knowing, thereby transforms the subject matter he is working with. Waelder (1977) noted the privileged position men have with regard to human systems, since they can have knowledge of humanity both on an external level with other men and on an internal level with regard to their own subjective activity. Langer (1970) added another complicating factor in that the object of study in the human sciences may also be an observer, as is the scientist.

The human sciences as young sciences Part of the differences between the natural and human sciences arises from the more recent development of the latter. The complexity of the subject matter and its unique features also serve to make progress in the human sciences slow.

Many scientists and philosophers of science have identified characteristics of the human sciences attributable to their early stage of development. In young theories, concepts are vague and qualitative descriptions and metaphors are common (Horwitz, 1977; Kennedy, 1977; Carnap, 1966; Frenkel-Brunswick, 1977). There are numerous "explanation sketches" or incomplete explanations (Scheffler, 1963), and "partial explanations" which lack great specificity (Hempel, 1970a).

"Grand designs" precede articulated theories, while the theories which are

constructed are either very descriptive or too speculative, and lack "middle order" concepts linking theoretical ideas with observable phenomena in detailed and clearly specified ways (Zigler, 1963). Wallace (1970) identified classificatory and compositional theories, which are more descriptive, as historically earlier than causal explanatory theories in the evolution of a science. Also, the causal theories which do appear tend to be of the "concatenated" type, where there are relatively independent patterns of causal relations, before becoming truly deductive, where these patterns are systematically interrelated to form a unified theory (Wallace, 1970). Giorgi (1970) and Kuhn (1970) have noted that a human science such as psychology remains "pre-paradigmatic", which means that a single, unified theoretical approach to its subject matter acceptable to the scientific community has not yet been constructed.

The Scientific Status of the Human Sciences

In order to qualify as "science" according to the criteria listed in the previous section of this chapter, the human sciences would need to be rigorous and systematic; internally consistent; applied to a delimited subject matter in a detailed way; and linked to empirical observation and thereby testible. Despite the differences in subject matter, methods, and kind of knowledge obtained between the human and natural sciences which have been discussed earlier in this section, the former clearly meet the criteria described above. The systematic approach to a delimited subject matter is without question for the human sciences. Also, while there is a continued need for semantic clarification and explicit rules for interpretation (Murphy, 1977), there is no doubt that internally consistent theories have been and can continue to be created in the human sciences.

The bulk of the criticisms of the scientific status of the human sciences is related to the criteria of empirical observability and testability. With regard to

observation, it is sometimes asserted that individual differences in interpretations of situations make the scientific study of man's subjectivity impossible. According to this view, only by defining events as "external" and without reference to subjective interpretation can the requirements for a scientific investigation be met.

Many writers have persuasively disagreed with this point of view, however. Sartre (1968) declared that subjectivity is part of objectivity; that is, that subjective phenomena can be approached with an objective attitude. Nagel (1961) agreed that even though events are interpreted, the fact of interpretation itself may be studied objectively. Several techniques have been proposed to reduce the variability of observation brought about by individual differences in interpretation. Waelder (1977) and Murphy (1977) have stressed the need to make explicit the rules which scientists use to infer motivations and interpretations from observable behavior. Also, behavior sequences may be tape recorded in order to expand what is potentially observable and to transcend the inevitably limited perspective of the persons physically engaged in the research (Horwitz, 1977; Hartmann, 1977). Recorded data may then be submitted to a panel of judges for interpretation, and their agreement would reduce the idiosyncratic nature of the results and encourage their acceptance by the scientific community as a whole (Horwitz, 1977; Waelder, 1977; Kennedy, 1977).

With respect to testability, several issues have been addressed. Nagel (1961) has stated that conducting experiments per se is not necessary for scientific work, but "controlled investigation", which compares situations in an attempt to locate crucial factors, is essential. Horwitz (1977) has pointed out that not only do standardized tests meet this criterion but on many occasions, full-fledged experiments can be carried out.

To offset the variability in testing hypotheses introduced by subjective interpretation and the complexity of the subject matter itself, several different sources of data may be examined before drawing conclusions from them (Waelder, 1977). For example, processes which have been inferred in one context might be directly observed under other circumstances, as when reconstructions of childhood events are compared with direct observation of children (Arlow, 1977; Hartmann, 1977; Cioffi, 1970a). Also, the discovery of parallel processes in similar systems can be used to confirm hypotheses, as when animal studies reveal an isomorphism with human behavior (Horwitz, 1977; Hartmann, 1977).

While it is conceded that prediction in the human sciences is both essential and possible (Klein, 1977; Kennedy, 1977), the precision attainable is generally less than what is achieved in the natural sciences. The remedy generally proposed for this problem consists in making contingency predictions of a range of behaviors (Frenkel-Brunswick, 1977; Horwitz, 1977). There should be an attempt to rank the interrelated factors in order of importance while predicting general areas and tendencies for the results and not necessarily the specific forms they will take (Horwitz, 1977). This enables the findings of the human sciences to be tested despite the elusiveness and complexity of its subject matter.

The Relation of Mind and Body

Before proceeding to examine specific theoretical approaches within the human science of psychology, there will be a brief section on the celebrated mind/body problem, since this issue is crucial with regard to Jung's conceptualizations of instincts, archetypes and the collective unconscious.

Monism in the Lived World

In the lived world of pre-reflective experience, there is no split between mind and body because a person is his body (Van Den Berg, 1955). The mind is a

form of unity in a person's experience, not a separate and concrete thing (Merleau-Ponty, 1967). There is no differentiation between "soul" and body in a person whose experience is fairly integrated (Merleau-Ponty, 1967). This distinction is only introduced by reflective thought, where the nature of the relationship of mind and body has been the subject of much theorizing (Van Den Berg, 1955).

Theories of Mind/Body Relations

Two basic theoretical positions have been taken with regard to the ontological relationship between mind and body: dualism and monism. Dualism entails the postulation of two fundamental kinds of being, mental and material. Rosenblatt and Thickstun (1977) have distinguished three subtypes of dualism, which posit different kinds of relationships between these two realms. Interactionism presupposes an interaction between mental and physical events, epiphenomenalism assumes that the mental is an unimportant by-product of a more fundamental material reality, and parallelism postulates the existence of two independent yet parallel sequences of events (Rosenblatt & Thickstun, 1977).

The major criticism of dualism concerns its difficulty in explaining how the two kinds of reality are related to each other (Merleau-Ponty, 1967). Parallelism needs to account for the incredible harmony it believes to exist, while epiphenomenalism must attempt to explain mental events in physical terms, which is extremely difficult since each refers to a different level of phenomena. Interactionism falls short in being unable to account for any type of interaction between mental and physical processes without disrupting the chain of causality presumed to exist in the physical world (Langer, 1970; Rubinstein, 1965).

Monistic theories, on the other hand, do not split reality in two and then try to relate the parts to each other. Instead, the mind is seen as a connection between man and his environment, not as a barrier (Cornforth, 1971b). Rosenblatt

and Thickstun (1977) have identified two varieties of monism: one believes that mental and physical events are identical, but refer to different aspects of the phenomenon; the other asserts that descriptions in mental and physical terms are logically equivalent versions of the same event.

Langer (1970) criticized the theory of logical equivalents, stating that instead mental and physical explanations are two interpretations of one thing. Rubinstein (1965) also pointed out the fact that often one can't translate descriptions or explanations in physical terms to mental ones or vice versa, which would be essential if they were logical equivalents.

Rubinstein's (1965) version of monism is an identity theory where mental and physical descriptions have the same denotations, but different connotations, as they are measured empirically in different ways. For Langer (1970), mental and physical interpretations are related, but not causally linked.

Both monism and dualism are metaphysical beliefs regarding the fundamental nature of reality. Some writers avoid committing themselves to either ontological position by treating mental and physical events as occurring at different levels of abstraction (Jantsch, 1976b; Rosenblatt & Thickstun, 1977). This approach recognizes that mental and material processes, as qualitatively different phenomena, require different methods of investigation, but it refrains from commenting on questions of ontology.

Polanyi (1965) took such a stance when he stated that the relationship between body and mind is analogous to that between tacit and focal knowledge. In other words, the body and physical events, on a lower level of abstraction, provide an implicit background and certain necessary conditions by means of which a focal awareness of the mind, on a higher level, is possible. There is further discussion of Polanyi's concepts of focal and subsidiary awareness in the second section of this chapter, and his ideas on the relationship between different

levels of phenomena are described in the fifth section.

Merleau-Ponty (1967, 1968) also felt it was unnecessary to speculate about whether mental and physical processes are ontologically distinct. As mentioned above, he felt that in an integrated person, there was no sharp dividing line between mental and physical, but he also declared that there is always some degree of duality (Merleau-Ponty, 1967). Pathological conditions which disturb the normal integration, such as physical illness or psychological repression, tend to lead to a mind/body split (Wild, 1967).

The position taken in this dissertation is that while an identity theory seems plausible and useful in some contexts, there is no need to look beyond the realm of phenomena in order to address issues of scientific theories and method. Thus, while mental and physical processes may each require different methods and concepts, no judgment will be made about their ontological status.

Psychological Theories

Since Jung's theorizing was basically psychological and metaphysical in nature, the human science of psychology will be central in this dissertation. It is felt that a greater understanding of his theoretical orientations can be gained by directly comparing and contrasting some of the assumptions of several major psychological approaches (behaviorism, psychoanalysis, structuralism and phenomenology) with those of Jung. The abstract form of the theoretical approach, with respect to issues of structure, development and the contrast between the natural and human sciences, will be stressed, and positions on particular content areas will usually be included only for purposes of illustration of the form of the theory.

Early Psychology and the Natural Scientific Paradigm

During its formative period in the nineteenth century, the science of psychology was striving to differentiate itself from philosophy by both opposing

the doctrine of vitalism and attempting to establish itself on an observational basis (Shakow, 1977). In doing so, however, it imitated the methods of the natural sciences without determining whether these methods were indeed appropriate for the new subject matter (Langer, 1970). For example, the school of Helmholtz included as a guiding principle a program of viewing human relationships in terms of physical forces (Apfelbaum, 1965). It was assumed that conducting experiments on factors which could be isolated, controlled and replicated was the optimal approach to human systems (Giorgi, 1970; Langer, 1970). Man's environment was treated as external and objective, containing objects independent of the human subject, whose relationships to this subject were capable of measurement and formulation by quantitative laws (Giorgi, 1970; Langer, 1970).

In their haste to emulate the precision and exactness of the natural sciences, psychologists essentially skipped an early, "naturalistic" phase, in which a focus on phenomenological observation and description would have alerted them to the qualitative differences between natural and human systems (Shakow & Rapaport, 1977). Instead, these first psychologists regarded the natural scientific method as the only scientific method, appropriate for any subject matter (Shakow & Rapaport, 1977). As a result, psychological inquiry was restricted to those areas which were more readily studied by means of this method, while many uniquely human processes were overlooked (Shakow & Rapaport, 1977).

Psychology's natural scientific approach first found expression in the school of sensationism, which employed introspection as its method (Shakow, 1977). This method was shaped by natural scientific theory, as it treated the mind as a container comprising simple parts or contents in isolation (Langer, 1970; Giorgi, 1970). The influence of natural science can be seen historically in both functionalism and behaviorism (Shakow, 1977). Even in modern psychology, the

preference for mathematical models over descriptions of real people reflects the quest to imitate the natural sciences (Voyat, 1976).

Behaviorism

The school of thought led by B. F. Skinner, as one of the dominant forces in behaviorism, will now be discussed. Skinner (1965) claimed that psychology is a natural science and therefore must use the methods and language of natural science, since it possesses no "special properties" requiring unique methods. While Skinnerians profess to value the compilation of data before constructing theories (Boakes & Halliday, 1970), the assumption that psychology has no unique features and the subsequent restriction to the natural scientific method serves to prevent the gathering of observations which might cast doubt on this assumption. The emphasis on method over subject matter leads to study of a severely constricted set of phenomena, as complex processes must be simplified and exmained over a limited range in order to be accessible to natural scientific methods (Voyat, 1977; Zigler, 1963; Boakes & Halliday, 1970).

With regard to the relationship between different levels of explanation, however, behaviorists assert their autonomy from natural science. Psychology is believed to be independent of physiology and in need of its own laws (Boakes & Halliday, 1970). Attention is therefore directed to molar behavior instead of attempting to reduce this behavior to the interaction of physiological components (Taylor, 1970).

Behaviorists' approach to structural issues reflects the influence of the natural scientific method. Human behavior is seen in additive, as opposed to interactive, terms (Vygotsky, 1978; Voyat, 1977). Complex wholes are analyzed into simple parts, in an effort to uncover a common unit of behavior (Skinner, 1965). Units of behavior (e.g. reflexes) are defined so as to produce simple mathematical functions, as again method dominates conceptualization (Miller et

al., 1968; Boakes & Halliday, 1970). Also, specific skills are investigated, not general abilities (Taylor, 1970).

The role of human development, in the sense of the qualitative change in the form of structures over time (Zigler, 1963), is generally downplayed by behaviorists (Vygotsky, 1978). Also, the importance of subjectivity is denied, as notions of "meaning" and "intent" are deemed unnecessary (Skinner, 1965). With respect to meaning, it is implicitly assumed that a given stimulus is interpreted in the same way by different people, as behavior is held to be a function solely of external conditions and a simple stimulus/response model is used (Skinner, 1965; Vygotsky, 1978). As for intentions, since they are not directly observable or controllable and in need of explanation themselves, Skinner (1965) has concluded that they are irrelevant. This line of reasoning is a relic of an outdated operationism, and is not borrowed from the contemporary natural sciences. Modern philosophy of science does not require concepts to be directly observable in order to be meaningful, but only to be capable of being linked to observational terms by correspondence rules (Nagel, 1961).

Psychoanalysis

Even more so than for behaviorism, it is difficult to specify "the" psychoanalytic position on a given issue because psychoanalysis is only partially systematized and there remain basic differences of opinion even on fundamental questions. This discussion will attempt to present the views generally accepted by the contemporary psychoanalytic community, while noting areas in which there is theoretical controversy.

For psychoanalysts, the relationship between psychology and natural science is complex. On the one hand, psychoanalysts have adopted some traditional values of the natural sciences. There is a stress on empirical observation, and a commitment to the methodological rule of searching for causes

is demonstrated by the principle of psychic determinism (Shakow, 1977; Shakow & Rapaport, 1977; Rosenblatt & Thickstun, 1977; Salmon, 1977; Arlow, 1977). While these are both characteristics of science in general, a natural scientific flavor is given to psychic determinism by its focus on origins and causes as opposed to goals and purposes (Rosenblatt & Thickstun, 1977; Brown, 1977).

On the other hand, psychoanalysis also departs significantly from the natural scientific tradtion in its reliance on such methods as free association and empathy in an interview situation (Rosenblatt & Thickstun, 1977; Hartmann, 1977; Brown, 1977). Free association is a dynamic tool, which changes along with its subject matter (Mujeeb-ur-Rahman, 1977). It is difficult to systematize, is directly accessible only to its user and is not replicable (Klein, 1977). Although it differs in important ways from natural scientific methods, the fact that it can lead to the formulation of interrelated and falsifiable laws and can be communicated intersubjectively to an observer enable it to qualify as a scientific method in its own right.

Empathy is a way of knowing without the knower necessarily being able to specify exactly how he did it (Waelder, 1962). Again, while this method differs from many of the precise procedures of the natural sciences, it is a good example of the kind of "tacit knowing" (Polanyi, 1965; Schwartz, 1974) which all scientific work shares to a greater or lesser extent (see the fourth section of this chapter on "The Background of Science" for a discussion of this point).

Finally, the emphasis on naturalistic observation and clinical interviews rather than experiments as sources of data also distinguishes psychoanalysis from the natural sciences (Shakow, 1977). Klein (1977) declared that these methods are not mutually exclusive, however, and in fact psychoanalysis needs both. The advantages of the analytic situation must be weighed against the difficulty of quantification under those circumstances, in order to arrive at the most appropri

ate way to investigate a particular issue (Waelder, 1962).

With regard to the relationship between different levels of explanation, psychoanalysts have been divided. On the one hand, there have been attempts to explain the data of psychoanalysis by using physiological models, beginning with Freud himself. This position has been transformed over the years and its contemporary manifestation is represented by the work of Rubinstein (1965, 1967). Rubinstein (1965, 1967) has rejected the notion of direct explanation of psychological phenomena by physical laws, but has argued that psychoanalytic theories must be consistent with neurophysiological research. In the other camp are writers who feel that psychoanalysis deals with uniquely human processes which require explanation on their own terms, while physical laws are felt to be irrelevant to this project. For example, Apfelbaum (1965) has contended that psychological phenomena such as unconscious meaning, subjective reality and intentions are primary within psychoanalysis, and should be explained by their own laws and not by trying to fit them to theories appropriate for physical systems.

On a structural level, the psychoanalytic principles of overdetermination and multiple function reflect a belief that human systems are complex wholes comprising interrelated factors, not additive composites of "units". While "overdetermination" suggests a focus on causes, it does not refer to the one-to-one causality of the natural sciences, but to a combination of overlapping influences (Mujeeb-ur-Rahman, 1977). The complexity of the interactions helps to make prediction difficult (Hartmann, 1977). The principle of multiple function reflects the importance for psychoanalysis of explanations in terms of goals as well as causes.

A developmental perspective is also an essential part of psychoanalytic theory, and is manifested in such topics as the stages of psycho-sexual and psycho-social development, the transformation of instinctual drives, the binding

and neutralization of libido, and genetic explanations and reconstructions. The motive force for this development is believed to be the individual's biological maturation as it interacts with his cultural and physical environment.

Subjectivity also plays an extremely significant role in psychoanalysis. There is a general consensus that interpretation of the meaning of behavior is essential, in contrast to accepting the notion of an "objective" stimulus or situation which is the same for any observer (Kaplan, 1977; Mujeeb-ur-Rahman, 1977; Taylor, 1970; Frenkel-Brunswick, 1977; Hartmann, 1977). In fact, much of the work of psychoanalysis consists in determining such meaning. With regard to intention and purpose, although psychoanalytic theory stresses biological concepts like function and adaptation, this is probably due to the focus on pathological behavior which remains unconscious and therefore is not strictly speaking purposive in the sense of "consciously planned". In conceptualizing human behavior in general, however, many analysts believe that account must be taken of purposes and intentions (Apfelbaum, 1965).

Structural Theories

Two related but separate theoretical approaches will be discussed at this point: Piagetian theory and systems theory.

Piaget's theory In a more complete way than psychoanalysis, Piaget has treated psychology as a human science which is not bound by the theories or methods of the natural sciences. While being strictly scientific in the sense defined in the fourth section of this chapter (systematic, delimited, consistent, empirical and testible), his approach does not attempt to fit human subject matter into a framework designed for natural systems, but deals with it on its own terms. Piaget's method is closer to a clinical interview than to traditional experiments, and his recognition of the differences between human and natural systems is also shown in his views on the subjects of structure, development and subjectivity.

On a structural level, Piaget has described human systems as organized structures, whose parts are not independent but in constant interaction with each other and with the environment (Voyat, 1977). Dynamically, Piaget (1971b) has viewed structures as self-regulating wholes with a law-governed system of transformations. Thus, he is more concerned with notions of function and equilibrium than with natural scientific "causes". With regard to method, Piaget (1971b) advocated the investigation of how a structure functions as a synthetic whole in combination with a more analytic search for "laws of composition" and "deep" structures. This structuralist method takes the organization of human systems into account while providing a place for tools first employed in the natural sciences when this is appropriate.

Developmental concerns are vital in Piaget's work. He has placed a general stress on finding "invariants" in the midst of change: those things or concepts which preserve their identity while other aspects are being transformed (Piaget, 1971b, 1972). Piaget has explored various stages which occur in a child's development, and has opened an extremely rich, multidisciplinary field for investigation with his research in genetic epistemology. The study of genetic epistemology has been one of Piaget's major scientific contributions in its effort to shed light on the fundamental concepts involved in "knowing" by tracing their developmental and historical origins. Piaget (1971b) also introduced the idea of "equilibration" as an explanatory principle for development and structure formation, but this idea has been generally used as a description and not as part of an explanation.

With regard to subjectivity, Piaget (1971b) emphasized the theoretical necessity of a subject as the center of activity in the development of structures. The importance of meaning and intentions is attested to by Piaget's (1971a, 1971b, 1972) focus on the individual as an active participant in the transformation and

interpretation of perceptual stimuli and as a purposive agent in the construction of scientific concepts. Through his frequent use of what are fundamentally biological notions, however, (e.g. assimilation, accomodation, equilibration), Piaget has tended to downplay the uniqueness among living things which man's subjectivity grants him.

Systems theory As stated at the beginning of the third section of this chapter, systems theorists are concerned with demonstrating the continuity between the natural and human sciences and attempting to unite both by means of a general theory of systems (Bowlby, 1969; von Bertalanffy, 1968; Marney & Schmidt, 1976). For example, psychological constructs are not viewed as necessarily inconsistent with physiological explanations of human behavior (Taylor, 1970).

Within this general framework, however, qualitative differences between natural and human systems are recognized and it is understood that different kinds of explanations are necessary for each (Buckley, 1968). Despite a theoretical commitment to build an explanation on the same level of complexity as the system itself, though, the early stage of development of systems theory in combination with the extremely complex nature of human systems makes it very tempting to try to explain human behavior by modifying models originally constructed for biological or even mechanical systems instead of creating new models tailored to the unique features of human systems. Thus, with regard to the use of biological models, man's consciousness and emotions are viewed merely as a "phase" of the same basic perceptual processes which occur in animals, a wish is seen as the awareness of an ethological "set-goal" and intent is described as the "uncompleted part of a plan" (Langer, 1970; Whitehead, 1967; Rosenblatt & Thickstun, 1977; Bowlby, 1969; Miller et al., 1968). As for mechanical models, human thinking is conceptualized as "information processing" and purposes are

treated as constituting a variety of feedback (Rosenblatt & Thickstun, 1977; Buckley, 1968).

Systems theorists agree that structurally, human systems must be seen as complexly interrelated wholes in a context, and not as additive composites whose parts exist in isolation from each other (Rosenblatt & Thickstun, 1977; Nagel, 1961; Langer, 1970). Patterns take precedence over simple stimuli or responses in human perception and communication, and learning is viewed as a general function and not the acquisition of a collection of specific skills (Rosenblatt & Thickstun, 1977; Taylor, 1970). Dynamically, teleonomic explanations utilizing notions like function, goal, feedback and circularity are employed instead of searching for linear causes (Rosenblatt & Thickstun, 1977).

On a developmental level, systems theorists place great importance on notions like self-organization, self-differentiation and self-transcendence as the human expression of the change inherent in all systems (Jantsch & Waddington, 1976; Zeleny & Pierre, 1976; Taylor, 1976; von Bertalanffy, 1968). Man autonomously initiates activity and does not just react to external changes (Rosenblatt & Thickstun, 1977). As "open" systems in constant interaction with the environment, human beings are neg-entropic in gradually increasing their degree of organization rather than becoming more disordered and random (Rosenblatt & Thickstun, 1977; von Bertalanffy, 1968). This process is explained theoretically by the concept of "positive feedback", whereby small initial differences can be magnified in a "deviation-amplifying" way (Jantsch, 1976b; Taylor, 1976; Maruyama, 1968, 1976).

While man's subjectivity is generally not stressed by systems theorists, attention is paid to phenomena of meaning and intention. With regard to meaning, man's capacity for self-reflection and self-representation through language are seen as essential elements in his self-transcendence (Jantsch, 1976b; Pankow,

1976). With rspect to intention, man's purposes and actions are viewed as superseding mere "behavior" (Rosenblatt & Thickstun, 1977; Langer, 1970).

Phenomenology

Phenomenologists and existentialists have perhaps been the most ardent spokesmen on behalf of man's uniqueness. They view human behavior as exhibiting a qualitatively different structure from the activity of the natural or biological orders, and therefore requiring its own methods and kinds of explanations (Merleau-Ponty, 1967; Giorgi, 1970; Kockelmans, 1967c). A natural scientific approach to psychology would not be appropriate for the subject matter and would tend to limit both the phenomena which would be studied and the kinds of questions which would be asked (Giorgi, 1970). Although factors relevant to the natural sciences are seen to operate within human systems and to function as prerequisites for higher level activity, they are not causes of human actions and do not determine or explain them (Merleau-Ponty, 1967; Sartre, 1968).

On a structural level, the interrelationships among various factors and the wholes they create in their interaction are seen to be crucial for psychology. Individual facts are believed to have meaning only in relation to the totality, and each element both depends upon and affects the whole (Sartre, 1968; Merleau-Ponty, 1967). The basic unit of study is the entire structure and the rules which govern it (Merleau-Ponty, 1967). These structures are viewed as organic wholes and not as hierarchies or syntheses of previously separate, fully-formed parts (Merleau-Ponty, 1967).

Given this theoretical foundation, the methods advocated by phenomenologists for psychology include qualitative descriptions of wholes and the interrelationships of their parts rather than quantitative analysis of isolated variables by means of experiments (Giorgi, 1970; Kockelmans, 1967b). Since a focus on the parts of a phenomenon can dissolve the whole and break down its structure so that

it is no longer recognizable, Merleau-Ponty (1967) declared that a thorough elucidation of the structure as a totality is essential before an analysis of its parts is attempted. Modes of functioning and relationships are stressed over mechanisms and fixed anatomical centers and a search for the unity and organizing ability of the total process is conducted (Merleau-Ponty, 1967). Phenomena such as learning, perception and the effects of brain lesions are investigated as general reactions of the entire organism, whose structure is more significant than their content (Merleau-Ponty, 1967). The results of these investigations tend to be less exact than laws discovered by natural scientists (Giorgi, 1970; Kockelmans, 1967b). Dynamically, phenomenological psychologists emphasize intentions and the activity of the whole person rather than external causes (Giorgi, 1970; Kockelmans, 1967b).

With regard to development, although phenomenologists will theoretically agree that the developmental point of view is essential (Kockelmans, 1967b), in their writings it is usually of peripheral interest. There is a central concern with the issue of how the present moment preserves and retains the past at the same time as it transcends and surpasses it in pointing towards the future (Sartre, 1968; Strasser, 1967; Merleau-Ponty, 1967). This treatment of temporality is often non-developmental, however, as phenomenologists adopt the perspective of unfolding the multi-layered lived moment in the present instead of outlining a linear sequence of more or less discrete events leading from the past to the present.

Subjectivity is of paramount importance to phenomenologists, as this quality is believed to be what makes man uniquely human (Giorgi, 1970; Kockelmans, 1967b). Man's existence as the subject of experience is exhibited in the structures of the lived world. This world is one of values, meanings and intentions, and it must be captured by such methods as description, intuition, explicitation and introspection if psychology is to portray man as a subject as well

as an object (Giorgi, 1970; Van Den Berg, 1955; Kockelmans, 1967b; Merleau-Ponty, 1967, 1968). The meaning of an event to the individual is sought instead of an objectively specified external stimulus or datum (Merleau-Ponty, 1968; Romanyshyn, 1977; Giorgi, 1970). The facts that the object of research in psychology is also a subject, and that the study of psychology itself is a human activity demanding attention are recognized. The involvement of the psychologist in his work is for this reason of a different sort from that of the natural scientist and must itself be included in the subject matter of psychology (Giorgi, 1970).

Jungian Theory

An outline will now be made of Jung's approach to psychology as it compares with that of the five theoretical schools examined above regarding several key philosophical and methodological issues. The present discussion will be very brief, but the remaining chapters of this dissertation will serve to expand upon these issues as they pertain to the portions of Jung's work selected for study. A chart summarizing the preceding parts of this section has been provided (see Figure 3).

With regard to the questions of psychology as either a natural or human science and the relationships among different levels of phenomena, Jung's position most closely parallels that of classical psychoanalysis. Like Freud, Jung was heavily influenced by the dominance of the natural sciences and strove to construct his theories in a similar fashion. This tendency is most evident in his use of energy concepts and his attempts to link such notions as instincts and archetypes with the structure of the brain. In these areas, he employed natural scientific explanations for the phenomena he discovered.

Jung also treated the psyche as a reality in its own right, however, with laws of its own. He was not hesitant to create new concepts and employ new methods in his study of the human mind which went far beyond the bounds of

		Behaviorism	Psychoanalysis	Piaget	Systems Theory	Phenomenology
1.	Human or Natural Science	Psychology a natural science	Mixed	Psychology a human science	Continuum with qualitative differences	Psychology a human science
2.	Relation of Levels of Phenomena	Levels independent	Mixed	Levels independent	Levels independent in theory	Levels related but requiring independent explanations
3.	Structural: Static	Additive composites	Interrelated wholes	Interrelated wholes	Interrelated wholes	Interrelated wholes
	Dynamic	Causes	Causes Functions Intentions	Functions Equilibrium	Functions Goals	Intentions
4.	Developmental	Little emphasis	Stages Maturation	Stages Invariants Equilibration	Self-organization Self-transcendence Positive Feedback	Focus on present
5.	Subjectivity	Irrelevant	Meaning Intention	Present, but not stressed	Present, but not stressed	Lived world of meanings and intentions

Figure 3. Comparison of psychological theories

natural science.

The position taken in this dissertation is that Jung was first and foremost a scientist. It is felt that his views on the nature of psychology as a science were necessarily limited, though, due in part to the relatively recent theoretical ascendance of the philosophy of science, structuralism and phenomenological psychology. Despite the absence of a well-defined tradition of practicing psychology as a human science, however, Jung ventured boldly into unexplored areas and allowed the phenomena he found to guide his theorizing without needlessly restricting himself when he diverged from natural scientific concepts and methods.

With regard to structure, on the static level Jung felt similarly to psychoanalytic, structuralist and phenomenological theorists that human systems are interrelated wholes and not additive composites. Conscious experience must be comprehended in its relation to what remains unconscious and archetypes cannot be understood if divorced from their symbolic context.

Dynamically, Jung's theorizing parallels psychoanalytic thought in its eclectic use of causal, functional and intentional models. Although Jung downplayed the importance of causality as part of his critique of Freud, causal thinking found a place in his work on dream interpretation on the "objective level" and in his application of the laws of thermodynamics to his notion of psychic energy. Jung's idea of "unconscious compensation" as a self-regulatory mechanism is central to his theory and provides an illustration of his use of functional, equilibrium-based models. Intentions come into play in Jung's discussions of conscious problem-solving and the relationship of the individual ego to the collective unconscious in the individuation process.

Developmental considerations are prominent in Jung's work, but unlike Freud and Piaget, he restricted his attention to long-term changes in adults,

writing little on childhood development. His theoretical approach to processes such as dream series and self-realization in the individuation process bears some resemblance to Piaget's concept of equilibration and systems theorists' notions of self-organization and self-transcendence. Jung also chose a method, the forward-looking "constructive" or "final" approach, which corresponds on a formal level with its subject matter, the developmental process of individuation.

Man's subjectivity was also crucial to Jung. With regard to meaning, his focus was closer to the general issue as addressed by phenomenology and existentialism than to the more specific interpretations of particular situations explored by psychoanalysis. Jung was concerned with man's creation of meaning in the context of the fundamental issues and conflicts of existence. He saw the quest for meaning as a major part of the individuation process and believed this meaning was typically expressed in symbols. The role of intentions in Jung's thought has been mentioned above with respect to the dynamic relationships within structures.

The following chapters of this dissertation will expand upon the issues raised in this section. Chapter two will cover issues related to Jung's conceptualization of psychology as a human or natural science, the relationships among levels of phenomena and the dynamic dimension of the structural approach. These concerns will be discussed with respect to such topics as Jung's attitudes toward science and his constructive method.

The next two chapters will be devoted to the static structural concepts of the unconscious, archetypes, instincts and symbols. The final chapter on the individuation process will consider it both from a developmental perspective as an ongoing project, and as a basic expression of man's subjectivity in his reconciling the limits of his individual ego with the transcendence of the Self.

Chapter 2: Jung, Science and Methodology

This chapter will be devoted to a discussion of formal and abstract issues concerning the conceptualization of a scientific psychology and methodology in Jung's work. An appraisal of Jung's theorizing from the perspective of the philosophy of science will provide a necessary background from which to evaluate the nature and context of his ideas on the individuation process. There will be three main aspects to this appraisal. First, a consideration of Jung's own views on the nature and limits of psychology as a science will clarify his own intentions in his formulations about the individuation process. Second, an examination of his notion of psychic energy, an abstract concept integral to his theoretical treatment of individuation, will uncover some of the difficulties he faced in trying to apply his ideas about psychology to the phenomena he observed. Third, a broad critical analysis of Jung's work as a scientific enterprise in the light of some of the contemporary philosophical standards discussed in the previous chapter will attempt to determine how effectively Jung carried out his project to establish a scientific theory of the psyche.

This general critique will be followed by the final section of this chapter, which will focus on the abstract approach he took to the question of a psychological methodology — what he called the "synthetic" or "constructive" approach. This approach is central to all of Jung's writings, and provides the formal foundation of Jung's conceptualization of the individuation process as it unfolds developmentally (see Figure 1). As such, it dictates the method used in understanding the function and practical meaning of the static structural concepts of the unconscious, archetypes, instincts and symbols which will be examined in the subsequent two chapters.

Jung's Own Views on Psychology as a Science

Jung wrote extensively on the subject of the scientific status of psychology, expressing several basic concerns. Throughout his career, Jung continued to champion the idea that psychology is a subject in its own right, requiring its own methods and forms of explanation. He devoted some attention to the unique difficulties of theory formation in psychology, especially in his theoretical papers of the '30's and '40's. Another critical issue for the psychologist, he felt, was discovering a way to do full justice to the nature and practical needs of the individual in a theory that tries to be universal. Jung also viewed psychology in its context within science and reflective thought in general. He contrasted psychology with the traditional natural sciences and stressed the limits of psychology and all science. In the '40's and '50's, the last twenty years of his writing, his interest turned increasingly to the broader question of the relation of psychology to philosophy and to metaphysical speculations about the "ultimate nature" of reality.

Psychology as a Subject in Its Own Right

The impetus towards Jung's conviction that psychology is a subject in its own right appears to have originally come from his clinical work with patients. He stated that "nervous disorders ... are of psychic origin and therefore logically require psychic treatment" (Jung, 1912a, p. 258). He concluded early in his career that psychoses are often "functional" or psychological in origin (Jung, 1908, p. 156) and later included "psychoneuroses" (Jung, 1932, p. 328) and "psychosomatic disorders" as problems "in which the patient's psychology plays the essential part" (Jung, 1940a, p. 11).

As was typical of Jung's theorizing, he proceeded from these observations to a more abstract position that psychology itself constitutes a unique field of inquiry. Although he maintained this view from the start of his work, he

developed it more fully in his later papers, stating that the psyche is a "factor sui generis" with its own phenomenology and own laws (Jung, 1945b, 1954b, 1954c). He felt it is an "autonomous reality ... essentially different from physicochemical processes" (Jung, 1954b, p. 58).

Jung believed that since the psyche "has a peculiar nature which cannot be reduced to anything else" and "presents a relatively self-contained field of experience" (Jung, 1956b, p. 270), it requires its own concepts. He consistently attacked a philosophical materialism which reduced the psyche to an "epiphenomenon" as being a metaphysical doctrine, and claimed that the psyche is just as real as the external world (Jung, 1928, 1931c, 1938, 1940a). While Jung believed in the autonomy of the psyche, he qualified this by stating it has only a "relative independence of the physiological constitution" (Jung, 1929d, p. 107). Although he admitted that the psyche depends on the functioning of the brain (Jung, 1928, 1940a, 1942b, 1954c, 1956b), however, he felt that "the structure and physiology of the brain furnish no explanation of the psychic process" (Jung, 1956b, p. 270).

It is clear from the above quotations that Jung's position on the relation of different levels of phenomena is similar to that of theorists such as Polanyi and Merleau-Ponty discussed in the previous chapter. In brief, while the subject matter of psychology is conditioned by physiological processes, it possesses a relative autonomy and hence requires its own concepts and methods.

Theory Formation in Psychology

It is important to note how respectful Jung was of the notion of a scientific theory. He judged the efforts of psychologists according to the high standards achieved by natural scientists and was well aware of how far short his theorizing fell of the ideals of excellence established in the natural sciences.

Near the start of his career, Jung recognized that "in its immediate results the constructive method does not produce anything that could be called a scientific theory" (Jung, 1914b, p. 192). More than twenty years later, he was convinced that "all attempts to formulate a comprehensive theory [of psychic phenomena] are foredoomed to failure" and that "there is a constant doubt as to the possibility of its being a science at all" (Jung, 1936b, p. 125). Throughout his life, he continued to realize that there was as yet no general psychological theory from which to draw inferences or make predictions (Jung, 1944b) and that medical psychology was still "unable to rely on tested rules of procedure, on a series of verifiable experiments and logically explicable facts" (Jung, 1948c, p. 281).

Jung's stated response to the enormous difficulties in constructing an abstract theory was to remain closely tied to observation. He said "it is the facts that are of prime importance to me and not a provisional terminology or attempts at theoretical reflections" (Jung, 1952b, p. 307). He felt that it <u>was</u> still possible for psychology to be scientific, as "it is incumbent upon the psychologist to make conceptual distinctions and to attach definite names to certain groups of psychic facts", while "he must rid himself of the common notion that the name <u>explains</u> the psychic fact it denotes". (Jung, 1929d, p. 109).

Jung realized the developmental stages which would be necessary in order that psychology pass from naming facts to creating a comprehensive theory of the mind. He stated that "the first task that ordinarily presents itself is the description and arrangement of events, then comes the closer examination into the laws of their living behavior" (Jung, 1948d, p. 207). The "multifarious" and "unorganized" nature of the subject matter of psychology led Jung to emphasize description and then classification of his findings (Jung, 1941a). He asserted at an early point in his investigations that "not until the constructive method has furnished us with a great many more experiences can we start building up a

scientific theory" (Jung, 1914b, p. 193). Even in 1941, he still felt that "in view of the enormous complexity of psychic phenomena, a purely phenomenological point of view is, and will be for a long time, the only possible one and the only one with any prospect of success (Jung, 1941a, p. 182).

Although Jung did not identify all of the many ways discussed in the previous chapter in which the subject matter of psychology differs from that of the natural sciences, he did mention two key ones: the the complexity of the psyche and the relative youth of psychology as a science.[1] His conclusions were in some ways the same as those reached by the phenomenologists cited in the previous chapter. They agree that psychology's unique subject matter influences the kind of knowledge obtainable, and that the first task of the psychologist is a thorough descriptive and classificatory investigation (although they differ on the desirability or even possibility of constructing a deductive theory at some future point). How well Jung carried out the tasks he felt were important for a scientific psychology will be the subject of the third section of this chapter.

The Epistemic Subject and the Concrete Individual

An issue which deeply concerned Jung throughout his writing was the relation of his attempts at scientific theorizing with the concrete individuals with whom he worked in his clinical practice. He professed a strong opinion on the subject from the start, stating that "to speak of a science of individual psychology is already a contradiction in terms. It is only the collective element in the psychology of an individual that constitutes an object for science ..." (Jung, 1912a, p. 295). He elaborated hisideas in a late paper, "The Undiscovered Self" (Jung,1956b). He said that "the individual is not to be understood as a

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1 A third issue addressed by Jung, the fact that the object of psychology is itself a subject, will be discussed at a later point in this section.

recurrent unit but as something unique and singular which in the last analysis can be neither known nor compared with anything else. At the same time man, as member of a species, can and must be described as a statistical unit; otherwise nothing general could be said about him" (Jung, 1956b, p. 250).

For Jung, "understanding" is the attitude which must be taken to the uniqueness of the individual, whereas "knowledge" applies to abstract, statistical truths about mankind in general (Jung, 1956b, pp. 250-252). While he believed that the individual is a unity which can be approached both statistically and as a unique phenomenon, he felt that the methods by which one arrives at knowledge and understanding, respectively, are "dramatically opposed and mutually exclusive" (Jung, 1956b, p. 251).

Jung's treatment of the dilemma of the theoretical, epistemic subject on the one hand and the concrete individual on the other resulted in a clear-cut opposition which effectively excluded the latter from science. In this instance, Jung's view was absolute and static, rather than dialectical (relative and dynamic). His difficulty in incorporating the individual into his scientific theorizing at times led him to define the limits of science more narrowly than might otherwise be necessary. This issue is especially significant in his writing about archetypes, which will be discussed in Chapter 4.

The Context and Limits of Psychology as a Science

In his writing on the science of psychology, Jung took pains to describe its limits with regard to comprehending human beings and to determine its context within science and in reflective thought in general.

Jung identified two basic limitations he felt were peculiar to psychology: its intellectual nature and the ubiquity of subjectivity. With regard to the former, he stated that "science is under all circumstances an affair of the intellect" and

"every science ultimately seeks to formulate and express its material in abstractions" (Jung, 1921, p.57). He contended, however, that "the psychic phenomenon cannot be grasped in its totality by the intellect, for it consists not only of meaning but also of value, and this depends on the intensity of the accompanying feeling-tones" (Jung, 1951a, pp. 27-28). He felt that "psychology could, and actually does, grasp the processes of feeling, sensation and fantasy", but only in "abstract intellectual form" and not as "independent scientific principles" (Jung, 1921, p. 57). Therefore, he concluded that "the judgment of the intellect is, at best, only a half-truth, and must, if it is honest, also admit its inadequacy" (Jung, 1921, p. 495).

As a corollary to this recognition of the limitations of a scientific psychology, Jung believed that "the leading role is given to life itself" and the intellect must "willingly sacrifice its supremacy by recognizing the value of other aims" (Jung, 1921, pp. 58-59). This can be done by recognizing science as "a superb and invaluable tool that works harm only when it is taken as an end in itself. Science must serve; it errs when it usurps the throne" (Jung, 1938, p.6).

For Jung, the subjectivity inherent in a science of the psyche is a limitation insofar as "in the making of its theories, the psychic process is not merely an object but at the same time the subject" (Jung, 1921, p. 490). As a result, psychology possesses no "Archimedean point" outside itself (Jung, 1948d, 1954c), and "all knowledge of the psyche is itself psychic" (Jung, 1952c, p. 231). Also, "there is no medium for psychology to reflect itself in: it can only portray itself in itself, and describe itself" (Jung, 1954c, p. 217).

Jung asserted that this peculiarity of psychology distinguished it from the natural sciences, where the existence of an external point of view enhances objectivity. Thus, he was convinced that "a natural process which is very largely independent of human psychology, and can therefore be viewed as an object, can

have but one true explanation" (Jung, 1921, p. 491). To understand a psychic process, however, requires the active participation of an observer with his own psychic process. As Jung explained it, "the author of the concept can produce only just such a concept as corresponds to the psychic process he is endeavoring to explain; but it will correspond only when the process to be explained coincides with the process occurring in the author himself" (Jung, 1921, p. 491). The difficulty in differentiating these two processes, combined with the heterogeneity of the conscious psyches of psychological theorists, leads to "the existence of the most diverse theories about the nature of complex psychic processes" (Jung, 1921, p. 490).

Jung thus shared with phenomenological philosophers the recognition that the subjectivity of men made the nature of psychology different from that of the natural sciences. In determining the context of psychology, Jung also distinguished it in other ways from the natural sciences. Historically, he felt that "empirical psychology relied very much at first on physical and then on physiological ideas, and ventured only with some hesitation on the complex phenomena which constitute its proper field" (Jung, 1942b, p. 76). Two basic ways in which psychology came to differ from the more established natural sciences were in its emphasis on qualitative rather than quantitative perspectives and in the diminished role of causal explanations. Jung argued that "however desirable quantitative definitions may be, it is impossible to do without qualitatively descriptive methods" and that psychology is ineffective "when it delimits its field of work in accordance with theoretical concepts" (Jung, 1954b, pp. 55-56). He also questioned the identity of scientific explanation with causal explanation (Jung, 1914b, pp. 181-182)[1].

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1 Jung's alternative to causal explanations, his "constructive approach", will be discussed in the final section of this chapter.

Like the phenomenologists cited in the previous chapter, Jung differentiated psychology from the natural sciences. Their ideas about the necessity for qualitative description are similar, while their views on the limitations of causal explanations focus on different aspects of the issue and will be discussed in more detail in the final section of this chapter.

Jung also addressed the question of the relationship of psychology (and all science) to philosophy. He felt that the main differentiation of psychology from philosophy and metaphysics comes in its adoption of a "purely empirical point of view" and a restriction to the "observation of phenomena" (Jung, 1940a, p. 6). According to this standpoint, psychology "treats all metaphysical claims and assertions as mental phenomena, and regards them as statements about the mind and its structure" (Jung, 1939d, p. 476).

The subjectivity and decreased emphasis on causal explanations discussed above which distinguish psychology from the natural sciences, though, naturally lead to further questions about how such a science differs from philosophy. Jung argued in an early paper that the key factor separating the constructive understanding of psychology from metaphysical speculation is the recognition and assertion of the inherent subjectivity of psychological theories. Whereas "a speculative philosopher believes he has comprehended the world once and for all in his system", the psychologist admits the subjective basis of his concepts while making this basis itself an object of study (Jung, 1914b, p. 185).

Despite the theoretical distinctions which can be made between psychology and philosophy as disciplines, a philosophical Weltanschauung remains in the background of every scientific theory. Jung believed that "everyone has a view of the world, though not everyone is aware of it" (Jung, 1914b, p. 191). The appropriate functioning of philosophy as the broader context of science is disrupted, however, when scientific concepts and hypotheses are reified. Jung stated

that to hypostatize a concept and treat it like a "supreme principle of reality" is effectively to re-introduce metaphysics (Jung, 1939d, p. 477).

Jung understood clearly the unscientific nature of speculation about the "ultimate nature of reality". Throughout his writings, he consistently maintained the position that metaphysics is beyond the scope of science. To cite a representative statement, he said that "any honest thinker has to admit the insecurity of all metaphysical positions, and in particular of all creeds. He has also to admit the unwarrantable nature of all metaphysical assertions and face the fact that there is no evidence whatever for the ability of the human mind to pull itself up by its own bootstrings, that is, to establish anything transcendental" (Jung, 1939d, p. 478).

Jung nevertheless was fascinated by metaphysical speculation and frequently indulged in such conjectures regarding the relationship of psychology and physics on a transcendental plane.[1] While this subject came more and more to occupy his attention in his last few years, it will not be thoroughly dealt with in this dissertation. Two examples of his thoughts will be briefly noted, though, to illustrate the nature of the issue with which he was concerned.

He declared that "the common background of microphysics and depth psychology is as much physical as psychic and therefore neither, but rather a third thing, a neutral nature which can at most be grasped in hints since in essence it is transcendental" (Jung, 1955b, p. 538). He felt that "it is not only possible but fairly probable, even, that psyche and matter are two different aspects of one and thesame thing... Our present knowledge does not allow us to do much more than compare the relation of the psychic to the material world with two cones, whose apices, meeting in a point without extension -- a real zero point — touch and do

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1 His writings on "synchronicity" fall into this category.

not touch" (Jung, 1954c, p. 215).

Jung agreed with phenomenological philosophers about the value of making implicit philosophical assumptions explicit and in differentiating science from metaphysics. The temptation to engage in transcendental speculation for Jung remained strong, however, and an important task of this dissertation will be to determine which of his speculations are in the service of science (falsifiable hypotheses about inferred processes) and which are essentially metaphysical (unfalsifiable conjectures).

Psychic Energy

An examination of Jung's notion of psychic energy, or "libido", an abstract concept integral to his theoretical treatment of individuation, now follows. This discussion is intended to illustrate the difficulties Jung faced in trying to apply his ideas about psychology as a unique science still in its infancy to the phenomena he observed. The phenomena Jung attempted to account for will be identified, and then his concept of psychic energy will be studied as to its nature and evolution over time. The source of this concept in the natural sciences will be discussed, followed by a critique of its limitations for the human science of psychology and a brief suggestion of possible alternative approaches to the issue.

The Phenomena to be Explained

The basic phenomenon which prompted the use of the concept of psychic energy is a fundamental one: the activity of the psyche, including its nature and transformations. Jung variously referred to it as attention, appetite, desire, interest and "intentionality in general" (Jung, 1921, 1952c, 1954c). Jung was interested in several very general aspects of this basic psychic activity: change in the object of behavior, reappearance of old behavior, similarity of old and new behavior, ease of change from old to new behavior and intensity of behavior.

The first aspect he felt needed attention was the very fact of a change in interest from one "object" (or set of objects) to another (Jung, 1912b, 1954c). A closely related occurrence was a new consciousness of something that either may have been conscious in the past but had disappeared from consciousness, or that had only been perceived "subliminally" (Jung, 1954c).

The third and fourth classes of phenomena are related to the characteristics of a change in interest: the similarity of the new object of attention to the old and the ease with which a transfer of attention is made. With regard to the former, Jung referred to the fact that often, a new behavior carries over "parts or characteristics of the previous structure with which it was connected" (Jung, 1928, pp. 20-21). Concerning the latter, Jung noted that often, there is "the development of a lasting and relatively unchanging attitude" which resists attempts to transform it (Jung, 1928, p. 26). This situation is especially clear when, "despite the most desparate exertions, and despite the fact that the object chosen or the form desired impresses everybody with its reasonableness, the transformation still refuses to take place" (Jung, 1943a, p. 63). Instead, "subjective contents and reactions press to the fore and the situation becomes full of affect and ripe for explosions" (Jung, 1928, p. 32).

The final property of psychic activity which called for an explanation was "the intensity of impulses, affects, activities, and so on" (Jung, 1952c, p. 328). Intensity can be observed directly or inferred by its effects on other behavior.

The Nature and Development of Jung's Concept of Psychic Energy

In order to account for the variety of phenomena described above, Jung tried to devise a concept of psychic energy sufficiently broad as to include the range of events he observed, yet narrow enough to be scientifically meaningful. His ideas on this subject developed over the course of his career.

The notion of psychic energy was mentioned for the first time in Jung's 1907 monograph, "The Psychology of Dementia Praecox". He seemed to use it there, without further explanation, as a kind of "substance" which could be "diminished" (p. 67) or "applied" (p. 48).

Jung began to differentiate his own meaning of this concept during the years he wrote his papers breaking theoretically from Freud (1912-14), and in fact an important aspect of their disagreement centered around their divergent use of this idea. Jung decided "to identify, 'psychic energy' with 'libido'" in the original (1912) version of the work which is now called Symbols of Transformation (Jung, 1952c, p. 135). He rejected Freud's exclusive linking of libido with sexuality, however, in favor of "a kind of neutral energy" (Jung, 1952c, p. 139). Jung's version of libido was used "in the more general sense of passionate desire" (Jung, 1912b, p. 111), and as "vital energy in general" (Jung, 1913b, p. 248).

He took pains to clarify his theoretical views on psychic energy from 1912 on. In trying to account for general aspects of change in behavior, he was dissatisfied with prior theories which postulated different "elementary components" and "psychic faculties" for each behavior which needed explanation (Jung, 1912b, p. 114) or which similarly tried to reduce behavior to "instincts, drives or dynamisms" (Jung, 1918, p. 7). As Jung pointed out, "Quite apart from the hopeless theoretical confusion this would lead to, we would be sinning against the methodological axiom that 'explanatory principles are not to be multiplied beyond the necessary'" (Jung, 1912b, pp. 114-15).

In place of components and forces, he posited "a hypothetical quantity, an 'energy', as a psychological explanatory principle, ... without harbouring any prejudice with regard to its substantiality" (Jung, 1918, p. 8). It is an "abstraction", employed "as an explanatory principle for all quantitative changes" (Jung, 1918, p.7). In this way, he arrived at a concept general enough to apply to the

phenomena with which he was concerned.

He also strove to be specific enough to make this notion meaningful. Against criticisms that he was resurrecting vitalism, with its "life-force", Jung repeatedly stressed that "the libido with which we operate is not only not concrete or known, but is a complete X, a pure hypothesis, a model or counter" (Jung, 1912b, p. 124). Even though "the idea of energy is admittedly a mere verbal concept", however, it "designates simply the conformity of the phenomena of force" (Jung, 1921, p. 33).

In his major paper on the subject, "On Psychic Energy", Jung further clarified his conceptual distinction between forces and psychic energy in general. Forces are the "specific forms of energy" while energy is "a quantitative concept which includes them all. It is only ... forces and states that are determined qualitatively" (Jung, 1928, p. 15). Therefore, energy "has nothing to do with the things themselves but only with their quantitative relations of movement" (Jung, 1928, p. 6).

Jung thus constructed a very abstract concept of psychic energy designed to avoid the pitfalls of vitalism while not lapsing into a psychology of "faculties". So far, however, this notion is so general as not to be particularly useful. Starting with his book on Psychological Types, which appeared in 1921, he elaborated two other ideas he related to psychic energy: the polarity of opposites and the intensity of behavior.

Jung took the polarity of opposites as a fundamental phenomenon, stating "I see in all that happens the play of opposites, and derive from this conception my idea of psychic energy" (Jung, 1929b, p. 337). He believed that without a tension of opposites, "no energy would be possible" (Jung, 1928, p. 53). Also, "the concept of energy implies that of polarity, since a current of energy necessarily presupposes two different states, or poles, without which there can be no current.

Every energic phenomenon (and there is no phenomenon that is not energic) consists of pairs of opposites" (Jung, 1921, p. 202).

As a result of the polarity of opposites, "the concept of energy necessarily includes the idea of a regulated process, since a process always flows from a higher potential to a lower" (Jung, 1921, p. 212). This flow of energy "has a definite direction (goal) in that it follows the gradient of potential in a way that cannot be reversed" (Jung, 1928, p. 4). The "lower potential" or goal is a "natural gradient" and not arbitrary, for "the libido has, as it were, a natural penchant: it is like water, which must have a gradient if it is to flow" (Jung, 1952c, p. 227). Thus, "however much energy may be present, we cannot make it serviceable until we have succeeded in finding the right gradient" (Jung, 1943a, p. 63).

The libido follows the gradient, or "progresses", by "a continual satisfaction of the demands of environmental conditions" (Jung, 1928, p. 32). During the progression of libido, "the pairs of opposites are united in the coordinated flow of psychic processes" (Jung, 1928, p. 32). When adaptation breaks down, however, there is "a damming up of libido, and the stoppage is always marked by the breaking up of the pairs of opposites" (Jung, 1928, p. 32). If, then, "one of the opposing forces is successfully repressed a dissociation ensues, a splitting of the personality, or disunion with oneself" (Jung, 1928, p. 33).

Jung thus has effectively referred to the initial behavior and the final behavior as "pairs of opposites". This characterization of the "flow" of libido was intended to help explain phenomena regarding the "ease of change" from old to new behavior, and the conflict often associated with such change.

Besides the polarity of opposites, Jung also explored the idea of energy as a quantitative concept to measure the intensity of psychic processes. As early as 1921, Jung defined psychic energy as "the intensity of a psychic process, its psychological value" (pp. 455-56). This is not a moral value, but "its determining

power, which expresses itself in definite psychic effects" (Jung, 1921, p. 456).

Jung realized that it is impossible to measure psychic energy directly, but felt that a "quantitative estimate" could be made (Jung, 1928, p. 9). For conscious contents, an "approximate determination of intensities" can be made by virtue of "the subjective value system ... of the single individual" (Jung, 1954c, p. 234; Jung, 1928, p. 9). This is done if we weigh our subjective evaluations against one another and determine their relative strength" (Jung, 1928, p. 9). This method holds only for value intensities of similar qualities.

For unconscious values, Jung believed "an indirect but objective estimate [is] possible" (Jung, 1928, p. 10). The energy of an unconscious content corresponds to its "constellating power", which can be estimated "in various ways: (1) from the relative number of constellations affected by the nuclear element; (2) from the relative frequency and intensity of the reactions indicating a disturbance or complex; (3) from the intensity of the accompanying affects" (Jung, 1928, p. 12). Disturbances include "lapses of speech, mistakes in writing, slips of memory, misunderstandings, and other symptomatic actions" (Jung, 1928, p. 13). Physiological reactions (pulse, respiration, GSR) provide a basis for determining the intensity of affects.

Thus, while Jung acknowledged psychology's decreased precision compared with that of the natural sciences in quantitative measurement, he felt that psychic energy was a useful concept to employ in dealing with the quantitative aspect of behavior. He also devised several means of indirect estimates of this property.

The Relationship of Physical and Psychic Energy

Jung's concept of psychic energy discussed above has its roots in the physical energy of the natural sciences. Jung believed that his concept of psychic energy was useful in accounting for various phenomena he observed, but he

realized he needed to clarify its relationship with the more accepted notion of physical energy.

Given the value of an energic point of view, Jung asserted that since "we cannot prove scientifically that a relation of equivalence exists between physical and psychic energy, we have no alternative except either to drop the energic viewpoint altogether, or else to postulate a special psychic energy" (Jung, 1928, pp. 15-16). He later stated that "if psychology nevertheless insists on employing its own concept of energy for the purpose of expressing the activity of the psyche, it is not of course being used as a mathematical formula, but only as its analogy" (Jung, 1954c, p. 233).

Thus, physical and psychic energy are separate but analogical concepts. Jung believed that the use of a notion of psychic energy would not impair the physical laws which had been formulated (1928). Also, although he refused to make a definitive statement "whether the psychic energy process exists independently of, or is included in, the physical process," he said that "it seems highly probable that the psychic and the physical are not two independent parallel processes, but are essentially connected through reciprocal action" (Jung, 1928, pp. 17-18).

Despite their separateness, Jung pointed out many similarities between physical and psychic energy. He asserted that "all psychological phenomena can be considered as manifestations of energy, in the same way that all physical phenomena have been understood as energic manifestations" (Jung, 1913b, p. 247). In addition, "the concept of libido in psychology has functionally the same significance as the concept of energy in physics" (Jung, 1952c, p. 131).

More specifically, Jung felt there were three major similarites between physical and psychic energy: the conservation of energy, the factor of extensity and the progression toward entropy. With regard to the first property, as early as

1912 Jung stated that his theorizing about libido "leans heavily ... on the law of the conservation of energy" (1912b, p. 115). Later, in his paper "On Psychic Energy", he made a stronger declaration that "an energic standpoint is otiose if its main principle, the conservation of energy, proves to be inapplicable" (Jung, 1928, p. 18).

Jung distinguished between "the principle of equivalence and the principle of constancy. The principle of equivalence states that 'for a given quantity of energy expended or consumed in bringing about a certain condition, an equal quantity of the same or another form of energy will appear elsewhere'; while the principle of constancy states that 'the sum total of energy remains constant, and is susceptible neither of increase nor of decrease'" (Jung, 1928, p. 18).

Jung focussed on the principle of equivalence, claiming that "the disappearance of a given quantum of libido is followed by the appearance of an equivalent value in another form" (Jung, 1928, p. 19). He felt that this principle should be upheld even when no substitute is obvious, "for careful observation of the patient will soon reveal signs of unconscious activity ... a product in the unconscious which, despite all differences, has not a few features in common with the conscious contents that lost their energy" (Jung, 1928, pp. 19-20). The value of the principle of equivalence lies in the predictions it yields (general though they may be) regarding the state subsequent to a sudden decrease in attention to a particular situation.

With the second similarity between physical and psychic energy, the factor of extensity, Jung believed he could account for the frequent structural similarity between the new and the old objects of attention. He said that as does physical energy, so "libido does not have a structure as pure intensity and pass without trace into another, but ... it takes the character of the old function over into the new" (Jung, 1928, p. 21).

The third basic similarity Jung identified between physical and psychic energy is in the principle of entropy. In a "relatively closed" physical system, entropy is a "levelling process [which] corresponds to a transition from an improbable to a probable state, whereby the possibility of further change is increasingly limited" (Jung, 1928, p. 26). Jung stated that "the psyche, too, can be regarded as such a relatively closed sytem, in which transformations of energy lead to an equalization of differences" (Jung, 1928, p. 26) and to a "condition of general equilibrium" (Jung, 1928, p. 4). He went on to say that "psychologically, we can see this process at work in the development of a lasting and relatively unchanging attitude" (Jung, 1928, p. 26). Jung thus believed that the entropic property of energy could explain the phenomena of "ease of change" of attention from one object to another described above.

A Critique of Jung's Use of Psychic Energy as an Explanatory Concept

The analysis of Jung's use of the concept of psychic energy that follows will attempt both to assess how well his concept actually performs the tasks it was designed for and to classify the general type of notion it is. This critique will include a brief mention of alternative types of concepts developed to address the same phenomena, and will lead into a more general evaluation in the next section of Jung's theorizing on the individuation process as a scientific enterprise.

With regard to the phenomena to be explained, Jung believed that the notion of a "redirection" of libido accounted for the switch in attention from one situation to another. While "psychic energy" may be meaningfully understood as a synonym for interest or attention, however, it by no means explains a shift in interest. Instead, as is characteristic of most of the uses to which Jung put this concept, it is purely descriptive and not explanatory: it merely states the fact that there has been a shift, but doesn't say how this shift occurs. The very generality of the concept Jung produced allowed him to avoid positing a myriad of

"forces", but at the same time it caused him to surrender any explanatory power it may have had by rigidly separating it from any particular manifestation.

The second phenomenon he noted, the renewed interest in a situation which had been previously attended to and then neglected, is similarly merely described if one says that libido has been "reinvested" in the old situation. The idea of a "critical threshold" of energy which an object of attention must attain to reach consciousness has also been applied to this phenomenon, and this will be discussed below along with other aspects of the intensity of behavior.

The similarity of the new object of attention to the old, a third phenomenon Jung tried to explain, is also only described by a "factor of extensity". This "factor" in no way accounts for the observed similarity but merely notes it.

Jung approached the phenomenon of "ease of change" of attention in two ways. The first is his notion of a "natural gradient" (Jung, 1952c), which he "derived" from his postulate of the universal tension of opposites. In itself, the idea of a natural gradient for shifts in attention is again merely descriptive. It does offer some potential explanatory value if laws regulating the nature and function of such gradients could be independently established. Jung, however, never did this, so that to assert that libido moved along a more or less steep gradient is merely to describe the observed ease of change of attention. In addition, the concept of gradient has an extremely dubious connection to a principle of the "tension of opposites", as Jung unjustifiably equates the initial and final behaviors with "pairs of opposites". Given such a loose interpretation of "opposites", Jung's principle adds nothing to the separate idea of a gradient.[1]

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1 On the more limited context of psychological conflict, though, the idea of a tension of opposites in more beneficial, as will be discussed in Chapter 5.

Jung's second way to attempt to explain the ease of change of attention was through the principle of entropy. While the notions of a "factor of extensity" and "natural gradient" described above were directly borrowed from the natural sciences, they are general enough to be easily adapted to psychological phenomena, albeit in a merely descriptive fashion. The principle of entropy, however, is more specific, and does not readily conform to many phenomena in the human sciences.

Two basic objections can be raised against applying this natural scientific concept to psychology. First, except in special cases of isolation from the environment, the human mind is not a "relatively closed system", which is a necessary condition for the principle of entropy to apply. Second, the underlying assumption about the mechanism for achieving a state resistant to change in a physical system is the occurrence of a series of random motions, which lead to a mathematically more probable state. In human behavior, however, the assumption of a purely random process would be difficult to defend, and certainly the "final" state is not always the most "probable". Jung evidently saw the similarity in the final states of some physical and psychological processes with regard to ease of change, but then assumed without further evidence that the laws governing the development and nature of these processes were also isomorphic.

The fifth phenomenon Jung wished to account for by means of psychic energy was the intensity of behavior. As with the previous phenomena discussed, the concept of psychic energy does not explain intensity, but it does provide an attempt to systematize the quantitative aspects of attention. Also, the idea of a critical threshold of intensity beyond which the object of attention enters consciousness is a useful one and can be empirically tested. Unfortunately, there are two major limitations to a quantitative concept of psychic energy. First, direct measurement is impossible, although both subjective estimates of intensity

and/or objective, indirect measurement (of the effects of energy) is possible. The second, more serious drawback consists of the difficulty of comparing intensities of different qualities when an objective measurement is impossible. These two factors severely limit the usefulness of libido as a quantitative concept.

Many of the properties Jung wished to bestow upon psychic energy were borrowed from the natural sciences. Although some were general enough to be adapted plausibly for human situations, others did not conform well to the qualitative differences in psychological phenomena. Two broader difficulties in employing a notion which originated in the natural sciences can also be identified: the nature of the relationship between the two kinds of energy and the danger of reification.

With regard to the former problem, the larger issues of the mind/body relationship and the relationship between psychology and the natural sciences are raised. Although Jung scrupulously avoided making definitive statements about the "ultimate nature" of these relationships, he obviously leaned towards an interactionist position (Jung, 1928). He failed to see, however, the dualistic implications of such a position, with the resulting disruption of the self-contained (by definition) chain of physical causality (Holt, 1967).

Another hazard of adopting a concept from the physical sciences lies in the temptation to interpret it as referring to something material: the danger of reification. While Jung consistently denied that psychic energy was a "substance", he frequently used this concept in ways extremely suggestive of a material interpretation. For example, libido is said to "dam up" (Jung, 1928, p. 32), "accumulate" (Jung, 1913b, p. 248) and even to "overflow" (Jung, 1921, p. 19), as does a liquid. Although this violation of the spirit of psychic energy as an abstract concept might be defended as merely metaphorical, it does require a constant vigilance to ensure the user of the concept remembers its abstract

nature.

A more serious difficulty arises if this vigilance is relaxed and one utilizes the hypostatized version of the concept for explanatory purposes. Jung was guilty of this practice when he used a reified psychic energy as an agent or cause of behavior. For example, Jung said libido could "activate" reminiscences (Jung, 1912b, p. 162), cause "a disturbance of the psychic equilibrium" (Jung, 1927, p. 122), or explode "in the form of a more or less acute neurosis" (Jung, 1934b, p. 194). In this way, Jung distorted the concept of psychic energy by improperly using it in his theory in a material manner for which it was ill-suited because of its abstract nature.

Many of the limitations of Jung's notion of psychic energy stem from the attempt to adapt a concept from the natural sciences to fit a qualitatively different subject matter. A very brief mention will here be made of contemporary systems approaches to the phenomena Jung tried to account for energically, which strive to minimize or avoid the shortcomings of an energic model. The references to contemporary systems theorists are not intended to be comprehensive or detailed, but merely to indicate other types of concepts which can be applied to the phenomena in question.

As was pointed out in the previous chapter, psychological phenomena can be more accurately conceptualized using the notion of a system whose parts are interrelated than by assuming the independence and random motion of discrete elements, which is often useful in the physical sciences. Within the broad context of "systems theory", there are various approaches to the phenomena under discussion. These include the study of "behavioral systems" based on biology (Bowlby, 1969), "information processing" and "feedback" models deriving from work with machines (Rosenblatt & Thickstun, 1977; Rapaport, 1968; Mowrer, 1968; Miller et al., 1968; Holt, 1967), and concepts from cognitive psychology such

as perception, expectations and affects (Rosenblatt & Thickstun, 1970; Rubinstein, 1967).

A common denominator to all these positions is a denial of the need for a notion of psychic energy to "explain" a shift in attention from one object to another. Instead, there is a stress on both organismic (expectations and affects) and environmental factors in a multiple determination of any particular change (Rosenblatt & Thickstun, 1970; Rubinstein, 1967). Bowlby (1969) agreed that characteristics of a "behavioral system" in the context of its environment could explain the stops and starts of behavior better than an abstract concept of energy. Instead of separating the psychological aim or motive from the impulsion or cause (libido) as in the energic approach, systems theorists treat the combination of organism and environment as a unit (Bowlby, 1969; Apfelbaum, 1965). With the entire situation as the unit of reference, the concept of the function of a set of behaviors can effectively be used in an explanatory sense that Jung's abstract energy cannot, while not postulating the specific "forces" Jung had sought to avoid (Rubinstein, 1967; Apfelbaum, 1965).

Systems theorists believe their models can also account for some of the other phenomena Jung tried to explain with psychic energy. The similarity between an old and new object of attention is seen to be due to man's perceiving symbolically and not because of an "extensity factor" (Rosenblatt & Thickstun, 1970, 1977; Apfelbaum, 1965). While this idea, too, is not explanatory, it does situate the description within a characteristically human level of discourse. With regard to "ease of change" and the development of "lasting attitudes", the mechanism of positive feedback in a neg-entropic direction to amplify deviations is often both more accurate and more useful for explaining the generation of such attitudes than an assumption of random, entropic motion (Maruyama, 1968). Finally, various suggestions have been made by systems

theorists to explain the intensity of behavior, including studying the role of the activating conditions (Bowlby, 1969), competing priorities of different behavioral systems (Rosenblatt & Thickstun, 1977), and the "degree of match" between expectation or goal image and the actual, perceived object (Rubinstein, 1967; Rosenblatt & Thickstun, 1977).

General Critical Overview of Jung's Work as Scientific

Before proceeding to a more specific discussion of Jung's constructive method and the key concepts involved in his work on the individuation process, it is important to provide a general overview of the scientific status of Jung's theorizing. This will include an assessment of how well Jung in fact carried out the tasks he set for himself with regard to furthering the science of psychology, and also an evaluation of Jung's efforts according to the contemporary criteria for science described in the previous chapter. It will be found that on a formal level, the concept of psychic energy is fairly representative of Jung's work on the individuation process, and that the critical analysis in the previous section touched on many of the major issues related to the scientific nature of his theories.

With respect to Jung's own stated thoughts about the nature of psychology which were dealt with in the first section of this chapter, he was fairly successful in his achievements. He adhered for the most part to his principles that the psyche is a phenomenon in its own right with its own laws, as he did not hesitate to develop new concepts based on his observations of psychic reality in order to account for them. Even when he borrowed concepts from another field of inquiry, he made it clear that they had a unique meaning when used psychologically. His main weakness in this area was his failure to recognize the extent to which concepts adapted from another subject matter still retain implicit assumptions

and relationships which were appropriate in their original context, but which can subtly influence observations in the new field so that qualitative differences between the two subject matters may be overlooked. In addition, his desire to use concepts from another field sometimes led him to overgeneralize by extending weak analogies which were initially plausible only in a very limited context but not in the universal sense he wished to defend. It should be noted on Jung's behalf that he was a pioneer in the science of psychology and so did not have a well-established tradition or set of concepts in psychology to draw upon in his work, thus tempting him at times to use notions from the natural sciences or biology.

It is also to Jung's credit that he was very aware of the deficiencies in his theorizing. The four criteria for scientific work and the related qualities of a good theory which were elaborated in the preceding chapter will be used to assess Jung's own achievements in this area.

The first criterion was that the subject matter be dealt with systematically, in a parsimonious and an internally consistent manner. Jung did approach psychological phenomena systematically, striving to intellectually organize and classify what he observed. He was also parsimonious, as he introduced new theoretical terms only when necessary and put forth a constant effort to keep explanatory principles to a minimum. For the most part, his theorizing was also internally consistent, with one major exception: lapses into reification of abstract terms. While he would always assert that his terms were <u>intended</u> to be abstract and hypothetical <u>models</u> of reality, he would <u>use</u> such concepts as if they were substantial <u>entities</u>. After their transformation from abstract to concrete nouns, he would then endow them with causal properties appropriate only to material things. This shortcoming pervaded his theoretical writing, as he often hypostatized "the unconscious" and archetypes as well as the example of psychic energy discussed above. This issue will receive more attention in the following

two chapters.

A second criterion for scientific theories also applies to their internal structure and includes several features: a delimited subject matter, precisely defined terms, systematic interrelationships among theoretical terms and the maximum possible breadth, depth and flexibility. Jung did study a delimited subject matter, although it was very broad. He devoted a great deal of attention to clarifying his theoretical terms, but his definitions were generally imprecise at best and vague and ineffective at worst. He was able to describe and classify the processes he observed, but the nature of his descriptions exhibited deficiencies typical of beginning sciences: they were imprecise and tended to be metaphorical and qualitative rather than quantitative.

With regard to establishing systematic interrelationships among theoretical terms, Jung accomplished little. Such interrelationships need to be clarified in order to formulate the laws governing observed phenomena. Only in this way can a science move past description to explanation, where necessary and sufficient conditions for an event can be specified and predictions made about future occurrences. As Zigler (1963) noted and Jung himself was aware, a young science often first develops both descriptive, empirical concepts and highly abstract, speculative notions, but lacks "middle order" concepts to make detailed explanations possible. Jung's theorizing, too, seldom moved past the phase of description combined with the construction of an abstract "grand design", probably because he was so fascinated with the richness and complexity of the phenomena he observed. The next step in advancing Jung's work as science would be to develop partial explanations and identify causal relationships in limited areas with the ultimate goal of coordinating these laws within a consistent and comprehensive framework. Jung left this task for his successors; as they stand, his own achievements are a foundation and an invitation to a scientific theory, but in no

way a completed project.

Jung's extraordinary curiosity, erudition and vision combined to ensure a maximum scope and comprehensiveness of his theorizing. His penchant for highly abstract concepts has laid the basis for a theory with maximum "depth" once some middle order notions are introduced and their interrelationships elaborated. He also strove for the greatest possible universality, with his focus on phenomena common to all mankind. With respect to flexibility, Jung's work was, if anything, too flexible due to his vagueness and imprecision.

The third criterion for a scientific enterprise is that it be undertaken in a critical spirit, seeking independent criteria to verify or falsify hypotheses. Jung demonstrated a keenly critical mind and repeatedly pointed out evidence which would corroborate his ideas. Generally, however, this was done in an unsystematic fashion. With a few exceptions, he didn't design experiments to test his hypotheses or even engage in a program of "controlled investigation" which Nagel (1961) contended was crucial for a scientific discipline. Again, Jung was fairly content to observe, classify and speculate while leaving the task of falsification to his successors.

A final criterion for scientific work is that it be intersubjective, by means of linking concepts either directly or indirectly to empirical observation and experience. This link should be made through "correspondence rules", which specify the empirical events referred to by, or associated with, theoretical terms. While Jung provided a general idea of the observational phenomena on which his concepts were based, he did not formulate specific and practical rules to connect his concepts with observation. A more systematic and detailed performance of this task would be necessary both to communicate the origin and meaning of his concepts (thus distinguishing them from metaphysical ideas and supplying a basis for their reliable use) and to enable a translation from abstract theory back to

observation for the purpose of testing hypotheses for their validity. This is still another project unfinished by Jung himself and left for his successors.

In summary, Jung's work as science has both strengths and weaknesses. With regard to strengths, the single most significant aspect of this work was his ongoing commitment to establish psychology as a subject in its own right, with its own methods and types of explanation. The breadth of his interest and his high capacity for abstraction helped to lay a foundation for a theory with maximum breadth, depth, universality and flexibility. He approached a delimited subject matter in a critical way and was for the most part systematic, parsimonious and internally consistent.

Several major deficiencies in Jung's theorizing have been noted. He at times inappropriately transferred concepts from the natural sciences and tended to reify abstract terms. His definitions of key concepts were vague and imprecise, and he did not establish a body of laws systematically related to form a unified theory. Finally, he did not establish correspondence rules to aid in testing hypotheses and usually did not engage in "controlled investigations" of particular issues.

Although many of these weaknesses can be attributed both to the relative youth of the science of psychology and to Jung's preference to devote his time to broad description, classification and speculation rather than a search for psychological "laws", it is probable that taken together, the difficulties with his theorizing have played a large part in the relatively low esteem in which his work is held by contemporary psychologists. Jung did not attempt to solve many of these problems, even in his later years, and his followers have also made little progress in this direction (if indeed, they even recognize the existence of problems). Unless a great deal of work is done to fill in the gaps in Jung's models and to operationalize and test concepts which are clear and unreified, however,

there is little hope that "Jungian theory" will continue to make significant contributions to psychology except as parts are assimilated to some other theory which has successfully addressed these issues.

The Constructive Method

Another source of the lack of acceptance of Jung's work by academic psychologists was his championing of a "constructive method". He applied this method consistently throughout his work on the individuation process. His method was based upon his view of psychological phenomena as constituting a field of inquiry in their own right, and his utilization of this method both distinguished him from theorists operating within a natural scientific paradigm and helped to point psychological theorizing in a direction more appropriate to its subject matter. The past (and to a great extent, continuing) dominance of the natural scientific paradigm within psychology, in combination with the intrinsic limitations discussed in the previous section, has led many psychologists to be skeptical of the scientific value of Jung's work. The increasing importance of such non-natural scientific approaches as structuralism, systems theory and phenomenology, though, may lead to a re-appraisal of the scientific validity of Jung's constructive method, an examination of which now follows.

In his investigation of psychological phenomena, Jung concluded very early in his career that the reductive method of the natural sciences which searched for an event's causes was, by itself, inadequate. He stated that "to understand the psyche causally is to understand only one half of it" (Jung, 1914b, p. 183) and that the reductive method "does not altogether do justice" to processes of symbolization (Jung, 1914b, p. 180). He felt that while " a causal explanation may be relatively satisfactory from a scientific point of view ... psychologically there is still something unsatisfying about it" because it does not account for the purposes

and meaning of behavior (Jung, 1931a, p. 371).

Given that "what is plainly directed towards a goal cannot be given an exclusively causalistic explanation", he believed that "we are obliged to consider it also from the final point of view" (Jung, 1917, pp. 295-296). In summing up his views on this issue, he stated that "the method of the Zurich School, therefore, is not only analytic and causal but synthetic and prospective, in recognition of the fact that the human mind is characterized by fines (aims) as well as by causae" (Jung, 1916a, p. 291).

It will be helpful at this point to contrast the two methods Jung identified. The first method, traditionally associated with the natural sciences, he called interchangeably reductive, analytic, causal and mechanistic, while he referred to his own psychological method as constructive, synthetic, final and prospective. The various terms for each method will be treated as synonymous for the purposes of this discussion.

In the chapter on definitions in Psychological Types (1921), Jung said that "the reductive method is oriented backwards ..., whether in the purely historical sense or in the figurative sense of tracing complex, differentiated factors back to something more general and more elementary" (p. 459). He further clarified the two aspects of this method in other writings. With regard to its historical sense, the reductive method is concerned with how an event "came to be", and with pointing out the "foundations out of which ... [it] develops historically" (Jung, 1914b, p. 179). It shows how an event "follows from antecedent circumstances according to a rigorous causality" (Jung, 1943a, p. 45).

The second aspect of the reductive method consists in reducing things "to their elements" and to "simpler and more general components" (Jung, 1914b, p. 185, 180). In this way, it "reduces everything to known basic principles" (Jung, 1914b, p. 192), such as "underlying instinctual processes" (Jung, 1943a, p. 91).

The constructive method, in contrast, has the opposite orientation with regard to both of the aspects just described and in addition takes into account the unique phenomena related to man's subjectivity: purpose and meaning. Jung based his work on this method from the outset of his career, as even his medical dissertation in 1902 included some discussion of the "teleological significance" of psychological phenomena (p. 79).

Instead of identifying the antecedents or causes of an event, the constructive method looks forward in time. In utilizing this method, the investigation conceives the psychological phenomenon as "oriented to a goal or purpose" (Jung, 1921, p. 422) and as "aiming at something" (Jung, 1914b, p. 186). One would inquire about the purpose or effect of an action (Jung, 1948b, p. 243), and how it "anticipates future developments" (Jung, 1921, p. 422). Thus, according to this point of view, "causes are understood as means to an end" (Jung, 1928, p. 23).

Again in contrast to the reductive method, a constructive approach does not analyze a phenomenon into its components or identify basic principles, but "develops the material" (Jung, 1921, p. 252) and elaborates things "into something higher and more complicated" (Jung, 1914b, p. 185). In this way, one can understand better how an action is an attempt at a new attitude or a differentiation of the personality (Jung, 1921, p. 252).

The constructive method also takes into account man's subjectivity, as expressed in the phenomena of purpose and meaning. Purposes are included in the future orientation of this approach with its consideration of goals. "Meaning" is discussed by Jung in two contexts. In the first case, the actual goal of the behavior in question may be to convey a meaning. In such a situation (e.g. a symbolic creation like a fantasy or work of art), while a casual explanation may tell us how something came to be, a constructive approach is necessary to "show

us its living meaning" (Jung, 1914b, p. 183). Also, "Just as analysis breaks down the symbolical fantasy-material into its components, so the synthetic procedure integrates it into a universal and intelligible statement" (Jung, 1943a, p. 91).

The second context in which meaning plays a crucial role occurs when an action has a goal apart from any communication of meaning, but a discovery and comprehension of the nature of the goal requires an understanding of the meaning of the action. As Jung stated it, "the aim of the constructive method, therefore, is to elicit ... a meaning that relates to the subject's future attitude" (Jung, 1921, p. 423). In this instance, elaborating meaning is a tool to aid in reaching a goal, but is not itself the primary goal.

On occasion Jung did not himself distinguish the two uses of the phenomenon of meaning described above, and used the concept ambiguously. In giving an example about a locomotive, he declared that even after knowing its origin and constituents, "we do not really know anything about the locomotive's function, that is to say its meaning" (Jung, 1917, p. 296). Thus, Jung at times used "meaning" as synonymous with a goal-oriented function, even though he usually meant it in the sense of a communication. This is an example of Jung's vague use of theoretical terms. While meaning is a complex concept and difficult to characterize precisely, it is so central to Jung's theorizing that a consistent usage is essential in order for it to have maximum scientific value.

Jung realized that proposing to use a "constructive method" would be controversial for those accustomed to causal reductionism as "the" scientific method, so he did not hesitate to defend his position. He claimed that the final viewpoint is "empirically justified by the existence of series of events in which the causal connection is indeed evident but the meaning of which only becomes intelligible in terms of end-products (final effects)" (Jung, 1917, p. 295).

He also gave a theoretical justification for the existence of such "series of

events" in psychology, based on the human characteristics of creativity and development. In referring to the creativity of the human psyche, he said "Only on one side is it something that has come to be, and, as such, subject to the causal standpoint. The other side is in the process of becoming, and can only be grasped synthetically or constructively" (Jung, 1914b, p. 183). Since the future is "in its essence always new and unique, the present expression is bound to be incomplete, germ-like, as it were, in relation to the future. Insofar as we regard the actual content of the psyche as a symbolic expression of what is to be, we have to apply a constructive interest to it" (Jung, 1914b, p. 185).

With regard to the notion of development, Jung asserted that "it is obvious that the spirit of the reductio ad causam ... can never do justice to the idea of final development, of such paramount importance in psychology, because each change in the conditions is seen as nothing but a 'sublimation' of the basic substance and therefore as a masked expression of the same old thing" (Jung, 1928, p. 22). The central aspect of the psyche, however, is that it "must go on developing, the causes transforming themselves into means to an end, into symbolical expressions for the way that lies ahead" (Jung, 1928, p. 24).

Jung believed that the creativity and development inherent in psychological processes are based on their occurring in living systems. He claimed that "life is teleology par excellence, it is the intrinsic striving towards a goal, and the living organism is a system of directed aims which seek to fulfill themselves" (Jung, 1934d, p. 406). He wrote that "as a living being", man is only half understood by the causal method, "for life does not have only a yesterday, nor is it explained by reducing today to yesterday. Life has also a tomorrow, and today is understood only when we can add to our knowledge of what was yesterday the beginnings of tomorrow" (Jung, 1943a, p. 56).

Jung's constructive approach bears many formal similarities to the methods

developed by contemporary structuralists and systems theorists. Piaget's notion of equilibration and the ideas of functional analysis and feedback in systems theory also offer a conceptual alternative to reductive causality that looks to future goals as does Jung's method.

Although Jung personally preferred to use the constructive method, he believed that a reductive approach could also be useful. In referring to these methods, he said that "both interpretations can be shown to be correct" (Jung, 1935, p. 9). Also, he claimed "The psyche at any given moment is on the one hand the result and culmination of all that has been and on the other a symbolic expression of all that is to be" (Jung, 1914b, p. 185).

From a superficial consideration, it would appear that these two methods are "contradictory and mutually exclusive" (Jung, 1921, p. 493). This dilemma has already been resolved by Kant, however, who "showed very clearly that the mechanistic and the teleological viewpoints are not constituent (objective) principles — as it were, qualities of the object — but that they are purely regulative (subjective) principles of thought, and as such, not mutually inconsistent" (Jung, 1917, p. 296). In addition, he said "Our points of view remain without contradiction only when they are restricted to the sphere of the psychological and are projected merely as hypotheses into the objective behavior of things" (Jung, 1928, p. 5).

With regard to which of these points of view to utilize, Jung argued that "the predominance of one or the other point of view depends less upon the objective behaviour of things than upon the psychological attitude of the investigator and thinker" (Jung, 1928, p. 5). In fact, Jung believed that other "equally 'true' explanations of the psychic process can still be put forward" (Jung, 1921, p. 493) because "in the case of psychological theories the necessity of a plurality of explanations is given from the start, since, in contrast to any other scientific

theory, the object of psychological explanation is consubstantial with the subject: one psychological process has to explain another" (Jung, 1921, p. 494).

Thus, Jung theoretically arrived at some of the same arguments as those of the phenomenologists and systems theorists discussed in the fifth section of Chapter 1. He demonstrated both that there is an alternative to the reductive, causal approach and that neither method is identical with the "objective" nature of things since each is only a hypothesis. With regard to criteria for selecting a method to use, however, Jung did not focus on the unique qualities of the subject matter as grounds for preferring the constructive approach, as did the phenomenologists. He did cite some of these unique characteristics as the basis for even developing a constructive approach, but hesitated to contend further that his approach was indeed more appropriate than a reductive one for the complex phenomena he studied. Instead, he attributed the choice of viewpoint to the psychological type of the theorist and not to the "objective behaviour of things".

It is felt by this writer that while one's own psychological preferences do influence one's theoretical approach to psychology, the main determinant of one's method should be its ability to capture the relevant subject matter for a designated purpose. Further, this writer believes that for describing and understanding such uniquely human phenomena as creativity, meaning and purpose, a constructive approach is more effective than a reductive one. Since Jung devoted his attention nearly exclusively to the constructive method in an effort to develop a general psychology, his failure to justify this one-sided focus by anything more than his own "psychological type" may be due to his pioneering status in combination with a deference to former colleagues such as Freud and Adler, who continued to work for the most part reductively.

Jung was also very concerned with justifying his constructive method as scientific. He anticipated three basic criticisms in this regard, and began to set

forth his response to the first two in his early paper, "On Psychological Under standing" (1914b). First, the reductive method has traditionally claimed to be objective and hence scientific, while the constructive method is subjective and thus, presumably unscientific. Jung replied that in reality, all understanding is a subjective process really, and "we speak of 'objective' understanding when we have given a causal explanation" (Jung, 1914b, p. 182). In addition, he argued that "One can judge the subjective mental process from the outside as one can judge everything else. But such a judgment is inadequate, because it is of the nature of the subjective that it cannot be judged objectively ... . The subjective can only be understood and judged subjectively, that is, constructively" (Jung, 1914b, p. 187).

Thus, Jung has distinguished two senses of the concept "objective". If one claims that causal explanations are "objective" in the sense of "identical with external reality", Jung would retort that all explanations are only hypotheses and not identical with the phenomena they explain. On the other hand, if by "objective" one means a causal, external viewpoint on a finished product, he would answer that psychology must somehow then include the "subjective" in order to encompass the entire range of psychic phenomena. If one uses the term "objective" in a third way, as the attitude taken towards a phenomenon, whether it be viewed externally as a completed "thing" or from inside as an unfulfilled project (as discussed in the fourth section of Chapter 1), Jung's constructive method does qualify as scientific despite its differences from the more traditional causal approach.

A second criticism which could be levelled against the constructive method is that is is speculative, since one is dealing with future goals and meanings which have either not yet occurred or been fully understood. Jung admitted that the constructive standpoint "is necessarily a speculative one" but said that it "differs from scholastic speculation in that it never asserts that something has universal

validity, but merely subjective validity" (Jung, 1914b, p. 185). By this, Jung meant that metaphysical speculation claims to be describing the actual nature of external reality, while the speculation of his method advances hypotheses which do not pretend to be an "ultimate answer".

In applying his method, Jung adopted a different stance toward the psychological phenomenon than is traditional in the natural sciences. He stated that "what to the causal view is fact to the final view is symbol" (Jung, 1928, p. 24), by which he meant "the best possible expression for a complex fact not yet clearly apprehended by consciousness" (Jung, 1916c, p. 75). Jung came to realize that such symbolic expressions "mean next to nothing if simply broken down, but display a wealth of meaning if, instead of being broken down, that meaning is reinforced and extended by all the conscious means at our disposal" (Jung, 1943a, p. 91). The constructive method "makes use of comparative material", such as parallels from philosophy, mythology and the history of religion, and also the individual's own associations, which together so enrich "the symbolic product (e.g. a dream) that it eventually attains a degree of clarity sufficient for conscious comprehension" (Jung, 1921, pp. 423-424) and becomes "a universal and intelligible statement" (Jung, 1943a, p. 91).

The speculation of the constructive method is scientific in the sense that it "also analyses, but it does not reduce. It breaks the system down into typical components" (Jung, 1914b, p. 187). This is done by means of a "comparative analysis" of many individual symbolic productions, which "serves only to widen the basis on which the construction is to rest. At the same time, it serves the purpose of objective communication" (Jung, 1914b, p. 187). Thus, a classification into types, which is essentially descriptive, enables the constructive method to transcend mere speculation about an individual's aims or meaning both by elaborating added levels of meaning and by providing a vocabulary with which to categorize

and communicate one's ideas to others, a prerequisite for scientific work. Such classification also opens up the possibility for hypothesis testing and empirical verification, although Jung did not pursue this issue. There will be further discussion of Jung's concept of types in Chapter 4.

With regard to a third possible criticism, Jung denied that his constructive view treated symbolic expressions as "'teleological' in the philosophic sence of the word — that is, of having a final end, still less of projecting a goal" (Jung, 1916b, p. 324n). He went on to clarify that the meaning which is constructed is not meant "in the sense of an end given a priori, [which] pre-existed in the preparatory stages of the phenomenon we are discussing" (Jung, 1916b, p. 324n).

In itself, this is a relatively straightforward statement denying the possibility that a goal can "cause" its own realization. Jung suggested that the situation is more complex when he added that "all one can say is that things happen as if there were a fixed final aim" (Jung, 1916b, p. 324n). Many years later, he made an even more puzzling declaration in referring to a symbolic expression. He stated that "from a superficial point of view it looks as if it had gradually come into being in the course of the dream series. The fact is, however, that it only appeared more and more distinctly and in increasingly differentiated form; in reality it was always present ... . It is therefore more probable that we are dealing with an a priori 'type'" (Jung, 1944b, p. 211).

This last statement is very suggestive of the philosophical teleology that Jung wished to avoid. The nature of the phenomena he observed, however, was instrumental in his developing such an explanation. The essential issue is, "To what extent, and in what manner, do the goal and meaning of human processes exist before they are accomplished or understood?" Jung elaborated his ideas about archetypes partly as a response to this question, which will be treated in depth in Chapter 4. It will be found that his conceptual difficulty in framing an

answer led him to resort to a teleology and reification for which he is often criticized. Before delving further into this issue, however, it will be necessary to understand clearly what Jung meant by the concept of "unconscious", which will be the subject matter of the following chapter.

Chapter 3: The Unconscious

Jung's constructive method is essentially a developmental approach to psychological phenomena. Before exploring its application in conceptualizing the developmental process Jung called "individuation", it is necessary to examine the major structural components of his model: "the unconscious", archetypes and symbols. These concepts will be the subject matter of the next two chapters.

The very fact that the meaning and/or purpose of many human actions are not fully known or understood at the time of their performance suggests that there is more to human mental processes than a consciousness completely transparent to itself. Jung, however, did not arrive at his conception of an "unconscious" psyche directly from such abstract reasoning, but through his clinical experiences with phenomena on the fringes of conscious comprehension and control.

In this chapter, the phenomena leading Jung to postulate both a "personal" and a "collective" unconscious will be presented. Next, the concept of the unconscious will be situated in its context between consciousness and physiology in an effort to define its boundaries. Finally, there will be a critical discussion of the evolution and nature of Jung's idea of the unconscious, including the processes to which the term refers as well as the adequacy and scientific value of the theoretical framework erected to conceptualize these processes.

The Phenomena to Be Explained

From the start of his career, Jung was fascinated with psychic phenomena which were difficult to explain if one restricted the psyche to conscious mental processes. Among these phenomena, some of the most striking were those in which a person performed an action without even being aware that he did so.

Jung's very first publication, "On the Psychology of So-Called Occult Phenomena" (1902), was a study on "somnambulism" for his medical degree. Somnambulists often have "attacks" during which they display a markedly different personality from their usual one. In many cases, "the second state is separated from the first by an amnesic split, and the change in character is accompanied by a break in the continuity of consciousness" (Jung, 1902, p. 63). Jung also noted Janet's work on hypnosis, where a person could carry out a hypnotic suggestion without any awareness of his actions.

A related class of problematic phenomena, although not so remarkable as those associated with somnambulism and hypnotism, includes sudden changes, generally emotional, of the conscious state for reasons unknown to the person involved. They may "take the form of fluctuations in the general feeling of well-being, irrational changes of mood, unpredictable affects" (Jung, 1934a, p. 139), "ecstatic states" (Jung, 1938, p. 34), "sudden impulses, ... inspirations" (Jung, 1907, p. 29) and "fears" (Jung, 1940b, p. 178).

A third group of phenomena comprises actions whose performance is conscious, but whose meaning or origin is unclear. Jung declared that "even the adult still says and does things whose significance he realizes only later, if ever .... We have intimations and intuitions from unknown sources" (Jung, 1940b, p. 178). There may be "odd and incomprehensible thoughts" (Jung, 1914a, p. 208), actions and opinions. More dramatic instances of these phenomena may occur as some of the manifestations of somnambulism and hypnotism. Cryptomnesia, the "coming into consciousness of a memory-image which is not recognized as such in the first instance, but only secondarily, if at all, by means of subsequent recollection or abstract reasoning" (Jung, 1902, p. 81), may be manifested through glossolalia and motor automatisms. Similarly, hypnotic phenomena such as automatic movements and writing may be conscious acts and yet express a meaning of which the

individual is unaware.

A fourth category of events are those whose complexity obviously required much preparation yet which lacked the individual's conscious participation. In speaking of this class of effects without conscious origin, Jung asserted "the psychoanalytic school believes it has discovered such effects. I will mention the principal phenomenon at once: the dream" (Jung, 1912b, p. 143). There must be a "not inconsiderable labour of composition that goes into a dream" (Jung, 1931h, p. 143), but "Dreams contain images and thought associations which we do not create with conscious intent. They arise spontaneously without our assistance and are representatives of a psychic activity withdrawn from our arbitrary will" (Jung, 1934b, p. 140). In fact, the dream is "compounded of elements whose connection with each other is not conscious" (Jung, 1912b, p. 143). Besides dreams, another example of this kind of event are cases "in which a complicated system of delusions breaks out with comparative suddenness" where "we can hardly suppose that such things come into being just as suddenly as they enter consciousness" (Jung, 1912b, p. 114).

A final set of phenomena, with which Jung was particularly familiar, consisted of "abnormal psychic processes" and "the findings of psychopathology" (Jung, 1918, p. 4). Included in this category are both disorders of normal psychic functioning and the development of psychological symptoms.

With regard to the former, Jung referred to "psychogenic disturbances" of the conscious, normal functions, which "do not confine themselves to purely psychological processes but extend also to physiological ones" (Jung, 1918, p. 5). In the latter case, "it is never the elementary components of the function that are disturbed, but only the voluntary application of the function under various complex conditions" (Jung, 1918, p. 5). As for psychological disorders, Jung mentioned disturbances of attention, as in misreading (Jung, 1902) and slips of the

tongue (Jung, 1912b), the "stoppage and disappearance of thought" (Jung, 1907, p. 29), and memory difficulties, including lapse of memory (Jung, 1912b) and actual breaks in the "continuity of consciousness" such as amnestic attacks (Jung, 1902, p. 63). He observed similar phenomena during his word association experiments, where reactions would be "delayed, altered, suppressed or replaced" (Jung, 1940a, p. 13) and the subject would show "inhibitions, failures to react, slips of the tongue, subsequent forgetting of the answers, etc." (Jung, 1958a, p. 398n).

With regard to symptoms, Jung included "almost the whole symptomatology of hysteria, of the compulsion neuroses, of phobias, and very largely of schizophrenia" (Jung, 1931h, p. 143). He also listed hallucinations and visions (Jung, 1902), delusions (Jung, 1914a), "obsessive sequences of strange ideas" (Jung, 1907, p. 29), anxiety states and depression (Jung, 1918) and dual and multiple personalities (Jung, 1939a).

The Personal Unconscious and the Collective Unconscious

For Jung, the phenomena described above could only be accounted for by postulating the existence of mental processes outside of conscious awareness: the "unconscious". His thoughts on this subject underwent considerable development, especially early in his career when he broke with Freud, and will be discussed in detail for the remainder of this chapter.

The Personal Unconscious

For approximately the first ten years of his career, Jung used the term "unconscious" in the sense meant by Freud. In looking back at this period, Jung said that "the unconscious was understood personalistically at first —that is to say, its contents were thought to come exclusively from the sphere of ego-consciousness and to have become unconscious only secondarily, through repression" (Jung, 1945b, p. 90). These contents are "reducible to infantile

tendencies and desires" (Jung, 1916b, p. 277) and are kept out of awareness by repression, a "process, whereby an inadmissable wish becomes unconscious" (Jung, 1918, p. 5).

Thus, during this early period the focus was on the motivated forgetting of incompatible tendencies which otherwise could have been conscious. The protective effort of repression against becoming conscious of incompatible desires, combined with an incomplete effectiveness of this repression in totally suppressing all manifestations of these desires, could account for the problematic phenomena described in the previous section. Jung's own contribution to this aspect of unconscious processes was his work on the nature of some of the repressed contents, which he called "feeling-toned complexes". He defined a "complex" as "the image of a certain psychic situation which is strongly accentuated emotionally and is, moreover, incompatible with the habitual attitude of consciousness" (Jung, 1934c, p. 96).

Jung's break with Freud first became obvious with the publication of Transformations and Symbols of the Libido in 1912 (completely revised and rewritten in 1952 as Symbols of Transformation). From then until Psychological Types appeared in 1921, he engaged in clarifying his disagreements with Freud's ideas and establishing his own notions on a firm basis. He published two key theoretical papers on the unconscious during this period, "The Structure of the Unconscious" (1916b) and "The Role of the Unconscious" (1918).

He stated in the former paper that "the principle of repession does not suffice" in explaining the nature of unconscious processes (Jung, 1916b, p. 278), but "we must say that the unconscious contains everything psychic that has not reached the threshold of consciousness, or whose energy-charge is not sufficient to maintain it in consciousness, or that will reach consciousness only in the future" (Jung, 1918, CW10, p. 8). This includes "everything that we have

forgotten" as well as subliminal perceptions, which "may be sense perceptions occurring below the stimulus-threshold of conscious hearing, or in the peripheral field of vision" (Jung, 1918, pp. 8-9). In addition, there is "all the material which has not yet reached the threshold of consciousness" (Jung, 1916b, p. 278). He felt that "it is probable that all these contents are of a personal nature, inasmuch as they are acquisitions of the individual's life," and so he called these processes together the "personal unconscious" (Jung, 1916b, p. 278).

The central thrust of Jung's development of his conception of the unconscious as opposed to Freud's paralleled that of his notion of psychic energy discussed in Chapter 2. In both cases, Jung expanded a limited concept (libido as sexuality and the unconscious as "the repressed") to a more general one. In the case of the unconscious, Jung became concerned with unconscious aspects of all spheres of behavior, not just the conflictual or psychopathological. Ironically, it was his observations of the most severe psychopathology that led him to develop the idea of the unconscious still further and to postulate universal, non-conscious mental processes common to all men: the collective unconscious.

The Collective Unconscious

The initial impetus for Jung's postulating a "collective" as opposed to a "personal" unconscious came from his clinical work with psychotic patients. He declared in 1918 that for an insane person, "there are certain fantasies whose roots in the individual's previous history one would seek in vain" (p. 9). He also stated that "insane people frequently produce combinations of ideas and symbols that could never be accounted for by experiences in their individual lives" (Jung, 1948f, p. 311).

Thus, in taking a purely personal approach to these fantasies, Jung was stymied in his attempt to comprehend their meaning. The particular nature of these symbolic expressions, however, suggested a direction he might take in his

quest for understanding. Although they "cannot be reduced to experiences in the individual's past, and thus cannot be explained as something individually acquired," they "undoubtedly have their closest analogues in mythological types" (Jung, 1940b, p. 155). He noted that "we discover that insane people develop fantasies that can be found in almost identical form among primitives" (Jung, 1931a, p. 372).

With regard to "normal" people, too, Jung found that some pictures they produced exhibited "a primitive symbolism which is conspicuous both in the drawing and in the colouring. The colours are as a rule quite barbaric in their intensity. Often an unmistakable archaic quality is present" (Jung, 1929a, p. 50). Dreams, too, often manifested this quality, as "in the dream, as in the products of psychoses, there are numberless interconnections to which one can find parallels only in mythological associations of ideas" (Jung, 1940b, p. 152).

Thus, the nature of the phenomena he observed forced Jung to conclude he was not dealing with <u>personal</u> contents, but <u>collective</u> ones deriving from man's social nature. While he could demonstrate the <u>similarity</u> between individual symbolic expressions and myths, he still needed to account for the <u>existence</u> of this similarity.

In his investigation of this problem, Jung found that there were also analogies "in the most remotely separated races and peoples, an analogy manifested by the fact ... of an extraordinary correspondence between the themes and forms of autochthonous myths" (Jung, 1916b, p. 283). There is an "analogy, sometimes even identity, between the various myth motifs and symbols" (Jung, 1938, pp. 11-12).

Jung felt that these remarkable similarities suggested the existence of <u>collective</u> unconscious mental processes common to <u>all</u> men, in any place or time, which would account for the observed similarities. In order to strengthen this

hypothesis, however, he proposed that in addition to adducing mythological parallels to a given symbolic expression, two other conditions needed to be met. First, "in order to draw a valid parallel, it is necessary to know the functional meaning of the individual symbol, and then to find out whether the apparently parallel mythological symbol has a similar context and therefore the same functional meaning" (Jung, 1936a, p. 50). Thus, "the identity of unconscious individual contents with their ethnic parallels is expressed not merely in their form but in their meaning" (Jung, 1950a, p. 384).

A second condition to support the hypothesis of a collective unconscious mental functioning is to demonstrate that these motifs and images were not the result of direct transmission, either by historical tradition or migration (Jung, 1921). Other means of transmission, such as language, education or cryptomnesia, where the individual might have "read, seen or heard the motif somewhere, and then forgotten it and remembered it unconsciously" (Jung, 1931h, p. 148) must also be ruled out.

For Jung, the decisive evidence would be the "autochthonous reproduction of such [primordial] ideas in the psyche of individuals where direct transmission is out of the question. The empirical material found in such cases consists of dreams, fantasies, delusions, etc." (Jung, 1945b, p. 91). In fact, Jung claimed that often in his own research, "typical mythologems were observed among individuals to whom all knowledge of this kind was absolutely out of the question, and where indirect derivation from religious ideas that might have been known to them, or from popular figures of speech, was impossible" (Jung, 1940b, p. 152). He cited two specific examples of such an occurrence. The first was his observation of "an insane patient who produced, almost word for word, a long symbolic passage which can be read in a papyrus published by Dieterich a few years later" (Jung, 1929d, p. 111). Also, in investigating "the dreams of purebred Negroes living in the

southern United States," he found "motifs from Greek mythology" (Jung, 1929d, p. 111).

Given the evidence Jung believed he had accumulated, he said "we are driven to the conclusion that there must be a transconscious disposition in every individual which is able to produce the same or very similar symbols at all times and in all places" (Jung, 1950a, p. 384). This means that "'myth-forming' structural elements must be present in the unconscious psyche" (Jung, 1940b, p. 152). As a result:

> the rationally explicable unconscious, which consists of material that has been made unconscious artificially, as it were, is only a toplayer, and that underneath is an absolute unconscious which has nothing to do with our personal experience. This absolute unconscious would then be a psychic activity which goes on independently of the conscious mind and is not dependent even on the upper layers of the unconscious, untouched — and perhaps untouchable — by personal experience. It would be a kind of supra-individual psychic activity, a collective unconscious, as I have called it, as distinct from a superficial, relative, or personal unconscious (Jung, 1931h, p. 148).

Thus, Jung postulated a "collective unconscious" mental functioning to account for the observed parallels among symbolic expressions independent of time or place. He identified several qualities attributable to the concept of the collective unconscious. First of all, he stressed its universality. He stated that "in contrast to the personal psyche, it has contents and modes of behaviour that are more or less the same everywhere and in all individuals. It is, in other words, identical in all men and thus constitutes a common psychic substrate of a suprapersonal nature which is present in every one of us" (Jung, 1954a, pp. 3-4). It is "timeless and universal" (Jung, 1931h, p. 152) and a "homogeneous substratum whose uniformity is such that one finds the same myth and fairytale motifs in all corners of the earth" (Jung, 1921, p. 491).

A second characteristic of the collective unconscious is its impersonal nature. He described it as "transpersonal or impersonal" (Jung, 1916b, p. 283) and

referred to it as "sheer objectivity" (Jung, 1954a, p. 22) which operates "independently of the conscious mind" (Jung, 1931h, p. 148).

Up to this point, Jung had only constructed a general concept to account for similar symbolic expressions. In his theorizing, however, he went beyond this issue and generalized his ideas about a collective unconscious. In essence, not only did he feel this notion explained parallel symbolism, but he believed that the processes which produced these symbols are the foundation of the entire mind. Since this unconscious mental functioning is universally found and continues to operate even when conscious mental processes are impaired, Jung concluded that it is a more fundamental aspect of the psyche.

Jung argued that the collective unconscious is the most basic part of the psyche in two senses. First of all, the unconscious historically exists prior to consciousness. He said it "has an a priori structure of its own that antedates all conscious experience" (Jung, 1954f, p. 101), including a "ready-made system of adapted psychic functioning" (Jung, 1931c, p. 349). While it is "firmly established" at birth, consciousness must be "ontogenetically acquired and developed" (Jung, 1916b, p. 283). In fact, unconscious psychic processes "antedate, accompany, and outlive consciousness" (Jung, 1929d, p. 110).

In addition to historically preceding consciousness, Jung claimed the unconscious continues to be the most basic psychic system. It is the "prior condition" of experience (Jung, 1943a, p. 105), a "basic substrate" of the psyche (Jung, 1929d, p. 110) and the "matrix of consciousness" (Jung, 1950d, p. 97). Jung buttressed his argument by citing several empirical discoveries:

> above all the fact that in every child consciousness grows out of the unconscious in the course of a few years, also that consciousness is always only a temporary state based on an optimum physiological performance and therefore regularly interrupted by phases of unconsciousness (sleep), and finally that the unconscious psyche not only possesses the longer lease of life but is continuously present. From this arises the important conclusion that the real and authentic psyche is the unconscious, whereas the ego-

consciousness can be regarded only as a temporary epiphenomenon" (Jung, 1945b, p. 91).

In further describing the collective unconscious as the foundation of consciousness, Jung referred to it as a dispositional system which establishes the potentials and limits of conscious functioning. It is "the inherited possibility of psychic functioning in general" (Jung, 1921, p. 485) and "a living system of reactions and aptitudes that determine the individual's life in invisible ways" (Jung, 1931h, p. 157). It manifests itself as "latent predispositions towards identical reactions" (Jung, 1938, p. 11).

Jung attempted to demonstrate the plausibility of the idea of a collective unconscious as the basis of the mind by drawing analogies to biological evolution. He stated that "every man is born with a brain that is profoundly differentiated, and this make him capable of very various mental functions, which are neither ontogenetically developed nor acquired. But, in so far as human brains are uniformly differentiated, the mental functioning rendered possible at this level of differentiation is collective or universal" (Jung, 1916b, p. 283). Even the brain of a new-born "functions in a quite definite way" (Jung, 1948f, p. 310), and it is "the result of development in an endlessly long chain of ancestors. This brain is produced in each embryo in all its differentiated perfection, and when it starts functioning it will unfailingly produce the same results that have been produced innumerable times before in the ancestral line" (Jung, 1931a, p. 371). He pointed out that "just as the human body shows a common anatomy over and above all racial differences, so, too, the human psyche possesses a common substratum transcending all differences in culture and consciousness .... The collective unconscious is simply the psychic expression of the identity of brain structure irrespective of all racial differences" (Jung, 1938, p. 11). Thus, the child is born with a "preformed psyche" which enables him to "react in a human manner" (Jung, 1954f, p. 78).

The central thrust of this argument by analogy is that since the mind depends on the brain, if there are similar brain structures, we should assume similar mental structures. Jung further speculated about the relationship of mind and brain, saying that the psychic process is "inherited with the brain structure" and that "the nervous system, and particularly its centres, condition and express the psychic function" (Jung, 1929d, p. 110).

Jung made it clear in these quotations that mind and brain, although related to one another, are still different orders of phenomena. At other times, however, he was more ambiguous about this relationship, stating that the collective unconscious is "embedded" (Jung, 1931a, p. 376), "buried" (Jung, 1918, p. 10) and "inherited" (Jung, 1922, p. 80) in the anatomical structure of the brain. He even went so far as to say that unconscious images are "present in the germ-plasm" (Jung, 1954f, p. 78) and equated "the inherited possibility of psychic functioning in general" with "the inherited structure of the brain" (Jung, 1921, p. 485).

Given Jung's numerous declarations about the relative autonomy of psychology as a discipline, it is likely that the notion of the unconscious psyche's dependence on, rather than identity with, the brain reflected his true feelings on this issue. His lapses into equating mind and brain probably resulted from a desire to avoid a "mystical" doctrine of some sort of disembodied inheritance,in combination with the lack of a well-thought-out psychological explanation of the hereditary transmission of psychic functioning. While understandable, his inconsistencies on this issue are confusing and weaken the scientific value of his theorizing.

Besides the universality both of the human physical and psychological structures, Jung also argued by analogy about their evolutionary development. He said that "in view of the structure of the body, it would be astonishing if the

psyche were the only biological phenomenon not to show clear traces of its evolutionary history" (Jung, 1954c, p. 200). In fact, he believed the collective unconscious "contains the whole spiritual heritage of mankind's evolution" (Jung, 1931h, p. 158). It is an "a priori datum" which represents "the entire psychic structure developed ... by his ancestors in the course of the ages" (Jung, 1939a, pp. 279-280). It "contains all the patterns of life and behaviour inherited from his ancestors" (Jung, 1931c, p. 349). The collective unconscious is "the echo of prehistoric happenings" (Jung, 1931a, p. 376) and "the condensation of millions of years of human experience" (Jung, 1931a, p. 380).

Given this hypothetical evolutionary base, Jung further claimed that the collective unconscious "contains remnants of the functional possibilities of all preceding epochs of evolution" (Jung, 1943a, p. 95) and "remnants of the undifferentiated archaic psyche" (Jung, 1952c, p. 176). He argued that "just as our bodies still retain vestiges of obsolete functions and conditions in many of those organs, so our minds, which have apparently outgrown those archaic impulses, still bear the marks of the evolutionary stages we have traversed" (Jung, 1952c, p. 28). The contents of the collective unconscious "are not only the residues of archaic, specifically human modes of functioning, but also the residues of functions from man's animal ancestry, whose duration in time was infinitely greater than the relatively brief epoch of specifically human existence" (Jung, 1943a, p. 109). Indeed, referring to the collective unconscious, Jung declared that "in its development and structure, it still preserves elements that connect it with the invertebrates and ultimately with the protozoa. Theoretically, it should be possible to 'peel' the collective unconscious, layer by layer, until we come to the psychology of the worm, and even of the amoeba" (Jung, 1931h, p. 152).

Jung also addressed the question of the origin of the specific character of collective unconscious contents. He said it is "the condensation of the average

run of historical experience" (Jung, 1952c, p. 49) in the form of "engrams (imprints) which from time immemorial have determined the psychic structure as it now exists. These engrams are nothing other than function-traces that typify, on average, the most frequently and intensively used functions of the human psyche" (Jung, 1921, p. 169). This imprinting process, according to Jung, occurs by "a sort of psychic parallel to regular physical occurrences" (Jung, 1931h, p. 153). It is not the actual physical events, however, "that remain as images in the psyche, but the fantasies caused by the affects they arouse" (Jung, 1931h, pp. 154-155).

Although from a superficial consideration there would appear to be a wide gulf between the original purpose of the collective unconscious as the source of similar symbolic expressions and its expanded theoretical role as the foundation of the psyche, Jung bridged the gap by equating the potential production of symbols with the basic activity of the mind. For Jung, symbol formation is the basis of conscious mental functioning.

According to this conception, the structure of the collective unconscious determines the possibilities of conscious ideation, or as Jung said, it consists of "a priori categories of possible functioning" (Jung, 1929f, p. 34). It "exerts an influence that compromises the freedom of consciousness in the highest degree" (Jung, 1929d, p. 112), while "even the boldest fantasies have their limits determined by our psychic inheritance" (Jung, 1931a, p. 372).

Jung also described the nature of this unconscious structure which shapes conscious thought. It includes "instincts as impulses to carry out actions from necessity, without conscious motivation. In this 'deeper' stratum we also find the a priori, inborn forms of 'intuition', namely the archetypes of perception and apprehension, which are the necessary a priori determinants of all psychic processes. Just as his instincts compel man to a specifically human mode of

existence, so the archetypes force his ways of perception and apprehension into specifically human patterns" (Jung, 1919, p. 133). He further stated that "all conscious ideation and action have developed on the basis of these unconscious archetypal patterns and always remain dependent on them" (Jung, 1938, p. 12).

These "contents" of the collective unconscious, instincts and archetypes, will be treated in depth in the following chapter. In this chapter, the discussion will be confined to the more abstract question of unconscious processes in general. To summarize the reasoning about the collective unconscious to this point, the discovery of the universality of parallel symbolic expressions led Jung to postulate that they are based on innate unconscious psychic processes common to all men. He further argued that these unconscious processes are the foundation of the psyche, reflecting the evolutionary development of the mind through millions of years of human experience. They also possess a structure which determines the form of conscious thought.

Evaluated critically, there are several aspects of Jung's theorizing that require attention. First of all, the hypothesis of the innateness of the collective unconscious is scientific in the sense that it is falsifiable by empirical evidence. Jung elaborated the way this could be done: if direct (or indirect) transmission could always be demonstrated, his hypothesis would be disproved. Second, the hypothesis of universality is also scientific, as it, too, is empirically falsifiable. If symbolic expressions were somewhere discovered which bore no resemblance to other known expressions, the collective nature of the unconscious would be called into question. Of course, clear criteria would need to be established as to what constituted "resemblance". This issue is especially relevant with regard to archetypes and will be discussed again below. Two other hypotheses, that these processes are "unconscious" and that they are the foundation of the psyche, merit further exploration, and much of the remainder of the chapter will be devoted to

a more in-depth analysis of the meaning of the concept of the "unconscious", which is a prerequisite for an adequate assessment of these hypotheses.

Although Jung's ideas on the evolutionary development of the mind are highly speculative, the notion that the contents of the collective unconscious reflect earlier stages of psychic development is testible to a limited extent, and hence scientific. It is possible to compare unconscious products with what is known of the culture of primitive human civilizations. Since Jung did not specify what he meant by the "psychology" of non-human organisms, it is difficult to ascertain whether his idea that the history of the mind extends to man's animal and even invertebrate ancestors would be scientific or is merely speculative. Without Jung's having given any guidelines for how his account of the origin of the collective unconscious could be falsified, these ideas must be regarded as speculative and not scientific. A final hypothesis, the idea that unconscious structures determine the form of conscious thought, will be considered in the next chapter on archetypes.

The Unconscious: Theoretical Concept and Actual Process

As Jung used it, "the unconscious" is a concept which refers to a process. As a concept, it possesses its own qualities, which may be different from those of the phenomena it attempts to describe and explain. It is imperative to make this distinction because whatever concept is selected to talk about a phenomenon, the facts themselves remain unaltered. The concept then must be evaluated as to how well it accounts for the relevant phenomena, in addition to how well it can be integrated with other related concepts. In this section, an effort will be made to distinguish between the unconscious as a concept and as the process referred to, in Jung's writings.

The Psychological and Physiological Context of the Unconscious

Before describing the characteristics Jung attributed to the unconscious itself, it is important to situate it in its own immediate context. It is essentially a borderline concept, which Jung understood as "the psychic phenomenon that mediates between consciousness and the physiological functions of the body" (Jung, 1944b, p. 268). Thus, the domain of the unconscious is bounded on one side by conscious mental functioning and on the other by physiological processes.

For Jung, consciousness can be understood as "a state of association with the ego" (Jung, 1926, p. 323). The ego, in turn is "the complex factor to which all conscious contents are related. It forms, as it were, the centre of the field of consciousness; and, insofar as this comprises the empirical personality, the ego is the subject of all personal acts of consciousness. The relation of a psychic content to the ego forms the criterion of its consciousness, for no content can be conscious unless it is represented to a subject" (Jung, 1951a, p. 3).

Since Jung had presented evidence to show that "consciousness is very far from covering the psyche in its totality" (Jung, 1939a, p. 276), it was just one more step to callling all other psychic processes un-conscious. In his formal definition of the unconscious, he said it "covers all psychic contents or processes that are not conscious, i.e., not related to the ego (q.v.) in any perceptible way" (Jung, 1921, p. 483).

While there are many situations where it is simple to decide if a process is conscious or unconscious, the border between the two is far from clear. Even in his earliest work, Jung conceded that it is often difficult to differentiate between conscious and unconscious psychic manifestations, and "the only criterion of distinction is then simply 'more' or 'less'" (Jung, 1902, p. 14). He also noted "how relative the unconscious state is" (Jung, 1954c, p. 187).

Thus, from this standpoint, the difference between a conscious and unconscious content is essentially quantitative in nature. Jung's theorizing on this issue utilized the notion of a "threshold" (Jung, 1954c, p. 171) between conscious and unconscious, which can be crossed by contents with sufficient "energy". Psychic elements remain unconscious "because of their low energy charge" (Jung, 1921, p. 484). From the side of the unconscious, "an unconscious element at once ceases to be subliminal as soon as it acquires a stronger accent of value; it then rises above the threshold of consciousness, and it can do this only by virtue of the energy accruing to it" (Jung, 1921, p. 112). Conversely, "conscious contents can become unconscious through loss of their energic value" by such processes as forgetting and repression (Jung, 1921, p. 484).

A model of "psychic energy" falls prey to all the dangers mentioned in the discussion of this issue in the previous chapter. Jung fared better in his consideration of qualitative differences between conscious and unconscious processes. He concluded that consciousness is extremely relative, "since its contents are conscious and unconscious at the same time, i.e., conscious under one aspect and unconscious under another" (Jung, 1954c, p. 200). While this formulation does not explain how some aspects of events are conscious and others unconscious, it is an accurate description which could become a foundation for an explanatory theory.

In a late theoretical paper, Jung discussed another difficulty in making a clear differentiation between conscious and unconscious, his discovery of "processes with regard to which no relation to the conscious ego can be demonstrated and which yet seem to be 'represented' or 'quasi-conscious'" (Jung, 1954c, p. 188). These "highly complex" processes compelled Jung to postulate "something midway between the conscious and unconscious state, namely an approximative consciousness" (Jung, 1954c, p. 189).

He supported this contention with several analogies. First, in "primitive" humans, consciousness does not exhibit such a strong ego. Also, "when we observe the psychic processes in the higher vertebrates and particularly in domestic animals, we find phenomena resembling consciousness which nevertheless do not allow us to conjecture the existence of an ego" (Jung, 1954c, p. 189). Finally, he argued that "the light of consciousness has many degrees of brightness" (Jung, 1954c, p. 189).

His conclusion was that early in development, "consciousness is not a unity, being as yet uncentred by a firmly-knit ego-complex, and just flickering into life here and there wherever outer or inner events, instincts, and affects happen to call it awake" (Jung, 1954c, p. 189). Even for modern, adult man, "we would do well to think of ego-consciousness as being surrounded by a multitude of little luminosities" (Jung, 1954c, p. 190).

Thus, in a similar fashion to his evolutionary arguments regarding the collective unconscious, Jung asserted that consciousness, too, still shows traces of its developmental history. This borderline area necessitates a slight modification of his principle of equating "consciousness" with "association with the ego". Further discussion of these "quasi-conscious" processes will be deferred to a later point in this chapter.

At the "border" with consciousness, unconscious processes can be clearly seen to be psychic in nature. In order to delimit the unconscious in the other direction, however, Jung was forced to confront the question of what he would define as psychic and how one could differentiate it from the physiological.

For the "'personal unconscious', it is fairly easy to prove that its contents correspond exactly to our definition of the psychic" (Jung, 1954c, p. 200). Jung cited both Janet and Freud to "indicate that everything goes on functioning in the unconscious state just as though it were conscious" (Jung, 1954c, p. 186). Some

unconscious contents, however, "do not change in the same way they do in consciousness" but instead "sink back to a more primitive (archaic-mythological) level, to approximate in character to the underlying instinctual pattern, and to assume the qualities which are the hallmark of instinct: automatism, non-susceptibility to influence, all-or-none reaction, and so forth" (Jung, 1954c, pp. 186-187). It is indeed plausible to "assume that the unconscious functions ultimately go over into substratum processes to which no psychic quality can be assigned" (Jung, 1928, p. 16).

Thus, while some non-conscious mental processes can easily be labelled "psychic", the difficulty remains of drawing the line between the psyche proper and phenomena more appropriately characterized as physiological. Jung addressed this issue in two ways: by a definition of "psychic" and by introducing the term "psychoid".

Jung felt that instinctual processes have "an unmistakably physiological aspect" and are "bound up with the hormones" (Jung, 1954c, p. 181). In contrast, the truly psychic "has lost its compulsive character, can be subjected to the will and even applied in a manner contrary to the original instinct" (Jung, 1954c, p. 181). Thus, the psychic is an "emancipation of function from its instinctual form and so from the compulsiveness which, as sole determinant of the function, causes it to harden into a mechanism. The psychic condition or quality begins where the function loses its outer and inner determinism and becomes capable of more extensive and freer application, that is, where it begins to show itself accessible to a will motivated from other sources" (Jung, 1954c, p. 182).

Jung went on to say that "the function can be deflected through the action of the will" and that "'will' implies a certain amount of energy freely disposable by the psyche" (Jung, 1954c, pp. 182-183). Then, "because of its empirical freedom of choice, the will needs a supraordinate authority, something like a consciousness

of itself, in order to modify the function. ... Volition presupposes a choosing subject who envisages different possibilities" (Jung, 1954c, p. 183). Also, "we can hardly conceive of will and freedom of choice without consciousness. This apparently brings us back to where we always stood, to the axiom psyche=consciousness. What, then, has happened to the postulated psychic nature of the unconscious?" (Jung, 1954c, p. 184).

What indeed? Jung believed that declaring the unconscious to be a model rather than a reality and invoking the relative nature of consciousness were sufficient to resolve his theoretical dilemma. These maneuvers do not address the crucial issue, however, but his own ideas suggest a conceptual solution.

While a differentiation between instincts and psychic processes appears eminently sensible, Jung's mistake consisted in then attributing the "more extensive and freer application" of formerly instinctual functions to the activity of a conscious will. By introducing the need for a subject, Jung was compelled either to identify the psyche with consciousness or to postulate an unconscious subject, neither of which is theoretically palatable. There is no necessity, though, for positing a subject to account for the increased flexibility of psychic processes.

In fact, Jung's entire dicussion of the origin of consciousness as disconnected "luminosities" cited above contradicts the need for a subject as a prerequisite for psychic functioning. Instead, one need only rely for explanation on unconscious processes which seem "as if" they were represented and conscious, or what Jung called an "approximative consciousness" (Jung, 1954c, p. 189). Although for some reason Jung himself did not apply these ideas specifically to the question of the definition of the psyche, one could consistently conclude that "the psychic" consists of those processes whose operation is not compulsively automatic and which possess a range of modifiability. When these processes are conscious, they then are amenable to manipulation by a subject, but consciousness

is not necessary for them to display more flexibility than a truly instinctive reaction. Jung's temptation to place a subject in the unconscious will be discussed further at a later point in this chapter.

Although a boundary can be established between psychic and physiological, as between unconscious and conscious, there again remains an indistinct border area where one ends and the other begins. Jung characterized processes at the physiological "end" of the unconscious as "psychoid". In using this term, Jung made clear that: "firstly, I use it as an adjective, not as a noun; secondly, no psychic quality in the proper sense of the word is implied, but only a 'quasi-psychic' one such as the reflex-processes possess; and thirdly, it is meant to distinguish a category of events from merely vitalistic phenomena on the one hand and from specifically psychic processes on the other" (Jung, 1954c, p. 177). Psychoid processes are those "where instinct predominates" and are "elements incapable of consciousness" (Jung, 1954c, pp. 183-184).

Thus, for Jung, the unconscious as a whole is "the unknown psychic" (Jung, 1954c, p. 185). It includes on the one hand "all those things in us which, if they came to consciousness, would presumably differ in no respect from the known psychic contents, with the addition, on the other hand, of the psychoid system, of which nothing is known directly" (Jung, 1954c, p. 185).

The Unconscious as a Concept

Before assessing the value of the unconscious as a scientific concept, it is important to identify the various ways in which Jung employed this term. At least four distinct uses can be identified: to refer to actual psychological processes of which we are unaware, as the foundation of consciousness, as suggestive of possibilities for future development and as contents which are potentially conscious.

The first use, referring to unconscious processes as phenomena in their own

right, will be examined in the final section of this chapter. The second way Jung talked about unconscious processes, as both the historical foundation and continuing basis of the conscious mind, has been discussed in the second section of this chapter with regard to the collective unconscious. At this point, the idea of the unconscious as an ongoing basis of consciousness will be briefly fleshed out.

Jung wrote that the unconscious "is the basis and precondition of all consciousness" (Jung, 1929f, p. 34). It is the "background" and "matrix of all conscious phenomena" (Jung, 1954c, p. 168), which "transcends" consciousness and "surrounds it on all sides" (Jung, 1944b, p. 132) and which consciousness "depends on and is sustained by" (Jung, 1958a, p. 358). More specifically, Jung said that "the ideas and feelings, which make up the conscious mind ... rest upon far simpler and altogether unconscious elements" (Jung, 1914a, p. 203) and that "the content of consciousness, is the outcome of countless non-conscious (or unconscious) psychophysical processes" (Jung, 1907, p. 28). Jung described some of these unconscious processes as "those vague, dim stirrings, feelings, thoughts, and sensations which flow in on us not from any demonstrable continuity of conscious experience of the object, but well up like a disturbing, inhibiting, or at times helpful, influence from the dark inner depths" (Jung, 1921, p. 466).

Jung has assembled numerous factors in support of his proposition that unconscious processes are the foundation of the conscious mind, although he did not collect them together in any one paper. Among these factors are the historical and ontogenetic priority of unconscious processes; the autonomy and continual functioning of these processes; the shaping of conscious thought and symbolism according to unconscious archetypal patterns; the role of unconscious psychophysical processes in conscious perception; and the relativity of consciousness, whereby one can perform actions whose origin and meaning only gradually become conscious. Taken together, these considerations provide strong backing to

the idea of the unconscious as the foundation of consciousness. As such, the unconscious displays many parallels to Polanyi's concepts of tacit knowledge and subsidiary awareness discussed in Chapter 1.

A third way that Jung utilized the notion of the unconscious consisted in his applying the constructive method to the products of unconscious processes. Looked at from this standpoint, unconscious processes supply a potential for conscious development by creating symbols which point forward to as yet undiscovered possibilities. As discussed in the previous chapter, the constructive method is focussed on elaborating aims and goals, which in a way characterizes the unconscious sources of the symbolic material as "potential realities".

Jung's fourth use of the concept of unconscious processes was as another sort of "potential reality". In this usage, the unconscious processes themselves are potentially conscious, rather than providing symbolic expressions which can be interpreted as suggesting a future reality. Jung asserted that "the psychological condition of any unconscious content is one of potential reality" (Jung, 1944b, p. 456) and "everything subliminal holds within it the ever-present possibility of being perceived and represented in consciousnes" (Jung, 1939b, p. 551).

In fact, "there is a constant influx of unconscious contents into the conscious psychological process" (Jung, 1921, p. 341) as the unconscious "creates new contents" (Jung, 1931a, p. 364) and "is the matrix out of which the whole psychic future grows" (Jung, 1931a, p. 367). The unconscious is a "reality in potentia. The thought we shall think, the deed we shall do, even the fate we shall lament tomorrow, all lie unconscious in our today" (Jung, 1939a, p. 279). The unconscious contains "possibilities of future developments" (Jung, 1939a, p. 279) and is the source of "flashes of intelligence" and "inspirations" (Jung, 1931c, p. 347).

Of the four uses of the term "unconscious" outlined above, three are in

themselves extremely intangible: mental processes outside awareness, a tacit foundation of the psyche, and "potential" conscious contents. The fourth use actually refers to the products of unconscious processes, while the processes themselves remain hidden. The elusiveness of these processes raises serious difficulties for a theory aspiring to the scientific values of observability and falsifiability.

Jung was very cognizant of the unique problems inherent in a concept of unconscious mental processes. He stated that "the unconscious is by definition not amenable to direct observation" (Jung, 1946c, p. 170n) and "the unconscious, in fact and by definition, cannot be discriminated as such" (Jung, 1954f, p. 277). In addition, "there is at present no way of objectively determining the real nature of the unconscious" because "the very act of observation alters the object observed", i.e., makes it conscious (Jung, 1955b, p. 81).

Although the unconscious cannot be directly apprehended, it "can be indirectly experienced via its manifestations" (Jung, 1955b, p. 462). One can "perceive effects whose origin cannot be found in consciousness" (Jung, 1912b, p. 140), which may be manifested "partly through symptoms, partly through actions, opinions, affects, fantasies, and dreams" (Jung, 1934b, p. 186). One can then presuppose "that the origin of those effects lies in the unconscious precisely because it is not conscious" (Jung, 1912b, p. 140). Also, "aided by such observational material we can draw indirect conclusions as to the momentary state and constitution of the unconscious processes and their development" (Jung, 1934b, p. 186), and the nature of unconscious processes "can be only imperfectly inferred and realized from the contents that appear in consciousness" (Jung, 1954c, p. 175).

Thus, while direct observation is impossible, unconscious processes are inferred to explain other observations. The fact that they are inferred helps to

determine their theoretical status and the nature of the conclusions which can be drawn regarding the phenomena to which they refer.

With regard to theory, Jung stated clearly that "the concept of the unconscious is for me an exclusively psychological concept, and not a philosophical concept of a metaphysical nature" (Jung, 1921, p. 483). By this, he meant that the unconscious is not an "ens per se" but "a mere term, about whose metaphysical essence we do not permit ourselves to form any idea" (Jung, 1912b, p. 141). He later clarified that it is not a question of "asserting anything, but of constructing a model which opens up a promising and useful field of inquiry" (Jung, 1954c, p. 184).

As for unconscious phenomena themselves, "the actual state an unconscious content is in when not attached to consciousness ... is something that eludes all possibility of cognition" (Jung, 1921, p. 484) and "nothing whatever can be predicated as to its possible contents" (Jung, 1944b, p. 173). The nature of the unconscious "eludes conceptual formulation" (Jung, 1931e, p. 159) and "it is uncommonly difficult for our consciousness to construct intellectual models which would give a graphic description.... Our hypotheses are uncertain and groping, and nothing offers us the assurance that they may ultimately prove correct" (Jung, 1955b, p. 551). We must accept the fact that "we never succeed in getting further than the hypothetical 'as if'" (Jung, 1934b, p. 186).

Assessed by means of the criteria for a scientific theory set forth in Chapter 1, Jung's ideas on the unconscious as presented to this point are fairly systematic, parsimonious and internally consistent. He provided an adequate definition of what he meant by "unconscious", although he did not himself distinguish the four uses of this term identified earlier in this section. The issues of the coherent interrelationships of terms to form a unified theory, the adequacy of his concepts for explaining the phenomena noted in the first section of this

chapter, and the formulation of correspondence rules so that specific propositions could be empirically tested must for the most part remain in abeyance until more details can be given in the next chapter on the basic contents of the unconscious, the archetypes.

As described thus far, Jung has developed in the unconscious a very general concept which is merely hypothetical, since it cannot be directly observed. It is difficult to quarrel with such a model if it can be demonstrated to be useful in explaining observed phenomena and to be empirically falsifiable, questions which will be taken up in the following chapter. Prior to such considerations, however, difficulties can be discovered regarding the consistent use of the concept itself, as Jung frequently did not adhere to the theoretical statements about the unconscious discussed above.

The chief problem evidenced throughout Jung's writing was a reification of "the unconscious" as a psychic entity. In order to remain consistent with his postulation of "unconscious" as a hypothetical term, he could use it in three ways: as an adjective, as in "unconscious processes," as an adverb, as in "he performed the action unconsciously;" and as an abstract noun, denoting the class of all non-conscious psychic processes. None of these uses imputes anything more about the nature of these processes than the fact that they are not conscious, a limit Jung conceded should exist.

It is dangerous, however, to use "unconscious" as an abstract noun, because it is a deceptively simple step to then treat it as a concrete noun, i.e., as a thing. Although Jung often argued against the hazards of reification, he was guilty of this practice repeatedly and consistently throughout his work. Even in his first published monograph, he referred to "the subconscious" (Jung, 1902, p. 13) and "the unconscious" (Jung, 1902, p. 87), and he later mentioned "psychic entities outside consciousness" (Jung, 1912b, p. 113).

In itself, using "unconscious" as a noun is a relatively minor matter since it is usually impossible to tell except from the context whether it is employed abstractly or concretely. It is a more serious mistake, though, when using "unconscious" as a noun then leads to attributing material qualities to it, especially causal properties. Again, Jung does this ubiquitously throughout his papers, as his "hypothetical term" can take "possession of the ego" (Jung, 1939c, p. 243), exert a "controlling influence" (Jung, 1952c, p. 330), make a "dangerous intervention in our affairs" (Jung, 1952c, p. 374), "spontaneously attracts energy" (Jung, 1952c, p. 432) and even engages in "the instigating of accidents" (Jung, 1943a, p. 125). It must be stressed that these are a mere handful of examples from among literally hundreds in his writings.

Often, Jung went even further than reification by also anthropomorphizing the unconscious. He attributed human actions to it, claiming it could "premeditate" ideas (Jung, 1905, p. 99), can "perceive, and can associate autonomously" (Jung, 1905, p. 98) and make "demands" (Jung, 1921, p. 339). He asserted it has "personality, initiative, and wilful intention" (Jung, 1939c, p. 243), and has "purposes and intuitions, feels and thinks as does the conscious mind" (Jung, 1931c, p. 349). Finally, he ascribed human emotions to it, saying it can be "willing to let itself be impressed" (Jung, 1952c, p. 186) and has a "longing" and an "unquenchable desire for the light of consciousness" (Jung, 1952c, p. 205).

Jung's theoretical weakness in the area of describing unconscious processes is an indication of how extraordinarily difficult it is to conceptualize events which can be seen only in their effects. There are obviously aspects of the phenomena Jung observed which prompted him to reify and even anthropomorphize the unconscious. Also, it is understandable that he lapsed into modes of theorizing more appropriate for the natural sciences (reification) and conscious human beings

(anthropomorphizing), since he was among the first to explore the "border" territory of unconscious processes, which lacked (and to a large extent continue to lack) an established theoretical approach and vocabulary tailored to its own unique characteristics. It will be the task of the final section of this chapter both to discuss the nature of the unconscious phenomena Jung discovered and to suggest a direction for a way of talking about these phenomena without violating their uniqueness and autonomy.

The Nature of Unconscious Phenomena

In this section, the term "unconscious" will be used as an adjective, modifying the words "processes" and "products". It is believed that by proceeding in this manner, reification and anthropomorphizing can be avoided without sacrificing the phenomena Jung discovered. Indeed, it is hoped that this practice will sharpen the focus on the theoretical difficulties raised by the existence of unconscious mental processes. The subject matter of this section will include a discussion of the characteristics, activities and functions of these processes from Jung's point of view.

One of the major attributes of unconscious processes is their autonomy. They have "an independent function" (Jung, 1948c, p. 287), an "independent psychic activity outside consciousness" (Jung, 1934a, p. 146) with their "own inherent tendencies" (Jung, 1922, p. 78). They display "an independent, productive activity", in a "self-contained world, having its own reality" (Jung, 1934b, p. 194). Together, their "nature transcends consciousness" (Jung, 1954g, p. 274) so that you cannot legitimately call them "your own" unless "you assume your conscious personality to be a part of a whole or to be a smaller circle contained in a bigger one" (Jung, 1940a, p. 40). Jung added that we cannot "assume that the unconscious is capable of becoming autonomous only in certain people, namely in those predisposed to insanity. It is very much more likely that the tendency to

autonomy is a more or less general peculiarity of the unconscious .... This tendency to autonomy shows itself above all in affective states, including those of normal people" (Jung, 1939a, p. 278).

As relatively autonomous, the conscious will "can control them only in part" (Jung, 1951a, p. 27) while these processes possess "qualities which are not under conscious control" (Jung, 1958a, p. 335). The will "may be able to suppress them, but it cannot alter their nature, and what is supressed comes up again in another place in altered form" (Jung, 1951a, p. 27). They "can be neither inhibited nor voluntarily reproduced" (Jung, 1922, p. 78) and can cause "disturbances ... which no will can control and no purpose deflect" (Jung, 1926, p. 333).

The autonomy of these processes is such that they are experienced as "an object distinct from the subject" (Jung, 1921, p. 169) and even as an "independent being" (Jung, 1926, p. 335). It should be noted that this subjective <u>experience</u> of unconscious processes as personified probably influenced Jung's <u>conceptualizations</u> of the experience in the direction of anthropomorphizing.

Although unconscious processes are autonomous, they are only <u>relatively</u> so and <u>do</u> affect consciousness. They may frustrate "the will and intentions of the conscious mind" (Jung, 1952a, p. 456n), and have the power "to obsess our consciousness and to influence our moods and actions" (Jung, 1934b, p. 250). Also, they can gain "absolute ascendancy over the will of the subject, and can therefore bring about or enforce actions and achievements that could never be done by conscious effort", including an "impetus to action" and "inspiration that transcends conscious understanding" (Jung, 1921, p. 243).

A characteristic of certain <u>collective</u> unconscious processes related to their autonomy is what Jung called their "numinosity" when they become conscious. By this, he meant that they are "felt as strange, uncanny, and at the same time fascinating" (Jung, 1948f, p. 311) with "supreme power" (Jung, 1921, p.

182). Numinosity "transports the subject into the state of rapture, which is a state of will-less surrender" (Jung, 1954c, p. 186).

A third property of unconscious processes is their apparently undifferentiated nature. Although these processes cannot be directly experienced, Jung presented two considerations to support this claim. First, the idea of discrimination between objects or events is the very "essence of consciousness", so that "where no consciousness exists, where purely unconscious instinctive life still prevails, there is no reflection, no pro et contra, no disunion, nothing but simple happening, self-regulating instinctivity, living proportion" (Jung, 1921, p. 112). This argument of Jung's is very weak, though, for it begs the question by equating "conscious" with "differentiated". It does not address the real issue, which is if, and in what manner, differentiation occurs in psychic processes outside awareness. While it may be conceded that consciousness is required for a function such as reflection, this does not mean that there are no differentiations of any kind without conscious awareness.

Jung's second argument, based on his observations, is more sound. In his experience the manifestations of unconscious processes are "in the main chaotic and irrational" (Jung, 1939a, p. 283), from which he concluded that the processes themselves share these characteristics. While "hypothetical germs of differentiation may be conjectured to exist ... their existence cannot be proved, because everything appears to be in a mutual state of contamination" (Jung, 1954g, p. 288). These processes seem to be "instinctive" with "no differentiated functions" (Jung, 1934b, p. 192) and "show only the barest traces of any definite contents, surprising the investigator at every turn with a confusing medley of relationships, parallels, contaminations, and identifications" (Jung, 1954g, p. 288).

There are several aspects of this relative lack of differentiation. First, the products of unconscious processes are "incredibly vague" (Jung, 1939d, p. 491) and

there is an "indistinctness of ideas" (Jung, 1907, p. 113). Then, "lacking all recognizable qualities, no unconscious content can be distinguished from another" (Jung, 1944b, p. 309) and all psychic functions "are indistinguishably merged in the original and fundamental activity of the psyche" (Jung, 1921, p. 112). There is a "merging of subject and object" (Jung, 1952c, p. 325) and unconscious contents are "mutually contaminated to such a degree that they cannot be distinguished from one another and can therefore easily take one another's place" (Jung, 1955b, pp. 462-463).

A corollary to the contamination in unconscious processes is the identity of logical opposites in unconscious products (Jung, 1944b). They appear to be "ambivalent" (Jung, 1944b, p. 60), "paradoxical" (Jung, 1944b, p. 413) and "contradictory" (Jung, 1955b, p. 324). Unconscious processes are "both good and evil and yet neither" (Jung, 1955b, p. 197), both "destructive and constructive" (Jung, 1955b, pp. 200-201).

While the above account suggests that unconscious processes lack any qualitative distinctions, some insight into a kind of structure which <u>can</u> be discerned is provided by an examination of a fourth attribute of unconscious processes, their "dissociability". By this term, Jung meant that "the connecting link between the psychic processes themselves is a very conditional one" (Jung, 1954c, p. 173). Affects, especially, may cause disturbances "indicative of a psychic split" (Jung, 1934a, p. 139), and there is also "a dissociation between conscious and unconscious" (Jung, 1931a, p. 374). Jung explained this by stating that "the psyche is not a homogeneous structure but apparently consists of hereditary units only loosely bound together, and therefore it shows a very marked tendency to split into parts" (Jung, 1936b, p. 121).

The organization inherent in unconscious processes can be discovered by studying the nature of processes dissociated from the ego and hence, by Jung's

definition, unconscious. He declared that although the tendency to dissociation:

> is most clearly observable in psychopathology, fundamentally it is a normal phenomenon .... The tendency to split means that parts of the psyche detach themselves from consciousness to such an extent that they not only appear foreign but lead an autonomous life of their own. It need not be a question of hysterical multiple personality, or schizophrenic alterations of personality, but merely of so-called 'complexes' that come entirely within the scope of the normal. Complexes are psychic fragments which have split off owing to traumatic influences or certain incompatible tendencies (Jung, 1936b, p. 121).

Thus, despite a relative absence of differentiation in unconscious processes, organization can be found in the psychic structures Jung called "complexes". The existence of unconscious structural units is only to be expected, since the "ego-complex" itself "crystallizes out of a dark depth in which it was somehow contained in potentia" (Jung, 1939a, p. 281). Dissociated complexes can't "be described as affects pure and simple, but are fragmentary psychic systems" (Jung, 1938, p. 35).

Jung also found that "in nearly all the important types of dissociation, the manifestations of the unconscious assume a strikingly personal form" and "show traces of personalities" (Jung, 1939a, p. 283). The more complicated the complexes are, "the more they have the character of personalities" (Jung, 1938, p. 35) and "behave like independent beings" (Jung, 1936b, p. 121).

As noted above, the finding that dissociated processes are experienced like independent beings undoubtedly played a part in Jung's anthropomorphizing. He did not even hesitate to speculate about whether in fact there is such a being as "the unconscious", with an ego and consciousness of its own! Three phenomena contributed to raising this question. First, the fact that complexes appear like "secondary personalities" suggests the possibility that they possess "a kind of consciousness" (Jung, 1955b, p. 358). Second, "the fact that something very like 'representedness' or consciousness does attach to unconscious contents" means that "the possibility of an unconscious subject becomes a serious question" (Jung,

1954c, p. 165). Finally, in considering unconscious volitional processes, "if this is not to be just a matter of 'instincts' and 'inclinations', but rather of considered 'choice' and 'decision' which are peculiar to the will, then one cannot very well get around the need for a controlling subject" (Jung, 1954c, p. 173).

In answering this question, Jung stated several times that "it was never possible for me to discover in the unconscious anything like a personality comparable with the ego" (Jung, 1939a, p. 283). Also, "there is no evidence that the unconscious contents are related to an unconscious centre analogous to the ego; in fact there are good reasons why such a centre is not even probable" (Jung, 1939d, p. 485). On the other hand, in a later paper, he declared that "if unconscious acts of volition are to be possible, it follows that these must possess an energy which enables them to achieve consciousness, or at any rate to achieve a state of secondary consciousness which consists in the unconscious process being 'represented' to a subliminal subject who chooses and decides" (Jung, 1954c, p. 174). Within the same paper, however, he maintained that "as there are no sufficient grounds for assuming that a second ego exists in every individual or that everyone suffers from dissociation of personality, we have to discount the idea of a second ego-consciousness as a source of voluntary decisions" (Jung, 1954c, p. 189). His final "solution" to the question of unconscious volition was the postulation of an "approximative consciousness" and a "multitude of luminosities", ideas which were discussed earlier in this chapter.

It is evident that Jung was struggling with a very difficult issue, which was also highly speculative. Essentially, he was trying to account for the fact that unconscious processes occur <u>as if</u> directed by a conscious subject. This issue is similar to one dealt with earlier in this chapter regarding the <u>flexibility</u> of reactions of unconscious processes even though there is no consciousness. Further discussion of how best to conceptualize the "quasi-conscious" aspects of uncon

scious processes will be reserved for the investigation of the functions of these processes at the end of this chapter.

Another characteristic of unconscious processes related to the issue of organization is their continuity. Unconscious products display an "obstinate persistence" (Jung, 1921, p. 168), while one can use dreams as "the visible links in a chain of unconscious events" (Jung, 1940a, p. 33). If dreams are "examined over a long series, [they] reveal the continuity of the unconscious pictorial flood with surprising clearness. The continuity is shown in the repetition of motifs" (Jung, 1935, p. 12).

A sixth property of unconscious processes is their "limitlessness" and freedom from some of the restrictions of the conscious mind. While one can theoretically differentiate unconscious processes from conscious or physiological ones (albeit with difficulty), the former processes themselves are transcendental and hence their own scope cannot be determined. As Jung put it, "since the unconscious component really is unconscious, no boundaries can be assigned to it: we cannot say where the psyche begins or ends" (Jung, 1958c, p. 441). Unconscious processes are "a field of experience of unlimited extent" (Jung, 1934b, p. 194).

In addition to being "illimitable" they are also "not determined by space and time" (Jung, 1944b, p. 174), at least not in the sense in which these terms apply to conscious experience. One "cannot attribute any particular form" to unconscious processes (Jung, 1939d, p. 490) while "past, present, and future are blended together" (Jung, 1939d, p. 503). Therefore, "in so far as the forms or patterns of the unconscious belong to no time in particular, ... they convey a peculiar feeling of timelessness when consciously realized" (Jung, 1939d, p. 490). This quality "expresses itself in a feeling of eternity or immortality" (Jung, 1946c, p. 313).

A seventh attribute of unconscious processes is their archaic nature (Jung, 1946c). They have "the automatic character of an instinct", are compulsive and "are always coming into collision" (Jung, 1954c, p. 210). Also, whatever is repressed or excluded from consciousness "necessarily remains in an untrained, undeveloped, infantile or archaic condition, ranging from partial to complete unconsciousness" (Jung, 1936b, p. 124). It is "in proportion to their distance from consciousness" that they assume "an archaic and mythological character" (Jung, 1954c, p. 186).

To summarize, seven characteristics of unconscious processes have been identified: they are autonomous, numinous, undifferentiated, dissociable, limitless, continuous and archaic. The remainder of this chapter will be concerned with describing the actual activities and functions of these processes.

With regard to unconscious psychic activity, Jung said that "fantasy ... seems to me the clearest expression of the specific activity of the psyche" (Jung, 1921, p. 52). It is a "continually creative act" which "is for the most part a product of the unconscious. Though it undoubtedly includes conscious elements, it is none the less an especial characteristic of fantasy that it is essentially involuntary and, by reason of its strangeness, directly opposed to the conscious contents" (Jung, 1921, pp. 52-53). Unconscious fantasy is "always at work" (Jung, 1934b, p. 186), creating such products as dreams, "mythological formations" and "delusional systems" (Jung, 1914b, p. 188). It is "not under the control of the conscious mind" (Jung, 1952c, p. 441). While unconscious fantasy itself is unknown, it becomes "visible indirectly to the conscious mind by stimulating the imaginative material at its disposal" (Jung, 1952c, p. 430) and "speaks in images" (Jung, 1931e, p. 160). Thus, it can only be perceived in "symbolized form" (Jung, 1955b, p. 107).

Although fantasy is seen as the most general unconscious psychic activity,

Jung identified other, more specific actions which take place unconsciously. His position on this issue, however, shifted according to the context in which he was writing and often his statements contradicted each other.

For example, at times Jung minimized the differentiation of unconscious psychic activities. He claimed unconscious processes are "instinctive", with "no differentiated functions" (Jung, 1934b, p. 192), and described them as "an unceasing stream or perhaps ocean of images and figures" (Jung, 1931c, p. 350). At other times, he declared that "to my mind there is no doubt that all the activities ordinarily taking place in consciousness can also proceed in the unconscious" (Jung, 1931h, p. 144). In still another paper, he even stated that unconscious processes are "capable at times of manifesting an intelligence and purposiveness superior to the actual conscious insight" (Jung, 1940a, p. 39). They are "more complete than consciousness" and "often contain a superior analysis or insight or knowledge which consciousness has not been able to produce" (Jung, 1940a, p. 41).

Once again, the inconsistencies in Jung's theorizing derive from the difficult task of conceptualizing unconscious activities which are <u>different from</u> conscious ones, yet in many ways <u>similar to</u> conscious processes, especially at the border area between conscious and unconscious. Jung appeared to have some insight into the nature of this issue, but his contradictory statements probably arose from his not fully recognizing how crucial the issue is to the status of "unconscious processes" in a scientific theory.

Thus, he <u>did</u> distinguish between conscious and unconscious processes, saying, "the unconscious does not isolate or differentiate its objects as consciousness does. It does not think abstractly" (Jung, 1952a, p. 441). In another differentiation of conscious and unconscious processes, Jung denied the existence of "representations" to an "unconscious subject", saying one should speak "not of

'representations' or 'perceptions', but of contents" (Jung, 1954c, p. 165). The similarity between conscious and unconscious processes then is explained by "the fact that the psychic process remains essentially the same whether it is 'represented' or not" (Jung, 1954c, p. 172).

If one takes Jung's statements about the lack of differentiation in unconscious processes as an exaggerated attempt to distinguish them from more differentiated conscious ones, and at the other extreme, if one regards his declarations about the "superior intelligence" of unconscious processes as a similarly exaggerated effort to convey the resemblance to conscious processes, one is left with a model of unconscious activities as lacking a subject (with its attendant activities of consciousness, representation and intention) but as otherwise very similar to conscious activities. The similar activities are ones "that can become conscious under other conditions" (Jung, 1923, p. 520). He said we can "perceive, think, feel, remember, decide, and act unconsciously" (Jung, 1931h, p. 143) and also included such unconscious activities as "perception, apperception, ... imagination, will ... reflection, judgment" (Jung, 1954c, p. 172) and having "purposes and intuitions" (Jung, 1931c, p. 349). If activities which require a subject, such as will, reflection, judgment and purpose, are removed, one is left with a list of unconscious psychic activities which is consistent with the "intermediate" interpretation of Jung's formulations proposed above. The issue of how to deal with the omitted items will be taken up again in the final section of this chapter, on the functions of unconscious processes.

In Jung's work, unconscious processes serve three functions: compensating conscious attitudes, anticipating future developments and organizing the form of conscious activities. The first two functions are dynamic, compensation in a more entropic, equilibrium-oriented sense and anticipation as more strictly developmental. The organization of conscious processes is by contrast a relatively static,

structural function.

As early as 1914 in his first use of this concept, Jung stated that "the principal function of the unconscious is to effect a compensation and to produce a balance" (Jung, 1914a, p. 205). Unconscious processes are "coordinated with the conscious mind in a compensatory relationship" (Jung, 1934b, p. 137) and "complement one another to form a totality" (Jung, 1934b, p. 186).

In his section on definitions in Psychological Types (1921), Jung said that compensation means "balancing, adjusting, supplementing" (p. 418). He stated that "I conceive it as functional adjustment in general, an inherent self-regulation of the psychic apparatus" (Jung, 1921, p. 419). Compensation "should not be understood dualistically as an absolute opposite but as a helpful though nonetheless dangerous complement to the conscious position" (Jung, 1955b, p. 126). Unconscious processes compensate the "biases and aberrations of the conscious mind" (Jung, 1942a, p. 185) and try "to make whole the conscious part of the psyche by adding to it the parts that are missing" (Jung, 1951c, p. 123). This is done by bringing "to the surface the subliminal material that is constellated by the conscious situation" (Jung, 1921, p. 485), including "everything that is repressed or neglected or unknown" (Jung, 1948b, p. 250).

Compensation is always relative to "the conscious situation at that moment" (Jung, 1948b, p. 249) and results in "the creation of a new balance" between conscious and unconscious (Jung, 1934b, p. 172). An "approximate harmony between conscious and unconscious" (Jung, 1948c, p. 289) is necessary for "the maintenance of the psychic equilibrium" (Jung, 1921, p. 340). When this is effective, it produces "such a change in the conscious attitude that we are entitled to speak of a new level of consciousness" (Jung, 1939d, p. 488).

Jung explained that the existence of compensation is due to the very nature of conscious experience. He said, "It is in the nature of the conscious mind

to concentrate on relatively few contents and to raise them to the highest pitch of clarity. A necessary result and precondition is the exclusion of other potential contents of consciousness. The exclusion is bound to bring about a certain one-sidedness of the conscious contents" (Jung, 1940b, p. 162). The natural inclination is that "all the impulses, thoughts, wishes, and tendencies which run counter to the rational orientation of daily life are denied expression, thrust into the background, and finally fall into the unconscious," where "the compensatory function ... is constantly present" (Jung, 1918, p. 18).

Expressed in a slightly different way, Jung declared:

> the tendency to separate the opposites as much as possible and to strive for singleness of meaning is absolutely necessary for clarity of consciousness, since discrimination is of its essence. But when the separation is carried so far that the complementary opposite is lost sight of, and the blackness of the whiteness, the evil of the good, the depth of the heights, and so on, is no longer seen, the result is one-sidedness, which is then compensated from the unconscious without our help (Jung, 1955b, pp. 333-334).

Also, he noted that "every psychic development ... possesses an optimum which, when exceeded" produces unconscious compensation (Jung, 1948g, p. 245).

Jung described the conditions under which compensation takes place. He said, "Normally, the unconscious collaborates with the conscious without friction or disturbance, so that one is not even aware of its existence" (Jung, 1939a, p. 282). Also, "we can say that between the conscious and the unconscious there is normally an opposition. This opposition, however, is not perceived as a conflict so long as the conscious attitude is not too one-sided and not too remote from that of the unconscious" (Jung, 1923, p. 522). He explained that "the compensatory function of the unconscious becomes more obvious the more one-sided the conscious attitude" (Jung, 1921, pp. 485-486), and "the more one-sidedly, rigidly, and absolutely the one position is held, the more aggressive, hostile, and incompatible will the other become" (Jung, 1943a, p. 88). Jung summarized his thoughts on this issue using dreams as an example of unconscious processes and

identified three possibilities: "If the conscious attitude to the life situation is in large degree one-sided, then the dream takes the opposite side. If the conscious has a position fairly near the 'middle', the dream is satisfied with variations. If the conscious attitude is 'correct' (adequate), then the dream coincides with and emphasizes this tendency, though without forfeiting its peculiar autonomy" (Jung, 1948c, p. 288).

For Jung, the function of compensation "corresponds to a similar function in the physiological sphere, namely, the self-regulation of the living organism" (Jung, 1921, p. 419). As an example, he mentioned unconscious processes reacting "automatically like my stomach which, in a manner of speaking, wreaks its revenge upon me" for an "error in psychic diet" (Jung, 1934b, p. 247). He made it clear, however, that compensation is not a concept similar to those of the natural sciences, but is a "biological relationship" (Jung, 1946b, CW10, p. 218). Similarly, he stated that "although the unconscious is, in general, complementary to consciousness, the complementing is not of a mechanical nature that can be clearly predicted, but acts in each case purposively and intelligently" (Jung, 1952c, p. 390n), "as if it were trying to restore the lost balance" (Jung, 1939a, i, p. 282).

Evaluated scientifically, the concept of compensation holds empirical promise. Before it could be empirically tested, however, more specific operational definitions of "one-sidedness" and "compensation" that is not merely mechanical would need to be formulated. If this were done, Jung's notion could be used to predict the kind of compensation expected given the nature of the conscious situation, and this prediction could then be empirically verified by examining unconscious products such as dreams.

From a philosophical standpoint, the concept of compensation is dynamic but not developmental, since it essentially refers to a conservative process of

maintaining an equilibrium. Indeed, it would be difficult to categorize it as a psychological (as opposed to biological) concept were it not for Jung's references to the compensation as "intelligent" and "purposive". The issue of an unconscious purposiveness has come up repeatedly in this chapter, but can perhaps be seen most clearly in examining the second function of unconscious processes, their prospective anticipation of the future.

Anticipation of the future is a developmental function of unconscious processes. In addition to the reactive function of compensation, Jung felt that unconscious processes have their own "specific creative energy" to produce "new contents" (Jung, 1931a, p. 364) and "new formations" (Jung, 1946c, p. 177). Unconscious processes are "continually creative" (Jung, 1921, p. 52) and produce "dreams, fantasies (q.v.), etc." (Jung, 1921, p. 485).

In their creative activity, Jung believed that unconscious processes have a "teleological orientation" (Jung, 1934b, p. 141). He hypothesized that these processes are "intelligent, purposive, and, as it were, personal" (Jung, 1940a, p. 22) and have an "active orientation to goals and purposes" (Jung, 1948b, p. 254).

By means of this goal-directedness, unconscious processes have a "prospective function", which he defined as "an anticipation in the unconscious of future conscious achievements, something like a preliminary exercise or sketch, or a plan roughed out in advance. Its symbolic content sometimes outlines the solution of a conflict" (Jung, 1948b, p. 255). Unconscious processes may contain the "seeds of individual development" (Jung, 1934b, p. 168), the "roots of all constructive fantasies" (Jung, 1930, p. 331), the "germs of conscious convictions" (Jung, 1918, p. 19) and "inklings of possibilities" (Jung, 1929a, p. 43).

This anticipation of the future may "have the value of a positive, guiding idea" (Jung, 1948b, p. 255) and may "gain influence over the resisting conscious

mind without the patient's consciously noticing what was happening" (Jung, 1934b, p. 144). Thus, unconscious processes are "not only spontaneous but can actually take the lead" (Jung, 1934b, p. 193). Jung immediately emphasized, however, that it would be wrong to suppose that "the unconscious is working to a deliberate and concerted plan and is striving to realize certain definite ends .... The driving force, so far as it is possible for us to grasp it, seems to be in essence only an urge towards self-realization" (Jung, 1934b, pp. 193-194).

Thus, again Jung made it clear that he hypothesized a goal-directedness in unconscious processes, but wanted to differentiate it from a conscious purposefulness such as is involved in creating and then carrying out a plan. The issue of "unconscious goal-seeking" will be discussed after briefly reviewing the mechanics Jung postulated to account for the prospective function of unconscious processes.

Jung pointed out that "everything that will be happens on the basis of what has been, and of what — consciously or unconsciously — still exists as a memory trace" (Jung, 1939a, p. 279). Unconscious processes also have at their disposal "all subliminal psychic contents, all those things which have been forgotten or overlooked" (Jung, 1943a, p. 126), the "psychological combinations which do not reach the threshold of consciousness" (Jung, 1952c, p. 50n). In combining this material, unconscious processes can produce a "subliminal synthesis" (Jung, 1952c, p. 50), and "subliminal combinations that are prospective" (Jung, 1943a, p. 126). It is when the "conscious attitude is unadapted both objectively and subjectively, [that] the — under normal conditions — merely compensatory function of the unconscious becomes a guiding, prospective function capable of leading the conscious attitude in a quite different direction which is much better than the previous one" (Jung, 1948b, p. 257).

While the entire notion of a "prospective function" of unconscious processes may appear to contradict Jung's insistence that the reductive and

constructive methods are merely "points of view" and don't refer to the "objective" nature of things, it is evident that there is something about these processes which led him to conceptualize them as purposive. Throughout this chapter, it has been clear that unconscious processes exhibit qualities that look like conscious intentions, but are not identical with them, since there is no evidence of a "consciousness in the unconscious" or an "unconscious subject" (if indeed these terms are even meaningful).

What was most difficult for Jung and what usually eluded him was a way to conceptualize the unique nature of unconscious processes by doing full justice to their non-mechanical qualities without attributing properties to them which are only possible with a conscious subject. At his best, Jung described these borderline qualities of unconscious processes "as if" they had representations and made choices, and postulated an "approximative consciousness" as something similar to, but not identical with, ego-consciousness.

Since Jung's notion of unconscious processes has aspects in common with both the phenomenologists' idea of the "lived world" and Polanyi's field of "subsidiary awareness", it could prove useful to examine their work for concepts which might less ambiguously portray the intelligent and directed yet non-conscious processes Jung investigated. While this dissertation will not go into detail on alternative ways to conceptualize Jung's findings, it is important to note that the writings of phenomenological philosophers and psychologists could help to provide an abstract framework within which the phenomena Jung was concerned with could be discussed effectively, especially by providing a language tailored to the unique aspects of non-conscious processes. In particular, the concept of "intentionality" might supply a foundation for conceptualizing the goal-oriented quality of these processes through its assumption both of a fundamental relatedness of what become subject and object with consciousness and of a

directedness of human behavior. Any further elaboration is beyond the scope of this dissertation, but the work of the phenomenologists indicates a direction which future theoretical investigations could take with regard to Jung's discoveries.

The third function Jung attributed to unconscious processes was their "organizing influence on the contents of consciousness" (Jung, 1954c, p. 229). They carry out this function through "a priori or prenatally determined modes of behaviour and functions" (Jung, 1945b, p. 91), which he called instincts and archetypes. This subject was briefly touched on earlier in the present chapter in a discussion of how the structure of collective unconscious processes results in similar symbolic expressions among all men, and will be examined in much more detail in the following chapter.

To summarize the material discussed in this chapter, in the first section, the phenomena which prompted Jung to posit the concept of "unconscious" were presented. Then, the historical development of this concept from its equation with personal repressed contents to a more general status as the collective foundation of the psyche was examined, including a consideration of its scientific value. In the third section, the notion of unconscious processes was placed in a theoretical context between conscious and physiological processes, while the concepts of "approximative consciousness" and "psychoid" were discussed. In a more detailed scrutiny of the nature of the concept of "unconscious", several usages of this term were differentiated and the dangers of reification and anthropomorphizing attendant to its inability to be directly observed were pointed out. Finally, the nature of unconscious processes themselves was addressed by describing their characteristics, activities and functions. The key issue of conceptualizing non-conscious intelligent and goal-directed action was identified and a suggestion made for a fruitful theoretical direction which future work in the area could take.

Chapter 4: Archetypes and Symbols

In the discussion of unconscious processes in the previous chapter, it was noted that while Jung viewed these processes as relatively undifferentiated (compared to conscious mentation), he did believe they possessed a minimal structure which helps to organize conscious thought. He called structural units of a predominantly personal nature "complexes", while those which are more collectively human were referred to as "archetypes". In his description of the individuation process, Jung especially stressed the collective nature of this undertaking after the initial, merely personal conflicts had been resolved. In order to best elucidate this process, the focus of this chapter will be on collective archetypes and their symbolic expression rather than on Jung's ideas on complexes.

Archetypes

The concept of "archetype" as the fundamental structural element in collective unconscious processes is central to understanding what Jung meant by individuation. In this section, the phenomena which prompted the creation of this concept will be described, followed by an exploration of the meaning of the term and its historical development in Jung's work. The relation of archetypes to instinctive processes will be examined in an effort to clarify what kind of concept Jung developed. Then, this concept will be evaluated regarding both its scientific value and its relation to a philosophical framework. Finally, the functions, hypothetical origins and qualities of archetypes and archetypal images will be detailed.

The Phenomena to Be Explained

In the previous chapter, the observations leading to Jung's concept of the "collective unconscious" were described. It was noted that it was his attempts to understand the delusions of his schizophrenic patients that initially led to his discovering the mythological and hence collective nature of the symbols they produced. From there, he argued that the remarkable similarities in both content and meaning of the symbolic expressions men have created, in many different mediums and across both cultural and historical boundaries continuing to the present day, constitute strong evidence for the existence of collective unconscious mental processes common to all men, since often any other means of transmission of these expressions can be ruled out.

While the previous chapter dealt with the form of collective unconscious mental processes in general, this chapter will address more specifically the actual contents of these processes with regard to both their hypothetical nature and their expression in consciousness. In Jung's experience, the symbolic expressions which are produced universally "are never (or at least very seldom) myths with a definite form, but rather mythological components" (Jung, 1940b, p. 153). In an early formulation of his ideas, he said that "even the most individual systems are not absolutely unique, but offer striking and unmistakable analogies with other systems. From the comparative analysis of many systems the typical formations can be discovered" (Jung, 1914b, p. 187). Many years later, he said that "since for years I have been observing and investigating the products of the unconscious in the widest sense of the word, namely dreams, fantasies, visions, and delusions of the insane, I have not been able to avoid recognizing certain regularities, that is, types" (Jung, 1941a, p. 183).

Jung supplied a description of how the discovery of "types" can be practically carried out. He said:

> First of all, certain symbols have to be isolated clearly enough to be recognizable as typical phenomena, not just matters of chance. This is done by examining a series of dreams, say a few hundred, for typical figures, and by observing their development in the series .... In this way it is possible to establish certain continuities or modulations of one and the same figure .... Not only the type itself but its variants too can be substantiated by evidence from comparative mythology and ethnology (Jung, 1936a, p. 53).

In the course of his observations, Jung found that "the myths and fairytales of world literature contain definite motifs which crop up everywhere. We meet these same motifs in the fantasies, dreams, deliriums, and delusions of individuals living today. These typical images and associations are what I call archetypal ideas" (Jung, 1958c, p. 449).

Thus, Jung observed that the similarity of symbolic expressions in all times and places was not totally haphazard, but displayed a structure, in that these expressions clustered around identifiable motifs or figures which he called "archetypes". In the next section, the definition and theoretical development in Jung's writings of the concept of archetypes will be discussed in order to clarify in what way he utilized it to account for the clustering of symbolic expressions.

Definition and Theoretical Development of the Archetype Concept

Jung took great pains to try to clarify just what he meant by "archetype". In 1918, even before he first used the term, he declared "it should on no account be imagined that there are such things as inherited ideas" (p. 10). After he introduced the concept of archetype in 1919, he consistently maintained that he was not referring to "inherited ideas" or "contents of apprehension" (Jung, 1921, p. 304), since "archetypes are not determined as regards their content, but only as regards their form and then only to a very limited degree" (Jung, 1954c, p. 79).

Instead of "inborn ideas", Jung explained that archetypes are "innate possibilities of ideas" (Jung, 1918, p. 10), "inherited thought-patterns" (Jung, 1934b, p. 147) and "the conditions for the forming of representations in general" (Jung, 1956a, p. 255). They are "the preconditions of all apprehension" (Jung, 1921, p.

304) and "the inherited disposition to react in the same way as people have always reacted" (Jung, 1929d, p. 111). Thus, by "archetype", Jung did not mean an unconscious content, but something less tangible, which he characterized as a possibility, pattern, precondition or disposition.

Three basic qualities in Jung's definition of archetype can be identified: they are organizing, dispositional and typically human. With regard to their organizing properties, Jung referred to archetypes as a priori "organizing factors" (Jung, 1952c, p. 328n), a "kind of pre-existent ground-plan that gives the stuff of experience a specific configuration" (Jung, 1921, p. 304) and a "fundamental schema" (Jung, 1955a, p. 388). They are "preformed patterns" (Jung, 1954b, p. 66), "factors and motifs that arrange the psychic material into certain images" (Jung, 1948e, p. 149n), "categories of the imagination" (Jung, 1953, p. 518) and "regulative principles that shape" psychic material (Jung, 1922, p. 81). Archetypes are "a priori, inborn forms of 'intuition'" (Jung, 1919, p. 133n), but they are "forms without content" (Jung, 1936a, p. 48). They are "a priori conditions of all psychic events" (Jung, 1948e, p. 188), including imagination (Jung, 1931g), perception (Jung, 1954b) and fantasy-production (Jung, 1918).

As dispositional, Jung described archetypes as "an inborn disposition to produce parallel thought-formations" (Jung, 1952c, p. 158). They represent "the possibility of a certain type of perception and action" (Jung, 1936a, p. 48) as well as the possibility of ideas (Jung, 1954b) and representations (Jung, 1954f). They are "a kind of readiness to produce over and over again the same or similar mythical ideas" (Jung, 1943a, p. 79) and "the same figures, meanings, and values" (Jung, 1954e, p. 283) which "reappear in the history of all epochs and all peoples" (Jung, 1955b, p. 390).

With respect to archetypes' attribute of being typically human, Jung said they are "common to all men" (Jung, 1952c, p. 158) and are "systems that are

organized and ready to function in a specifically human way" (Jung, 1949, p. 315). They are "function-traces that typify, on average, the most frequently and intensively used functions of the human psyche" (Jung, 1921, p. 169) and force man's "perception and apprehension into specifically human patterns" (Jung, 1919, p. 133). Archetypes are "inborn modes of functioning that constitute, in their totality, man's nature" (Jung, 1952c, p. 328n). They are the "'human quality' of the human being" (Jung, 1954f, p. 78) and are "symptoms of the uniformity of Homo sapiens" (Jung, 1955b, p. xiv).

Archetypes represent "typical situational patterns" (Jung, 1954c, p. 205) and "there are as many archetypes as there are typical situations in life" (Jung, 1936a, p. 48). Jung identified the key situations as "youth and old age, birth and death, sons and daughters, fathers and mothers, mating, and so on" (Jung, 1949, p. 315).

With respect to their relation to collective unconscious processes and the psyche in general, Jung described archetypes as "numinous, structural elements of the psyche" (Jung, 1952c, p. 232) and each is "an integral component of the human mind everywhere from time immemorial" (Jung, 1921, p. 439). They are "structural dominants of the psyche in general" (Jung, 1948e, p. 149n) and "universal and inherited patterns which, taken together, constitute the structure of the unconscious" (Jung, 1952c, p. 228). Archetypes are "foundation stones of the psychic structure" (Jung, 1951a, p. 20), which includes both conscious and unconscious processes (Jung, 1921, 1931d).

It is clear that Jung conceived archetypes as structures which provide forms or patterns for conscious experience, but the manner of existence of archetypes themselves remains to be addressed. Jung said what they are not, asserting that "what we mean by 'archetype' is in itself irrepresentable" (Jung, 1954c, p. 214). They have an "indefiniteness" (Jung, 1946c, p. 288) and "no

exactly determinable form" (Jung, 1954b, p. 70).

Jung distinguished between archetypal ideas or images and archetypes themselves. He said the latter "refer to ... something essentially unconscious. In the last analysis, therefore, it is impossible to say what they refer to. Every interpretation necessarily remains an 'as-if'" (Jung, 1940b, p. 156). Their existence "can only be inferred" (Jung, 1940b, p. 153) as it "cannot be ascertained except from their effects" (Jung, 1922, p. 81). Thus, the archetype itself is "a hypothetical and irrepresentable model" (Jung, 1954a, p. 5n).

As a model, the archetype refers to "a psychoid factor that belongs, as it were, to the invisible, ultraviolet end of the psychic spectrum" (Jung, 1954c, p. 213). Jung also suggested that it "might perhaps be compared to the axial system of a crystal, which, as it were, preforms the crystalline structure in the mother liquid, although it has no material existence of its own. This first appears according to the specific ways in which the ions and molecules aggregate. The archetype in itself is empty and purely formal, nothing but a facultas praeformandi, a possibility of representation which is given a priori. The representations themselves are not inherited, only the forms" (Jung, 1954f, p. 79).

It is evident that Jung thought of an archetype as a hypothetical model, not a substantial entity. In a later section of this chapter, there will be an assessment of this concept regarding both its scientific value and its relation to a philosophical framework. At that time, a way of understanding the elusiveness of the phenomena Jung tried to capture will be suggested.

Considered in its historical development, Jung originally used the concept of archetype in a relatively narrow sense and later greatly generalized its meaning. This generalizing process was typical of Jung's approach to his basic theoretical notions. For a few years before he introduced the term "archetype"

into his writings, Jung had discussed the same phenomena using different theoretical terms. Beginning in 1912 with the first edition of Symbols of Transformation, Jung spoke of "primordial images", and in 1917 in the first edition of "On the Psychology of the Unconscious", he referred to "dominants" of the collective unconscious.

When Jung first utilized the term "archetype" in his 1919 paper, "Instinct and the Unconscious" (p. 133), he made it clear that he equated it with the earlier notions of "primordial image" and "dominant". At first, "archetype" was used to refer to an image or representation which portrayed a typical motif. It was a static concept which Jung described as "a figure — be it a daemon, a human being, or a process — that constantly recurs in the course of history" (Jung, 1922, p. 81). He later spoke of "types of situations and types of figures that repeat themselves frequently" (Jung, 1941a, p. 183). He also explained that besides those archetypes which are represented as human figures, there is "another class of archetypes which one could call the archetypes of transformation. They are not personalities, but are typical situations, places, ways and means, that symbolize the kind of transformation in question" (Jung, 1954a, p. 38).

The changes noted above in the use of the term "archetype" are changes in the extension of the concept, where the idea for the most part retained the same meaning, but was applied to a greater range of symbolic expressions. A second way in which this concept developed occurred with respect to its internal consistency. Although Jung repeatedly denied that an archetype was an "inherited idea", he was not always careful in his use of the term and often referred to an archetype when he really meant the symbolic expression of an archetypal form. In his 1954 paper "On the Nature of the Psyche", Jung removed all doubt about his intended use of "archetype", stating, "The archetypal representations (images and ideas) mediated to us by the unconscious should not be confused with the

archetype as such" (Jung, 1954c, p. 213). He added that this position "does not contradict ... earlier formulations; it only means a further degree of conceptual differentiation" (Jung, 1954c, p. 215).

A third change in Jung's use of the concept of archetype is a modification in the comprehension or meaning of the concept itself. This occurred through a process of generalization, as Jung employed "archetype" in a dynamic sense to refer to human actions and not just to static representations (Jung, 1955b, p. 265). As Jacobi noted, "Ultimately it came to cover all psychic manifestations of a biological, psychobiological, or ideational character, provided they were more or less universal and typical" (1959, p. 34). This aspect of the development of the concept of archetype is closely interrelated with Jung's views on the topic of instincts, which form the subject matter of the following section.

Archetypes and Instincts

Jung's ideas on instincts will be addressed here in so far as they shed light on the concept of archetype, and not as a subject in its own right. His ideas on this topic were very confusing and also changed considerably over the years.

Jung's first major attempt to define what he meant by instinctive behavior occurred in the same paper in which he introduced the concept of archetype, "Instinct and the Unconscious". He rejected three other proposed definitions as insufficient if taken by themselves: instinctive behavior as an "all-or-none" reaction, which is "a process that shows no gradation of intensity in respect of the circumstances which provoke it" (Jung, 1919, p. 129); instinctive behavior as an action "characterized by an unconsciousness of the psychological motive behind it" (Jung, 1919, p. 130); and instinctive behavior as a compulsive reaction (Jung, 1919, p. 131). Instead, Jung suggested that "only those unconscious processes which are inherited, and occur uniformly and regularly, can be called instinctive. At the same time they must show the mark of compelling necessity" (Jung, 1919,

p. 131). He added that they may or may not be associated with a conscious motive (Jung, 1919, p. 135).

Just two years later, however, in a formal definition of instinct in his book Psychological Types, Jung stated that, "Every psychic phenomenon is instinctive that does not arise from voluntary causation but from dynamic impulsion" and, "In my view, all psychic processes whose energies are not under conscious control are instinctive" (Jung, 1921, p. 451). This definition combined the ideas of instinctive behavior as an "all-or-none" reaction and as a compulsive reaction which he had earlier rejected. As a result, the concept of instinctive behavior became much broader, as the processes referred to did not need to occur regularly and uniformly in all men but included idiosyncratic and psychopathological reactions.

In a later paper, "Psychological Factors Determining Human Behaviour", Jung continued to stress the importance of compulsiveness as instinctive behavior's "most essential characteristic" (Jung, 1936b, p. 116), but also felt once again that truly instinctive behavior should be common to all men and have a "fixed and invariably inherited organization" (Jung, 1936b, p. 118). The fact that in the very next paragraph, he used the word "instinctive" to characterize a factor which does not meet the criteria of being common, regular and inherited, demonstrates his vacillation on this issue. While this topic is a complex one, Jung's inconsistent usage regarding the issue of instinctive behavior makes it extremely difficult to incorporate these ideas into a scientific theory (i.e., one that is empirically testible). Since he often did not specify which sense of instinctive behavior he meant in a given context, his inconsistent usage constitutes a serious weakness in his work and frequently forms a barrier to attempts to understand just what he meant.

Up to this point, the focus has been on the observable behavior which prompted the use of a concept of instinct. With respect to what Jung meant by an

instinct itself, he made his most definitive statement in the paper just cited, "Psychological Factors Determining Human Behaviour". He said there that he regarded the instinct itself as an "ectopsychic factor" (Jung, 1936b, p. 115), or what he later called "psychoid" (Jung, 1954c). The instinct is psychologically important, however, "because it leads to the formation of structures or patterns which may be regarded as determinants of human behaviour" (Jung, 1936b, p. 115). These structures result from "the interaction of instinct and the psychic situation of the moment. The determining factor would thus be a modified instinct .... Instinct as an ectopsychic factor would play the role of a stimulus merely, while instinct as a psychic phenomenon would be an assimilation of this stimulus to a pre-existent psychic pattern" (Jung, 1936b, p. 115). Jung called this process "psychization", and noted that "what we call instinct offhand would be a datum already psychized, but of ectopsychic origin" (Jung, 1936b, p. 115).

Jung did not state specifically whether "psychization" was merely a historical process which occurred as part of man's evolutionary development or if it is an ongoing process which happens each time instinctive behavior occurs, although other of his statements appear to support the latter interpretation. The apparent positing of two kinds of instincts, ectopsychic and psychized, raises questions as to the relationship of mind and body in Jung's theorizing which will be discussed later when the relationship between instincts and archetypes is explored.

In this initial discussion of the issue, Jung claimed that it is psychization which causes an instinct to lose its compulsiveness and thus to become capable of various applications. The process of psychization "makes it possible for the originally purely instinctive energy to be diverted from its biological application and turned into other channels" (Jung, 1936b, pp. 116-117). In his last major theoretical work on this abstract topic, "On the Nature of the Psyche" (1954c), Jung implicitly conceded that "psychization" does not explain the variability of

human instinctive behavior, but instead describes it, as he defined the psyche as that which can be brought under the influence of the will. He stated that, "The psychic condition or quality begins where the function loses its outer and inner determinism and becomes capable of more extensive and freer application, that is, where it begins to show itself accessible to a will motivated from other sources" (Jung, 1954c, p. 182).

Jung's account of the relationship between instincts and archetypes is even more confusing. At times, especially in his later work, he implied that they are two independent factors. He declared that archetypes "correspond to the concept of the 'pattern of behavior' in biology" (Jung, 1952c, p. 158), of which they represent a "special, psychological instance" (Jung, 1948e, p. 149n). They are similar to instinctual patterns of behavior in their functioning (Jung, 1956a, p. 254) and by the fact that they are "determined in form only" (Jung, 1954f, p. 79). The psychoid nature of the archetype is described as "spirit" and is "analogous to the position of physiological instinct, which ... forms the bridge to matter in general" (Jung, 1954c, p. 216).

There are two possible interpretations of this position. First, Jung might have meant that while "instinct" is an appropriate concept for biology, the notion of "archetype" fulfills an analogous function for psychology and "instinct" is not needed. A second interpretation is that while "instinct" and "archetype" refer to two different psychoid factors, both are useful in psychological theory. When Jung treated these two concepts as independent, the latter interpretation seems to more accurately reflect his views.

At other times in his work howver, Jung took other positions. A second position, which can be found from his first mention of archetypes until his final papers, is that archetypes and instincts are different factors, but instead of being similar and parallel, they are related by the fact of fulfilling complementary

functions. Jung said that instincts include "the natural impulses" while archetypes include "the dominants that emerge into consciousness as universal ideas" (Jung, 1954c, p. 218). He also stated that, "The inborn mode of acting has long been known as instinct, and for the inborn mode of psychic apprehension I have proposed the term archetype" (Jung, 1921, p. 376). An archetype is "thus the necessary counterpart of instinct (q.v.), which is a purposive mode of action presupposing an equally purposive and meaningful grasp of the momentary situation" (Jung, 1921, p. 447). Archetypes and instincts are "the most polar opposites imaginable" and "subsist side by side as reflections in our own minds of the opposition that underlies all psychic energy" (Jung, 1954c, p. 206).

A third position Jung took on this issue was that the difference between archetypes and instincts exists only for the purpose of conceptual clarification, since they are both aspects of the same phenomena. Jung clearly stated this point in the final paragraph of "Instinct and the Unconscious", saying, "In my view it is impossible to say which comes first — apprehension of the situation, or the impulse to act. It seems to me that both are aspects of the same vital activity, which we have to think of as two distinct processes simply for the purpose of better understanding" (Jung, 1919, p. 138).

From this perspective, either instinct or archetype may be regarded as theoretically more basic, and at different times, Jung implicitly argued for the primacy of each. When he took instinct as the primary phenomenon, Jung said that, "There are, in fact, no amorphous instincts, as every instinct bears in itself the pattern of its situation. Always it fulfils an image and the image has fixed qualities" (Jung, 1954c, p. 201). The instinct "cannot exist without its total pattern, without its image," which is an archetype which will "provide the occasion and the pattern" for man's activities (Jung, 1954c, p. 201). This image "expresses the nature of the instinctive impulse visually and concretely, like a

picture" and the fact that instinct is "attuned and adapted to a definite external situation ... gives it its specific and irreducible form" (Jung, 1956b, p. 282). The instinct "has two main aspects: on the one hand, that of dynamism and compulsion, and on the other, specific meaning and intention" (Jung, 1956b, p. 287).

Thus, from this point of view, archetypes "are the unconscious images of the instincts themselves, in other words, ... they are patterns of instinctual behaviour" (Jung, 1936a, p. 44). The archetype "represents the meaning of the instinct" (Jung, 1954c, p. 201) and is the "self-portrait of the instinct" (Jung, 1919, p. 136) which "determines the form and direction of instinct" (Jung, 1919, p. 137).

Jung also at other times considered the archetype to be the fundamental concept for man. He referred to the archetype as a "congenital and pre-existent instinctual model, or pattern of behaviour" (Jung, 1949, p. 315) and said archetypes are "inherited, instinctive modes of behaviour" (Jung, 1958c, p. 439) which are a result of "the differentiation of instinct in general" (Jung, 1921, p. 239). According to this conception, the archetype, "as well as being an image in its own right, ... is at the same time a dynamism which makes itself felt in the numinosity and fascinating power of the archetypal image" (Jung, 1954c, p. 211). This "dynamism" is what had previously been described as characteristic of instinct.

From the descriptions given above of the various positions Jung took on the relationship of instincts and archetypes, it is obvious that his formulations are riddled with inconsistencies and outright contradictions. An examination of the situation reveals that there are two basic issues with which Jung was struggling: the relationship between action and apprehension, and the use of biological versus psychological concepts. It is believed that a closer consideration of these two issues can aid both in isolating a consistent core meaning from the midst of Jung's tangled theorizing and in identifying the conceptual problems which prevented

him from elaborating this core meaning himself.

The first issue concerns the relationship between actions and perceptions. Jung variously saw these functions as independent, complementary and as two aspects of the same phenomenon. His most convincing position about this relationship was that made in his original paper on archetypes and cited above: namely, that "both are aspects of the same vital activity, which we have to think of as two distinct processes simply for the purpose of better understanding" (Jung, 1919, p. 138). When Jung concentrated too strongly on the conceptual distinctions which he derived from the phenomena he observed, he at times forgot their original underlying unity in the pre-reflective "lived world". Unless this basic underlying unity is kept in mind, it is very easy to posit independent "factors" which are then believed to represent ontological differentiations and not just conceptual ones.

The decision to treat action and apprehension as fundamentally linked helps to resolve the second issue regarding the use of biological and/or psychological concepts. When Jung observed typical modes of action and representation, he usually felt he needed two concepts to account for them (although sometimes he tried to employ one concept with two aspects). A plausible explanation for this decision is the fact that a biological concept of instinct was already commonly used in scientific work, but it did not readily explain the regularity of symbolic expressions for which Jung felt compelled to introduce a new concept, that of "archetype". His deference to the already established scientific concept of instinct led him to waver from his commitment to deal with psychological phenomena as a subject in its own right, requiring its own concepts.

In order to adapt the biological concept of instinct to the psychological sphere, he was forced to posit the process of "psychization" of instincts. When he had done this, he arrived at two psychological concepts: "psychized" instincts and

archetypal representations. These concepts were used to account for typical modes of action and representation, respectively. If one conceives action and representation as part of one process, however, only one psychological concept is needed, with two aspects. As described above, there were times when Jung used the notion of archetype in this sense.

A concept of archetypal expression which encompasses both the image of a situation and the dynamism of action would make the idea of a special, "psychized" instinct unnecessary. Also, one need postulate only the archetype per se to explain the observed phenomena. The positing of an "ectopsychic" instinct is both unnecessary and conceptually confusing, since a discussion of physiological changes requires concepts of a qualitatively different order from those used in psychological explanations. Jung's reluctance in this case to sever psychology's ties with more established sciences and to boldly assert the need for psychology to develop its own level of explanations led to three concepts (instinct, "psychized" instinct and archetype) where only one is needed. His attempt to adapt a biological concept to psychology, at the same time as he introduced a new, psychological concept, resulted in a hopelessly confusing and contradictory network of theoretical relationships.

If archetypes are seen as including the modes of both action and representation, the theoretical difficulties inherent in trying to relate them to a biological (or modified biological) concept of instinct disappear since the latter concept is not needed. The next issue to be considered is a critical assessment of the idea of "archetype" itself, with regard to both its scientific value and philosophical status.

Critical Assessment of the Archetype Concept

In order to be scientifically useful, it is essential that the concept of archetype be precise enough that rules of correspondence could be formulated for

translating this abstract notion into empirical terms. To take a very basic example, criteria would need to be established for the scientist to be able to determine if a given symbolic expression was, indeed, the representation of an archetype. According to Jung's guidelines, the expression would need to meet several conditions: it must be emotionally meaningful, or "numinous"; it must have both a similar form and meaning to other expressions which have been observed through the ages; direct transmission of the expression, either by tradition or education, must be ruled out; and it must represent a situation, transformation or action which is typical for human beings.

While numinosity and the question of direct transmission can be at least provisionally ascertained, the other two criteria present difficulties. In order to judge a symbolic expression's "similarity" to another expression, rules would need to be developed for evaluating "degree of similarity" and a cut-off point on this scale designated below which a given expression is judged to be dissimilar. Also, a list would need to be made of "typically human" situations, transformations and actions. While Jung suggested in a general way the kinds of situations to be included, more specific attention to detail would be necessary to provide the scientist with a practical guide to observation. A major weakness of so broad a concept as "archetypes" is that any such list would necessarily be very arbitrary.

In principle, these practical difficulties could be solved through constructing a scale of "degree of similarity" and making a list of typical situations. In this way, the scientist could focus on a limited number of archetypal factors. Before any useful work could be done, however, another practical task would need to be carried out: establishing criteria for differentiating one archetype from the others.

Jung himself addressed this issue, and found it very challenging. He believed there is "an indefinite number of motifs or patterns" (Jung, 1939d, p. 490)

and that "the changing situations of life must appear infinitely various" (Jung, 1952c, p. 294). Also, with regard to particular archetypes, "their boundaries are blurred or cut across those of other archetypes, so that certain of their qualities can be interchanged" (Jung, 1955b, p. 463). He said, "They are never clear-cut units but always have fringes which make them difficult or even impossible to delineate since they would appear not only to overlap but to be indistinct" (Jung, 1957, p. 271), and "Clear-cut distinctions and strict formulations are quite impossible in this field, seeing that a kind of fluid interpenetration belongs to the very nature of all archetypes" (Jung, 1940b, p. 179).

At times, Jung felt that the complexities were such that there could be no adequate scientific solution. He said that archetypes "overlap to such a degree and have such a capacity for combination that all attempts to isolate them conceptually must appear hopeless" (Jung, 1954g, p. 288). He found that "as soon as you divest these types of the phenomenology presented by the case material, and try to examine them in relation to other archetypal forms, they branch out into such far-reaching ramifications in the history of symbols that one comes to the conclusion that the basic psychic elements are infinitely varied and ever changing, so as utterly to defy our powers of imagination" (Jung, 1954b, p. 70).

Despite their indefinite number, indistinctness and interpenetration, however, Jung usually felt that he was justified in postulating the existence of distinct and separate archetypes. He claimed that "despite their interwovenness they do form units of meaning that can be apprehended intuitively" (Jung, 1940b, p. 179). The possible number of life situations "never exceeds certain natural limits" (Jung, 1952c, p. 294), and archetypes "are of great stability and so distinct that they allow themselves to be personified and named" (Jung, 1955b, p. 463) while possessing "an invariable nucleus of meaning" (Jung, 1954f, p. 80). Also, while "the forms which the experience takes in each individual may be infinite in

their variations, ... they are all variants of certain central types" (Jung, 1944b, p. 463).

Thus, Jung believed there is a "core meaning" underlying archetypal manifestations, although it is conceptually elusive. He stated , referring to the core of meaning, that it "may be circumscribed, but not described" (Jung, 1940b, p. 156) and that archetypes' "living meaning comes out more from their presentation as a whole than from a single formulation. Every attempt to focus them more sharply is immediately punished by the intangible core of meaning losing its luminosity. No archetype can be reduced to a simple formula" (Jung, 1940b, p. 179). In a paper a year later, he added:

> The psychologist has to contend with the same difficulties as the mythologist when an exact definition or clear and concise information is demanded of him. The picture is concrete, clear, and subject to no misunderstandings only when it is seen in its habitual context. In this form it tells us everything it contains. But as soon as one tries to abstract the 'real essence' of the picture, the whole thing becomes cloudy and indistinct. In order to understand its living function, we must let it remain an organic thing in all its complexity (Jung, 1941a, p. 182).

Thus, in distinguishing between archetypes, a consideration of the context is essential in order to determine their meaning and in that way their degree of similarity. As in constructing a scale for degree of similarity and listing typical situations, this study of the context is possible in principle. Again, though, there would need to be guidelines as to how to derive the meaning of the archetype from an examination of its form and context.

These practical steps were undertaken by Jung himself in the most minimal fashion, if at all, and they are prerequisites merely for the identification and differentiation of archetypal images from other expressions and from each other. To become part of a useful scientific theory, the relationships among archetypes themselves and between archetypes and real-life situations would need to be explored and organized in the form of laws. Thus, a great deal of conceptual and

empirical work would be necessary before the notion of archetype could be integrated into an adequately scientific theory.

It could be objected that a concept which "may be circumscribed but not described" and cannot be brought into a clear focus is not appropriate for scientific theorizing, so it is important to discuss the reasons for this elusiveness. The answer lies in the basic nature of unconscious processes. First of all, they can only be inferred and never perceived directly, so this limits the degree of precision which is possible in describing them. A second, more fundamental reason is the fact that the very nature of unconscious processes is by definition prereflective, prior to even the most basic conceptual distinctions such as that between subject and object, and is therefore only approximately captured by precisely defined abstract notions. Archetypes, understood as unconscious organizing factors, are the source of abstract terms but these terms do not exhaust the archetypes' meaning.

In some ways, the situation is similar to that of the natural sciences, for abstract concepts cannot fully capture any phenomenon other than themselves. The added complexity of conceptualizing unconscious psychic processes, however, is due ultimately to the symbolic capacities of the human psyche. Jung stressed the significance of the ability of the human mind to create symbols, which mean something more than themselves and point beyond themselves to a multifaceted meaning which has to be secondarily elaborated and constructed.

The fact that archetypes are only expressed in ambiguous symbols, combined with the fact that a true symbol is prereflective and thus not consciously created in accordance with any preconceived theoretical ideas, makes it impossible to be precise about the meaning of any one archetype. As Jung asserted, its meaning can be circumscribed, but no clear-cut notion will ever exhaust this meaning because it was not created according to any abstract

concepts. In short, the very definition of "symbol" means that it expresses an open-ended multiplicity of meanings in a single image, which cannot be done by means of strictly operationally-defined concepts. There will be a further discussion of symbols in the second section of this chapter.

To return to the objection that a concept which cannot be precisely defined is not appropriate for a scientific theory, the scientist appears to have two choices in this regard. First, he could decide that the conceptual difficulties are so great as to prevent the development of a meaningful scientific theory in this area and therefore exclude unconscious mental processes from the realm of science. A second approach could be to acknowledge the unavoidable limitations placed on his theorizing by the nature of the subject matter, and in response to set lower expectations for the kind of results which could be obtained. For example, instead of having a strict definition of a particular archetype, a range of possible meanings could be proposed. Criteria to aid in the interpretation of various contexts could then increase the precision of this range of meanings. Also, instead of a universal assertion, probabilities could be established. For example, one might say that "Eighty percent of the time, a symbolic expression with 'x' range of meanings, under 'y' conditions, represents the archetype known as 'z'". It is believed by this writer that the second approach outlined above would provide valuable scientific information which could eventually be organized into laws and a consistent theory, provided that its limitations be explicitly accepted from the start. Just because this area cannot be conceptualized as accurately as some others in the natural sciences is not a sufficient reason to ban it from science altogether.

From a philosophical perspective, Jung's views on archetypes display parallels with the work of both systems theorists and phenomenologists. With regard to the former, Jung's emphasis on examining the context of archetypal images

corresponds to the systems theorists' focus on the organization of interrelated parts within a whole for the human sciences, as opposed to the "independent elements" of the natural sciences.

Jung also conceived of archetypes as structures or organizing principles, not as substantial entities. They are factors which arrange our psychic processes into recognizable patterns prior to any intervention of consciousness. As do the phenomenologists, Jung faced the task of using the concepts of reflective thought to attempt to capture what is essentially a predisposition to a structuring process that is prereflective in nature. Since a strictly operationally-defined concept cannot do full justice to the ambiguity of the phenomena, a philosophically adequate notion of an archetype must itself be "symbolic" in the sense of having an inexhaustible meaning and not yielding to attempts to define it completely on an operational level. Like the concepts of the phenomenologists with regard to the prereflective "lived world", Jung's notion of an archetype points to and suggests the meaning of the phenomena to which it refers but cannot fully emcompass this meaning.

The Functions, Origins and Qualities of Archetypes and Archetypal Images

The functions, origins and qualities of archetypes and archetypal images for Jung are basically just more specific instances of the functions, origins and qualities of unconscious processes in general which were detailed at the end of the previous chapter. Thus, with regard to the functions of archetypes, Jung discussed their compensatory, prospective and organizing significance.

Archetypes are "balancing or compensating factors" (Jung, 1921, p. 220) which mediate "between the unconscious substratum and the conscious mind" (Jung, 1940b, p. 174). Archetypes can "influence, control, and even ... suppress the ego-personality" (Jung, 1936b, p. 122) and "intervene in the shaping of conscious contents by regulating, modifying, and motivating them" (Jung, 1954c,

p. 205). In the long run, they "mould the destinies of individuals by unconsciously influencing their thinking, feeling, and behaviour, even if this influence is not recognized until long afterwards" (Jung, 1952c, p. 309).

The constellation of an archetype:

> is the result of the spontaneous activity of the unconscious on the one hand and of the momentary conscious situation on the other, which always stimulates the activity of relevant subliminal material and at the same time inhibits the irrelevant. Accordingly the image is an expression of the unconscious as well as the conscious situation of the moment. The interpretation of its meaning, therefore, can start neither from the conscious alone nor from the unconscious alone, but only from their reciprocal relationship (Jung, 1921, p. 443).

More specifically, Jung said, "The archetype is a symbolic formula which always begins to function when there are no conscious ideas present, or when conscious ideas are inhibited for internal or external reasons" (Jung, 1921, p. 377). This may occur "when the conscious mind refuses to follow the feelings and instincts prompted by the unconscious" (Jung, 1952c, p. 304). When "consciousness deviates again and again from its archetypal, instinctual foundation and finds itself in opposition to it," there then "arises the need for a synthesis of the two positions" (Jung, 1954a, p. 40). Jung went on to say that "as the archetypes, like all numinous contents, are relatively autonomous, they cannot be integrated simply by rational means, but require a dialectical procedure, a real coming to terms with them, often conducted by the patient in dialogue form" (Jung, 1954a, p. 40). This assimilation of archetypal expressions by the conscious mind is one way in which Jung conceptualized the individuation process, and will be examined in more detail in the following chapter.

As was the case for unconscious compensation in general, compensation by archetypal images could become part of an adequate <u>scientific</u> model only when operational definitions of conscious "deviation" and archetypal "compensation" are proposed. Only in this way could more specific laws regarding the "reciprocal

relationship" between the conscious mind and archetypes be formulated and then tested empirically.

The second function of archetypes Jung identified is their anticipation of future developments. They can take over "the guidance of the psychic personality" (Jung, 1932, p. 345) and an archetype can determine "the nature of the configurational process and the course it will follow, with seeming foreknowledge, or as though it were already in possession of the goal" (Jung, 1954c, p. 209). It does this by giving "a co-ordinating and coherent meaning both to sensuous and to inner perceptions ... which then guides action along paths corresponding to this meaning" (Jung, 1921, p. 445). Archetypes are also "the source from which hints may be drawn for the solution of the problem of opposites" (Jung, 1943a, p. 120).

The prospective function of archetypes could become part of a scientific theory, since it is potentially falsifiable. This could be done by a scientist interpreting the meaning of an archetypal expression, predicting the action or behavior change to which it is leading, and then empirically checking to see if his hypothesis was confirmed or falsified.

The third function of archetypes which Jung noted is "their ability to organize images and ideas" (Jung, 1954c, p. 231). From a positive standpoint, they "underlie all thinking" (Jung, 1954g, p. 289), "determine psychic life to an extraordinary degree" (Jung, 1953, p. 519) and "preform and continually influence our thoughts and feelings and actions" (Jung, 1954f, p. 79). An archetype performs this function in that it "arranges the material of consciousness into definite patterns" (Jung, 1948e, p. 149) and "gives the stuff of experience a specific configuration" (Jung, 1921, p. 304).

Viewed negatively, archetypes are "limiting and predetermined factors" (Jung, 1958a, p. 398) which "exclude other possibilities or at any rate limit them to a very great extent" (Jung, 1921, p. 305) and "set bounds to even the boldest

fantasy and keep our fantasy activity within certain categories" (Jung, 1922, p. 81). Because of this, symbolic statements "do not vary limitlessly and chaotically, but clearly all relate to a few basic principles or archetypes" (Jung, 1952a, p. 361) and "even fantasy, the freest activity of the mind, can never roam into the infinite, ... but remains anchored to these preformed patterns, these primordial images" (Jung, 1921, p. 305).

Any empirical test of the organizing function of archetypes would require a more precise definition of particular archetypes, however, and a delimited list of possible archetypal categories, as discussed earlier. Only in this way could Jung's hypothesis of "a few basic principles" be tested, by seeing if symbolic expressions were found which did not, in fact, conform to any particular archetype. If, as is likely, such expressions were discovered, attention would need to be focussed on the conditions under which archetypal images are produced if the hypothesis of archetypes' organizing function were to be retained.

Just as Jung speculated about the origin of collective unconscious processes in general, as discussed in the previous chapter, so he attempted to account for the origin of the structural elements of these processes, the archetypes. Ontogenetically, he saw them as "congenital and pre-existent" (Jung, 1949, p. 315), and as "innate patterns" (Jung, 1952c, p. 313). As such, they are hereditary (Jung, 1954f, p. 78) and are "inherited with the brain structure — indeed, they are its psychic aspect" (Jung, 1931d, p. 31). Hence, "the newborn brain is an immensely old instrument fitted out for quite specific purposes" (Jung, 1921, p. 304) so that "man brings with him at birth the ground-plan of his nature" (Jung, 1949, p. 315).

As he did with the relation of unconscious processes with the brain, Jung was also vague and equivocal about the relationship of archetypes with the brain. He said they are the "psychic aspect" of the brain structure, and are "somehow"

connected with the brain (Jung, 1940a, p. 104), but never specified just how brain cells were supposed to be related to archetypal patterns. It would have been more consistent with his position that psychological phenomena require their own explanations, to refrain from involving the concept of "brain", which belongs to a different order of phenomena and thus expresses a qualitatively different level of explanation. Apparently, though, he had no alternative way to explain the existence of psychic predispositions without postulating spiritual entities such as a "soul". His combining different orders of phenomena, without providing any explicit way to translate concepts from one realm to the other, constitutes a serious weakness in his theorizing about the inheritance of archetypes.

From a phylogenetic perspective, Jung saw an archetype as "the product of the brain's functioning throughout the whole ancestral line, a deposit of phylogenetic experiences and attempts at adaptation" (Jung, 1921, p. 304). It is the result of "millions of years of human development" (Jung, 1949, p. 315) and is "the archaic heritage of humanity, the legacy left behind by all differentiation and development" (Jung, 1952c, p. 178).

Although he was sometimes reluctant to speculate about this issue, stating about archetypes that "if they ever 'originated' their origin must have coincided at least with the beginning of the species" (Jung, 1954f, p. 78) and even "we simply do not know the ultimate derivation of the archetype" (Jung, 1944b, p. 14), Jung did venture guesses about the origins of discrete archetypal patterns. He speculated that an archetype "can be conceived as a mnemic deposit, an imprint or engram (Semon), which has arisen through the condensation of countless processes of a similar kind. In this respect it is a precipitate and, therefore, a typical basic form, of certain ever-recurring psychic experiences" (Jung, 1921, pp. 443-444). Archetypes are "the accumulated experiences of organic life in general, a million times repeated, and condensed into types. In these archetypes,

therefore, all experiences are represented which have happened on this planet since primeval times. The more frequent and the more intense they were, the more clearly focussed they become in the archetype" (Jung, 1921, p. 400).

While most of Jung's conjectures about the origins of archetypes are purely speculative and cannot be tested scientifically, his statement about the relationship of frequency and intensity of experience to the clarity of the archetypal image is empirically falsifiable. In order to test this hypothesis, clear definitions of what constitutes any particular archetype would need to be formulated. If corroborated, this hypothesis would also help to explain the difficulty in conceptualizing the nature of particular archetypes. According to Jung's model, the theoretical difficulty should diminish with the increased universality and intensity of the situations to which the archetypes correspond.

In speculating about the origins of archetypes, Jung felt that they are "the product of constant and universal influences from without" (Jung, 1921, p. 444) so that they "correspond to certain general characteristics of the physical world" (Jung, 1943a, p. 105). They are not literal copies of external events, however, but must "be taken metaphorically, as intuitive concepts for physical phenomena" (Jung, 1943a, p. 105). The physical process arouses "subjective fantasy-ideas", and "archetypes are recurrent impressions made by subjective reactions" (Jung, 1943a, p. 79).

In addition to external influences, Jung stressed that, "The fact that the sun or the moon or the meteorological processes appear, at the very least, in allegorized form points to an independent collaboration of the psyche, which in that case cannot be merely a product or stereotype of environmental conditions" (Jung, 1921, p. 444). Thus, "We are forced to assume that the given structure of the brain does not owe its peculiar nature merely to the influence of surrounding conditions, but also and just as much to the peculiar and autonomous quality of

living matter, i.e., to a law inherent in life itself" (Jung, 1921, p. 444). Accordingly, the archetype "is related just as much to certain palpable, self-perpetuating, and continually operative natural processes as it is to certain inner determinants of psychic life and of life in general" (Jung, 1921, p. 444). Jung did not further specify the nature of the contribution made to the formation of archetypes by the "quality of living matter", however.

In order to discuss the issue of the qualities of archetypes, it is imperative to be clear about exactly what is being held to possess these properties. From Jung's descriptions, it is apparent that he was usually referring not to the attributes of archetypes themselves, but to the qualities of archetypal images, as perceived by consciousness, although at times the archetype per se was the object under scrutiny.

It is necessary to make this distinction between archetypes per se and archetypal images because "what we mean by 'archetype' is in itself irrepresentable" (Jung, 1954c, p. 214) and "archetypes are not determined as regards their content" (Jung, 1954f, p. 79). We can theorize about the concept of archetype only because it "has effects which make visualizations of it possible, namely, the archetypal images and ideas" (Jung, 1954c, p. 214) and it "is determined as to its content only when it has become conscious and is therefore filled out with the material of conscious experience" (Jung, 1954f, p. 79).

Jung said that consciously perceived symbols "are always grounded in the unconscious archetype, but their manifest forms are moulded by the ideas acquired by the conscious mind" (Jung, 1952c, p. 232). Archetypal images are created when archetypes "have been so enriched with individual memories through the introversion of libido as to become perceptible to the conscious mind" (Jung, 1952c, p. 293). Jung believed that archetypes accomplish this transformation "by availing them selves of the existing conscious material" (Jung, 1954c, p. 204) and

"by assimilating ideational material" (Jung, 1954f, p. 231). He stated that the archetype "will attract to itself the contents of consciousness — conscious ideas that render it perceptible and hence capable of conscious realization" (Jung, 1952c, p. 294).

In this attempt to explain how man can experience images which exhibit unconscious organizing principles, Jung resorted to a reification of the notion of archetypes. Instead of mere "possibilities" of ideas and "preconditions" of experience, Jung treated them as substantial entities with the power to "attract" and "assimilate" conscious ideas. By utilizing the concept of archetype in this way, Jung contradicted numerous statements he had made throughout the years about the nature of archetypes. The consequent reduction in internal consistency diminishes the scientific value of his theorizing.

By hypostatizing archetypes in this manner, Jung unwittingly slipped back into a natural scientific framework, which seeks to find a material cause for an event which is separate from the event itself. In order to be consistent with his own, psychological model, Jung would have needed to postulate archetypes' prior mode of existence as merely dispositional, and to regard the organization of symbolic expressions as a spontaneous process which is simultaneous with their inclusion in the psychic process and not in need of further explanation. The fact that symbolic images manifest an identifiable structure requires no causal explanation other than that man unconsciously cognizes in this way. The postulation of a material agent other than the individual person himself necessarily leads to a reification of whatever concept is so employed.

To return to the issue of archetypal images, Jung believed that they become conscious in two ways: "in the form of pronounced preferences and definite ways of looking at things" (Jung, 1921, CW6, p. 377), and "in the products of fantasy" (Jung, 1954f, p. 78). Jung emphasized the latter, and included in his

description of fantasy products "dreams, hallucinations, ... certain kinds of religious ecstasy" (Jung, 1946c, p. 292) and "delirious intervals ... paranoid conditions ... [and] the catatonic phases" of schizophrenia (Jung, 1939c, p. 242). He said that, "As the products of imagination are always in essence visual, their forms must, from the outset, have the character of images and moreover of typical images" (Jung, 1953, p. 518). Rational formulations are not adequate for conveying "the experience of mankind as a whole. This calls for the all-embracing vision of the myth, as expressed in symbols" (Jung, 1948e, p. 188) and in metaphors (Jung, 1940b, p. 157).

Only a symbol can be "a condensation of all the operative unconscious factors" (Jung, 1921, p. 125). Archetypal symbols are found most frequently "in the decisive moments or periods in life: in childhood from the third to the sixth year; at puberty, from fourteen to sixteen; in the period of maturity from twenty to twenty-five; in middle life from thirty-five to forty; and before death. They also occur in particularly important psychological situations" (Jung, 1939c, p. 242). Jung said, "Any difficulty, danger, or critical phase of life immediately calls forth" an archetype. "It is the most natural reaction to all highly charged emotional situations" (Jung, 1942b, p. 80). Although "it is altogether inconceivable that there could be any definite figure capable of expressing archetypal indefiniteness" (Jung, 1944b, p. 18), archetypal symbols can "represent a set of variations on a ground theme" and "are very varied structures which all point back to one essentially 'irrepresentable' basic form" (Jung, 1954c, p. 213). There will be a further discussion of symbols in the second section of this chapter.

Archetypal images and/or archetypes were described by Jung as sharing six of the seven attributes he identified for unconscious processes in general: they are autonomous, numinous, bipolar, personified, limitless and archaic. With regard to their autonomy, Jung stressed that archetypal images express "a reality

independent of the attitude of the conscious mind" (Jung, 1952c, p. 56n) and "are only very conditionally under the control of the conscious mind and for the most part escape it altogether" (Jung, 1943a, p. 108). He argued that "they are spontaneous phenomena which are not subject to our will, and we are therefore justified in attributing to them a certain autonomy" (Jung, 1952a, p. 362).

A second quality of archetypal images is their "numinosity", which Jung described as "a deeply stirring, emotional effect" (Jung, 1952b, p. 303). He elaborated the nature of the "feeling-value" of the archetypal image as "irresistible and absolutely compelling" (Jung, 1921, p. 226), and "daemonic" (Jung, 1934b, p. 251). It is "charged with immense power" (Jung, 1921, p. 317) and possesses "superior force" (Jung, 1934b, p. 252). It "is felt as an illumination, a revelation, or a 'saving idea'" (Jung, 1952c, p. 294) and "seizes upon the individual" with a "passionate intensity" (Jung, 1946c, p. 292). These images "exert a fascinating and possessive influence upon the conscious mind and can thus produce extensive alterations in the subject. One can see this in religious conversions, in cases of influence by suggestion, and particularly at the onset of certain forms of schizophrenia" (Jung, 1943a, p. 80).

A third property, ascribed to archetypes themselves, is their "bipolarity" (Jung, 1944b, p. 450), which is a corollary to the undifferentiated nature of unconscious processes. Jung stated that, "Just as all archetypes have a positive, favourable, bright side that points upwards, so also they have one that points downwards, partly negative and unfavourable, partly chthonic, but for the rest merely neutral" (Jung, 1948d, p. 226). Also, "Every archetype contains the lowest and the highest, evil and good, and is therefore capable of producing diametrically opposite results" (Jung, 1946a, p. 237).

In Jung's discussion of a fourth quality, the dissociability of unconscious processes, he asserted that the more complicated psychic structures which could

be found, such as complexes, had "the character of personalities" (Jung, 1929d, p. 35). Since complexes rest on archetypal foundations, it is not surprising that archetypes, too, are believed to be expressed in personified form.

Jung hypothesized that "archetypal figures are endowed with personality at the outset and are not just secondary personalizations" (Jung, 1952c, p. 255). He said, "They show all the marks of fragmentary personalities. They are masklike, wraithlike, without problems, lacking self-reflection, with no conflicts, no doubts, no sufferings" (Jung, 1939a, p. 286). Even though he conceded that "there is nothing in their behaviour to suggest that they have an ego-consciousness as we know it" (Jung, 1939a, p. 286), at times he claimed they are "equipped with a relative degree of consciousness and a will to match" (Jung, 1952c, p. 309) in order to account for their autonomy and purposiveness.

As discussed in the third section of the previous chapter, the best explanation Jung proposed for the autonomy and intelligence of unconscious processes was the positing of an "approximative" consciousness. This notion can adequately describe the observed phenomena without necessitating the introduction of an "unconscious ego" for which there is no evidence. With regard to unconscious purposiveness, it was also argued in the previous chapter that this phenomenon could be dealt with by positing a fundamental directedness and intentionality of all psychic processes, even unconscious ones, without requiring the notion of an "unconscious will".

With regard to archetypes being "limitless", Jung declared that they are not subject to many of the restrictions governing conscious psychic processes. He said that the archetype "possesses qualities of a parapsychological nature" (Jung, 1958c, p. 450) whereby the categories of time and space are relativized. Spatially, it "has a tendency to behave as though it were not localized in one person but were active in the whole environment" (Jung, 1958c, pp. 451-452),

while it "is timeless in comparison with our individual time-boundness" (Jung, 1940a, p. 90). It "outlives all time and change, preceding and superseding all individual experience" (Jung, 1921, p. 317). A sign of archetypal images, in turn, "seems to be the appearance of the 'cosmic' element, i.e., the images in the dream or fantasy are connected with cosmic qualities, such as temporal or spatial infinity, enormous speed and extension of movement, 'astrological' associations, telluric, lunar, and solar analogies, changes in the proportions of the body, etc." (Jung, 1934b, p. 170).

While the "timelessness" of the archetype is a relatively straightforward suggestion in the light of Jung's hypotheses concerning its origin and inheritance, the idea that the archetype is "not localized" is much more confusing. Actually, this notion was just one of the many metaphysical conjectures Jung advanced in the last few years of his life regarding the relationship of psychology and physics, including his work on synchronicity. At the time of his death, these conjectures remained in the form of metaphysical speculations, without an obvious way to relate them to empirically falsifiable scientific theorizing. These speculations are beyond the scope of this dissertation and since they do not alter his basic formulations concerning archetypes, they will not be pursued further.

A sixth characteristic of archetypal images described by Jung is their archaic nature. Jung defined as archaic "all psychological traits that exhibit the qualities of the primitive mentality", including among others "mythological parallels" and "compulsion and inability to control oneself" (Jung, 1921, p. 413). He made constant references to archetypal images as representing mythological motifs as well as to their primitive nature and their compulsiveness (Jung, 1942b, p. 80; Jung, 1936a, p. 48).

Symbols

In the previous chapters, there were discussions of how Jung applied the formal constructive method to the subject matter of unconscious processes, and then in turn unconscious processes provided the formal context for the more specific content of archetypes. Next, continuing to move down the hierarchy depicted in Figure 1, archetypes themselves were seen to consist of both a formal element, the archetype per se, and a content, their expression in symbols. Since archetypal symbols are the crucial factors in Jung's theorizing about the individuation process, an explicit study of his ideas regarding symbols will serve as a fitting introduction to the final chapter of this dissertation, which will focus on the individuation process itself. This section will be concerned with three main issues: the definition, interpretation and functions of symbols.

The Definition of Symbol

Jung's earliest discussion of symbols occurred in his 1907 paper "The Psychology of Dementia Praecox". At that time, he held a very negative view of symbols, claiming they "obscure" thought rather than clarify it and approvingly citing another writer who declared that "The symbol is a very inferior form of thought" (Jung, 1907, p. 65). He already differentiated symbols from allegories, however, which he defined as "the intentional interpretation of a thought, reinforced by images" (Jung, 1907, p. 65).

By 1913, he had begun to break with Freud's views on symbols. He rejected "the exclusively sexual interpretations which appear in certain psychoanalytic publications", stating, "Every symbol has at least two meanings. The very frequent sexual meaning of dream-symbols is at most one of them" (Jung, 1913a, p. 237).

During the next few years, Jung proceeded to differentiate his ideas on symbols from those of Freud and to develop the theoretical approach he would

employ for the rest of his career. In 1916, he characterized his "Zurich School" as "symbolistic" now attributing "a positive value to the symbol", in contrast to the "Viennese School", which "interprets the psychological symbol semiotically, as a sign or token of certain primitive psychosexual processes" (Jung, 1916a, p. 291). In another paper of the same year, Jung clarified his notion of a symbol as "an attempt to elucidate, by means of analogy, something that still belongs entirely to the domain of the unknown or something that is yet to be", unlike a sign, which "veils something everybody knows" (Jung, 1916b, p. 299).

Jung formally defined the perspective on this issue which marked all of his work from that point on in his 1921 book, Psychological Types. He stated: "Every view which interprets the symbolic expression as an analogue or an abbreviated designation for a known thing is semiotic. A view which interprets the symbolic expression as the best possible formulation of a relatively unknown thing, which for that reason cannot be more clearly or characteristically represented, is symbolic. A view which interprets the symbolic expression as an intentional paraphrase or transmogrification of a known thing is allegoric" (Jung, 1921, p. 474).

Thus, in contrast to signs, symbols have their own "intrinsic value" (Jung, 1948b, p. 246) and "one must not take them literally, but must surmise a hidden meaning in them" (Jung, 1952c, p. 7). A symbol is "an indefinite expression with many meanings, pointing to something not easily defined and therefore not fully known" (Jung, 1952c, p. 124). This "something" may be "little known or completely unknown" (Jung, 1952c, p. 222), but it "cannot be expressed otherwise than by a more or less close analogy" (Jung, 1921, p. 63n).

A sign, on the other hand, "always has a fixed meaning, because it is a conventional abbreviation for, or a commonly accepted indication of, something known" (Jung, 1952c, p. 124). Understanding a fantasy image as a sign is a causal

interpretation, where it is seen as "a symptom of a physiological or personal state, the outcome of antecedent events" (Jung, 1921, p. 432). Viewing the image symbolically is a purposive interpretation, as it is seen as "seeking to characterize a definite goal with the help of the material at hand, or trace out a line of future psychological development" (Jung, 1921, p. 432).

Jung discussed two kinds of phenomenon which symbols expressed: something "not yet knowable" and "something unknown" (Jung, 1952a, p. 441). With regard to the former, he stated that symbols are "tendencies which pursue a definite but not yet recognizable goal and consequently can express themselves only in analogies" (Jung, 1955b, p. 468). They are "expressions of a content not yet consciously recognized or conceptually formulated" (Jung, 1931e, p. 156), representing "an intuitive idea that cannot yet be formulated in any other or better way" (Jung, 1922, p. 70) and intimating "a meaning beyond the level of our present powers of comprehension" (Jung, 1922, p. 76). As examples of this kind of symbol, Jung declared, "Since every scientific theory contains an hypothesis, and is therefore an anticipatory description of something still essentially unknown, it is a symbol. Furthermore, every psychological expression is a symbol if we assume that it states or signifies something more or other than itself which eludes our present knowledge" (Jung, 1921, p. 475).

The second category of phenomenon comprises objects that are "not completely knowable" in principle (Jung, 1951a, p. 73), including the archetypes. These are phenomena which are "so far beyond the grasp of language" that they "cannot be expressed at all in any unambiguous manner" (Jung, 1954g, p. 254). Since such things as archetypes cannot be "finally explained and disposed of", it must be recognized that "even the best attempts at explanation are only more or less successful translations into another metaphorical language" (Jung, 1940b, p. 160). Thus, archetypal symbols "are ambiguous, full of half-glimpsed meanings,

and in the last resort inexhaustible" (Jung, 1954a, p. 38). Also, referring to archetypes, Jung said that "what we can above all establish as the one thing consistent with their nature is their manifold meaning, their almost limitless wealth of reference, which makes any unilateral formulation impossible" (Jung, 1954a, p. 38) and therefore requires expression in symbols.

With regard to the qualities of the symbol itself, Jung conceived it as "a complex structure made up of the most varied material from the most varied sources. It is no conglomerate, however, but a homogenous product with a meaning of its own. The image is a condensed expression of the psychic situation as a whole" (Jung, 1921, p. 442). As an expression of a "whole", the symbol is "neither abstract nor concrete, neither rational nor irrational, neither real nor unreal. It is always both" (Jung, 1944b, p. 271).

In other papers, Jung elaborated on these three aspects of the symbol. First, "by virtue of its concrete nature, [it] embraces the undifferentiated, concretized feeling, but also, by virtue of its intrinsic significance, embraces the idea, of which it is indeed the matrix, and so unites the two" (Jung, 1921, p. 446). Second, it is "neither rational nor irrational (qq.v.). It certainly has a side that accords with reason, but it has another side that does not; for it is composed not only of rational but also of irrational data supplied by pure inner and outer perception" (Jung, 1921, p. 478). Thus, "it is the essence of the symbol to contain both the rational and the irrational. It always expresses the one through the other; it comprises both without being either" (Jung, 1918, p. 18). Finally, it "unites the antithesis between real and unreal, because on the one hand it is a psychic reality (on account of its efficacy), while on the other it corresponds to no physical reality. It is reality and appearance at once" (Jung, 1921, pp. 128-129).

Interpretation of Symbols

In order to interpret a symbolic expression, it is first necessary to discover

its existence and recognize it as symbolic. Jung felt that "whether or not a thing is a symbol or not depends chiefly on the attitude (q.v.) of the observing consciousness; for instance, on whether it regards a given fact not merely as such but also as an expression for something unknown" (Jung, 1921, p. 475). If the expression is not taken literally, its "interpretation or latent meaning" (Jung, 1921, p. 430) has to be sought.

Jung identified two possible approaches to the interpretation of symbols: the reductive and constructive methods, respectively. The reductive method refers to an investigation of the latent meaning whch is "purely causal, inquiring into the psychological origins of the fantasy. It leads on the one hand to the remoter causes of the fantasy in the distant past, and on the other to ferreting out the instinctual forces which, from the energic standpoint, must be responsible for the fantasy activity" (Jung, 1921, p. 430). If this method is used, however, one should strictly speaking refer to "a 'symptom' and not ... a 'symbol'", since "these phenomena are not symbolic in the sense here defined, but are symptomatic signs of a definite and generally known underlying process" (Jung, 1921, p. 477).

Thus, Jung essentially advocated use of the constructive method for interpreting expressions regarded as truly symbolic. The constructive approach takes into account the fact that the symbol "is not only something evolved but also continually evolving and creative .... Because it is evolving, it is also preparing the future", including man's meanings, aims and intentions (Jung, 1921, p. 431). It is "not merely a sign of something repressed and concealed, but is at the same time an attempt to comprehend and to point the way to the further psychological development of the individual" (Jung, 1916a, p. 291).

Jung introduced another aspect of the interpretation of symbols by differentiating between the "objective level" and "subjective level" of interpretation. By the former, he meant that the persons or situations represented "are

referred to objectively real persons or situations" (Jung, 1921, p. 456), while in the latter, these persons or situations "refer to subjective factors entirely belonging to the subject's own psyche" (Jung, 1921, p. 472). On the subjective level, individual figures are conceived as "personified features" (Jung, 1948b, p. 266) or "relatively autonomous functional complexes in the psyche of the author" (Jung, 1921, p. 473).

Jung related these levels of interpretation to the reductive and constructive approaches described above, saying, "Interpretation on the objective level is analytic, because it breaks down the dream content into complexes of memory that refer to external situations. Interpretation on the subjective level is synthetic, because it detaches the underlying complexes of memory from their external causes, regards them as tendencies or components of the subject, and reunites them with that subject" (Jung, 1943a, p. 94).

While it makes sense to couple the objective level with the reductive method and the subjective level with the constructive method from the narrow perspective of the immediate referent of a given symbol, if one is concerned with the broader meaning or import of the symbol on a functional level, this facile identification breaks down. In fact, whether images are viewed as referring to external events or to aspects of the personality, they can nevertheless be approached by means of the reductive method and/or the constructive one. For instance, a dream about a real person may suggest constructive possibilities for future developments in the dreamer's relationship with that person, while on the other hand, one can also explore the historical origins of the dreamer's use of certain images to represent aspects of his own personality.

The practical approach Jung took to the problem of a constructive interpretation of symbols, or "hermeneutics", involved collecting "the irrational

data of the material" and then elaborating "the 'latent' rational connections which these data have with one another" (Jung, 1948d, p. 243). Applying his method "consists in approaching the material as if it had a coherent inner meaning. For this purpose, most of the data require a certain amplification, that is, they need to be clarified, generalized, and approximated to a more or less general concept" (Jung, 1948d, p. 243). More specifically, Jung stated, "The essential character of hermeneutics ... consists in making successive additions of other analogies to the analogy given in the symbol: in the first place of subjective analogies produced at random by the patient, and then of objective analogies found by the analyst in the course of erudite research" (Jung, 1916b, p. 299).

The first step in amplifying a symbol involves an elaboration by the individual himself. This may be done by asking the person to give his personal associations to the image, or setting him the task of "developing his theme by giving free rein to his fantasy. This, according to individual taste and talent, could be done in any number of ways, dramatic, dialectic, visual, acoustic, or in the form of dancing, painting, drawing, or modelling" (Jung, 1954c, p. 202). Jung called this method "active imagination".

As representations of collective archetypes, however, symbols "cannot be traced back to personal sources" (Jung, 1939c, p. 242) and therefore also require amplification from collective sources. Jung asserted that it is "absolutely necessary" to supply symbols "with a sort of context so as to make them more intelligible. Experience has shown that the best way to do this is by means of comparative mythological material" (Jung, 1944b, p. 33). He also said that "the history of religion in its widest sense (including therefore mythology, folklore, and primitive psychology) is a treasure house of archetypal forms from which the doctor can draw helpful parallels and enlightening comparisons" (Jung, 1944b, pp. 32-33).

The amplification of the symbol by the two methods described above "widens and enriches the initial symbol, and the final outcome is an infinitely complex and varied picture, in which certain 'lines' of psychological development stand out as possibilities that are at once individual and collective" (Jung, 1916b, p. 299). These "life-lines" are temporary and are represented by "points of view and attitudes that have a provisional value" for the individual's further psychological growth (Jung, 1916b, p. 301).

Often Jung felt that the entire enterprise of interpretation was unnecessary for the welfare of the individual but that it did contribute to advancing the researcher's knowledge. He said that "it does not matter that the symbolism was not clear ..., for the emotional effect of symbols does not depend on conscious understanding. It is more a matter of intuitive knowledge, the source from which all religious symbols derive their efficacy. Here no conscious understanding is needed; they influence the psyche of the believer through intuition" (Jung, 1912b, pp. 214-215). Referring to the symbol, he said, "So long as it evokes belief spontaneously, it does not require to be understood in any other way. But if, from sheer lack of understanding, belief in it begins to wane, then, for better or worse, one must use understanding as a tool if the incalculable consequences of a loss are to be avoided" (Jung, 1948e, p. 188).

The Functions of Symbols

In a very general sense, the production of collective and archetypal symbols serves to compensate the isolation of the individual man which Jung felt is "the sine qua non of conscious differentiation" (Jung, 1954e, p. 301). He said that in so far as the symbols man creates are archetypal and collective, "it can be taken as a sign that he is no longer suffering from himself, but rather from the spirit of the age. He is suffering from an objective, impersonal cause, from his collective unconscious which he has in common with all men" (Jung, 1952c, p.

292). He can see that he is enduring "the same old human problems ... in new symbolic guise" (Jung, 1952c, p. 357).

In addition to the compensating function which symbols share with unconscious processes in general, they also serve a prospective function for the individual. The symbol is " a pointer to the onward course of life, beckoning the libido towards a still distant goal" (Jung, 1921, p. 125). It "promises a renewal of life" (Jung, 1921, p. 184) and "contains possibilities for a new release of energy" (Jung, 1921, p. 259).

The ongoing accomplishment of the compensating and prospective functions of symbols is a large part of what Jung called the "individuation process". Studied more closely, symbols may be seen to contribute to the psychological growth of the individual in several ways. First, symbols provide "analogies to instinctual processes in order to free the libido from sheer instinctuality by guiding it towards analogical ideas" (Jung, 1952c, p. 227). In this way, the symbols "act as transformers, their function being to convert libido from a 'lower' into a 'higher' form" (Jung, 1952c, p. 232) by depriving the object of its value (Jung, 1921, p. 238). Second, the symbol is a "mediator" (Jung, 1921, p. 446), a "content of such a nature that it can unite the opposites" (Jung, 1921, p. 115). Symbols can be "images of the psychological development of the individuality in its successive states — a sort of preliminary sketch or representation of the onward way between the opposites" (Jung, 1921, p. 115). Third, symbols "compensate an unadapted attitude of consciousness" (Jung, 1954e, p. 302) and embrace "both conscious and unconscious" (Jung, 1921, p. 264). In this way, "the unconscious can be integrated" (Jung, 1954e, p. 348) and a "synthesis of the individual and the collective psyche" obtained (Jung, 1916b, p. 300). Fourth, as described in the first section of this chapter, symbols represent archetypes, whose assimilation entails the resolution of the fundamental issues which human

beings typically encounter during the course of their lives.

The four perspectives on the functions of symbols briefly described above form the heart of Jung's conception of the individuation process. As such, a more detailed examination of each point of view will be included in the final chapter of this dissertation, which will be devoted to the individuation process itself and which now follows.

To summarize the topics covered in this chapter, in the first section, the phenomena which led Jung to postulate the concept of "archetype" were described. Jung's definition of the term, including its organizing, dispositional and typically human qualities and its status as a hypothetical term and not a substantial entity were presented. The development of the notion of archetype throughout Jung's writings was detailed, as well as the relationship of this notion to that of instinct. Then, a critical assessment of the concept of archetype was made with regard to both its scientific value and its relation to a philosophical framework. The compensatory, prospective and organizing functions of archetypes were discussed, as well as Jung's speculations regarding their ontogenetic and phylogenetic origins and his descriptions of the qualities of archetypes and archetypal images.

The second section of the chapter was devoted to a preliminary study of Jung's concept of symbols. Symbols were defined by means of a contrast with "signs" and "allegories". Then, both theoretical and practical approaches to their interpretation according to Jung were outlined. Finally, a brief summary of the functions which symbols provide for Jung was given as an introduction to a more comprehensive examination of this issue in the final chapter of this dissertation.

Chapter 5: The Individuation Process and the Self

Jung's concept of the individuation process is central to his theoretical work in several ways. First, the events which constitute this process are the main phenomena to which Jung applied his constructive method, which was described in Chapter 2. Second, a study of the individuation process fleshes out the abstract notions of collective unconscious, archetypes and symbols which were discussed in Chapters 3 and 4. Only by examining the dynamic interactions among these concepts within the context of the individuation process can one gain a more complete understanding of their meaning in Jung's work. Third, Jung's ideas on the individuation process illustrate his views on adult psychological development. As a developmental process, individuation adds a long-term temporal dimension to the otherwise synchronic conceptions of his abstract notions by grounding them in the reality of the historical process of change.

In this chapter, there will first be a general discussion of what Jung meant by the individuation process. Next will follow a closer inspection of this process from five overlapping perspectives. First, individuation will be seen as the expression of a distinctively human "canalization of libido", whereby man develops an increasing freedom and control over instinctual urges by the creation of symbolic images. Second, it will be viewed as an ongoing attempt to overcome and/or endure the "conflict of opposites" through production of a reconciling symbol and the acceptance of suffering. Third, individuation will be discussed as a continuing effort by the conscious individual to recognize the existence of unconscious processes within himself and in this way to increase the scope of his consciousness. Fourth, individuation will be seen as the addition of the individual's "inferior psychological function" to his repertoire of skills readily accessible to conscious control. Finally, this process will be described as a series

of successive confrontations and assimilations of basic human situations and issues as represented by archetypal images. The last section of this chapter will be devoted to a consideration of the self, which Jung conceived as the goal of individuation.

The Individuation Process

In this section, there will be a brief discussion of the meaning of the concept of individuation for Jung, and some general features of the process will be described. The results of individuation will also be outlined.

Jung viewed individuation as a "purposeful and continuous process of development" (Jung, 1931e, p.161), which is "the urge and compulsion to self-realization" (Jung, 1940b, p.170) and "the complete actualization of the whole human being" (Jung, 1931e, p.160). He identified three general aspects of this self-realization: as an integration, which is the "production and unfolding of the original, potential wholeness" of the personality (Jung, 1943a, p.121); as a differentiation and the development of our "incomparable uniqueness" (Jung, 1934b, p.182); and as the working out of a productive relationship between individual and social needs, both as "an internal and subjective process of integration" and as "an equally indispensable process of objective relationship" (Jung, 1946c, p.234).

While Jung felt that the individuation process is extraordinarily difficult to describe in a comprehensive way, he did note some general features of this process. He said it "depicts itself as a fugue-like sequence of images" (Jung, 1935, p.11) which represent "the emergence of certain definite archetypes" (Jung, 1943a, p.120). It presents "a rhythm of positive and negative" (Jung, 1954a, p.38) which goes "in spirals; the dream motifs always return after certain intervals to definite forms, whose characteristic is to define a centre" (Jung, 1944b, p.29).

Jung believed that the individuation process occurs typically during the "second half of life". While the most important task of the "first half of life" is "the development of the individual, our entrenchment in the outer world" (Jung, 1931g, p.399), the older man must find through individuation "a meaning that will enable him to continue living at all" (Jung, 1943a, p.84) by discovering "in death a goal towards which one can strive" (Jung, 1931g, p.402). This may best be seen as a uniquely human ability to construct meaning, and Jung's energic "justification" of death as an entropic "goal" is both a poor analogy as well as being theoretically unnecessary.

While the individuation process is "autonomous" and "spontaneous" (Jung, 1935, p.11) and is "independent of . . . consciousness and will" (Jung, 1954e, p.341), the conscious mind must assimilate the products of unconscious fantasy. Symbols which "are produced spontaneously by the unconscious and are amplified by the conscious mind" (Jung, 1952a, p.468) can help to reconcile opposing tendencies, with the ultimate aim of an "integration of conscious and unconscious" (Jung, 1948c, p.292). Besides assimilating unconscious contents, there must also be an "assimilation of the ego to a wider personality" (Jung, 1948c, p.292) and the development of a "higher consciousness" (Jung, 1954a, p.39).

Archetypal images represent the basic human situations and issues which man must confront and assimilate in order to achieve individuation. These images occur in sequence, beginning with the "shadow" or negative side of the personality once the individual goes beyond an identification with his social role ("persona"). After this, he encounters the "anima" and "wise old man", which will be described in more detail at a later point in this chapter. Finally, there comes a "centering process" which involves the production of symbols of unity and totality which Jung called the "self".

As a result of individuation, there is an integration of the personality as

"the sources of conflict are dried up" (Jung, 1954g, p.265), although Jung stressed, "Wholeness is not so much perfection as completeness" (Jung, 1946c, p.239). There is also the "differentiation of human consciousness" (Jung, 1952a, p.469) as man becomes "the definite, unique being he in fact is" (Jung, 1934b, p.183). Finally, in the synthesis of the self, which includes the collective unconscious, man becomes aware of a "larger and greater personality maturing within us" (Jung, 1950b, p.131), including both individual and collective aspects. He is also drawn to "more intense and broader collective relationships and not to isolation" (Jung, 1921, p.448).

The Canalization of Libido

In this section, the notions of "instinct" and "instinctive behavior" will be used to refer to behavior which results from compulsion, is not under conscious control, and exhibits a very narrow range of flexibility in its outcomes. Jung argued that man transforms instinctive behavior into more flexible functioning by the creation of symbols. The symbol is able to perform this function by acting as an "analogue of the object of instinct" (Jung, 1928, p.42), and thereby deprives the object of its overriding value (Jung, 1921, p.238).

While complex functions are originally derived from instincts, the ability to develop beyond instinctual behavior is an inborn capacity, according to Jung. Instead of positing "explanatory" factors such as instincts as Jung did, however, one could more parsimoniously speak of behavior which varies along a continuum from less to more flexible in application. Then it would no longer be necessary to postulate the idea of compulsive, ectopsychic instincts per se as an additional factor.

Jung's theoretical attempt to explain how symbols widen the range of possibilities for human behavior through a "canalization of libido" relied upon an

energic model which is actually descriptive and not explanatory. There is a more detailed criticism of this model in Chapter 2. Rather than saying that libido runs on a "gradient" to a "higher" form, it would be more useful scientifically to focus on how the creation of abstract metaphors facilitates man's ability to extend the range of his behavior. This postulated relationship could be evaluated empirically if precise operational definitions of key concepts were provided.

Similarly, rather than conceiving of behavior under the control of the conscious will as being due to "disposable" or "surplus" libido, one could instead recognize three kinds of phenomena which actually range along a continuum. First, there is "instinctive" behavior per se: compulsory, with a "fixed and invariably inherited organization" common to all men (Jung, 1936b, p.118). Second, there is behavior with a more extended range of application, not strictly determined yet relatively autonomous and not initiated by a conscious will. Finally, there is behavior resulting from conscious planning and intentions, which is for the most part under the individual's voluntary control.

If one discards the concept of "instinct", there then remain two dimensions along which phenomena can vary: from more to less flexible in application, and from less to more voluntarily controllable. As was pointed out in Chapter 3, Jung did not clearly distinguish between these two dimensions, often equating "more flexible" with "more voluntary", since voluntary processes are also more flexible than involuntary ones. Jung's failure to differentiate between these dimensions helped to obscure one of the fundamental phenomena he recognized: that psychic processes can display a remarkable flexibility without and prior to the intervention of the conscious will; that is, they do so as unconscious processes. Voluntary control of behavior is a further stage of development leading to an even greater flexibility, although it, too, has its limits.

Symbol-formation is a process which by its own action increases flexibility,

since objects can then be taken not only literally but also metaphorically. According to Jung's hypothesis, the creation of analogies also facilitates the flexibility of behavior associated with these analogies. It is here contended that this facilitation occurs unconsciously, i.e., that it is not deliberately planned and executed. Jung's conceptual confusion probably resulted from the fact that once they are created, symbols are more easily manipulated by the conscious mind than are concrete objects and thus enhance the development of conscious control, or will, just as they help increase the flexibility of behavior independent of conscious-ness. The important point is that symbols can lead to increased flexibility without the aid of conscious intention, although they are also invaluable in the development of the will.

The phenomena of increased flexibility of behavior and the development of the will are integral parts of the individuation process. First of all, the symbols which are produced during the individuation process are instrumental in assisting the aging person to make the transition from the "natural aim" and concrete objects of the first half of life to the "cultural aim" and metaphorical meanings of the second half of life. If the individual can grow from a literal conception of death as the cessation of life to a symbolic view of death as a goal and the fulfilment of life, he is rewarded by the opening up of a myriad of possibilities for meaningful experiences in the second half of life which a literal perspective would have denied him.

With regard to the will, it is imperative that the individuated man develop his conscious control over his behavior to its limits. This involves the reciprocal task of exercising control wherever he can and both recognizing and accepting the limits of this control. Only if both parts of this task are accomplished will the man succeed in achieving individuation.

Jung's views on the role of the conscious will in individuation are very

vague and from an empirical standpoint not very beneficial. While the part played by the will itself could be assessed by observing to what extent an individual carried out his stated intentions, the fact that a significant part of the enterprise is held to be a spontaneous manifestation of unconscious psychic processes beyond the influence of the will makes the task of falsification much more difficult. If Jung had described some more specific conditions under which unconscious processes become activated or take a particular form, a start might have been made toward a truly scientific theory. As it stands, however, apart from the very general issues of compensation for conscious one-sidedness and the union of opposite tendencies, which will be discussed in the following section, Jung advanced no theory of unconscious motivation appreciably different from the idea of development itself. Without more attention to the details and mechanisms of such development, though, Jung's ideas on this subject remain too abstract and vague to be scientifically useful except as a descriptive overview.

The Conflict of Opposites

Jung believed that prior to conciousness, there is an "original unity" (Jung, 1921, p. 112) in unconscious processes. Then, "The separation into pairs of opposites is entirely due to conscious differentiation" (Jung, 1921, p. 112) and is followed closely by the "conflict of repression" (Jung, 1916b, p. 285) where the individual attempts to repress the side to which he is hesitant to admit. Repression leads, however, either to "stagnation" (Jung, 1943a, p. 64) or to "enantiodromia", which is "the emergence of the unconscious opposite in the course of time" (Jung, 1921, p. 426).

Jung believed that a solution to the conflict which arises when one becomes aware of the previously unconscious tendency is not possible through rationality or willpower (Jung, 1938, p. 21). Instead, one must proceed by

"systematically withdrawing attention (libido) both from external objects and from interior psychic states, in a word, from the opposites" (Jung, 1921, p. 202). While Jung again relied upon an energic model to describe this process, it can alternatively be seen as turning one's attention away from a direct focus on the conflict and learning how to facilitate the coming into awareness of unconscious processes.

Unconscious processes "reveal a nature that exhibits the constituents of one side as much as the other; they nevertheless belong to neither but occupy an independent middle position" (Jung, 1921, p. 113). They are manifested both as fantasms and as "reconciling symbols." Fantasms can be "mediating products" between the opposites when the individual elicits a sequence of fantasy-occurrences in which he actively participates. The "reconciling symbol", which may be a component of a fantasm, expresses an archetype and can form "the middle ground on which the opposites can be united" (Jung, 1921, p. 479).

The "solution" afforded by unconscious fantasy activity must be repeatedly applied as the individual goes through life. Also, conflict is never overcome once and for all. In essence, the best that can be achieved is that the conflict of opposites remains but the individual's attitude towards the conflict changes. As Jung described it, "What, on a lower level, had led to the wildest conflicts and to panicky outbursts of emotion, from the higher level of personality now looked like a storm in the valley seen from the mountain top" (Jung, 1938, p. 15). The end result is "a personality that suffers only in the lower storeys, as it were, but in its upper storeys is singularly detached from painful as well as joyful happenings" (Jung, 1938, p. 46).

Evaluated critically, Jung's notion of a "conflict of opposites" could be valuable scientifically if it were explicitly restricted to an appropriate range of phenomena. Instead of clearly defining the limits of applicability of this concept,

however, Jung elevated it to the status of a metaphysical principle, referring to it as a "fundamental law" without demonstrating how this "law" could be falsified, even in principle.

In order for the concept of opposites to be scientifically beneficial, Jung would need to restrict its use to those fundamental human conflicts which actually do involve opposition, and where repression and attempts at rational solutions are ineffective. Employed in this fashion, this concept would characterize the individual's struggle with just those collective issues which together constitute the individuation process.

More specifically, it would be necessary to make clear exactly which conflicts are hypothesized as containing opposites which cannot be reconciled rationally. If this were done, it would be possible to make empirical tests of many of Jung's assertions concerning the resolution of these conflicts. It could be determined, for example, which conflicts could be solved by an effort of will, which by rational means, which by production of a "reconciling symbol" and which only by "transcending" the conflict by means of a change in attitude.

From a philosophical point of view, Jung's idea of the "conflict of opposites" derives much more from the humanities than from the natural sciences. The sources he himself referred to included Eastern philosophy, classical theology, alchemy and literature. Given this background to the concept, it is not surprising that it does not exhibit the clarity, precision and empirical links which are more characteristic of scientific notions. The idea of a pair of opposites transcended by a third element is extremely basic and has many parallels among theorists who have attempted to conceptualize the nature of development. Jung's thoughts have links with the dialectical tradition in philosophy, including the work of Hegel and Marx, and with biological concepts about adaptation, including Piaget's notion of equilibration.

Relations Between Conscious and Unconscious Processes

As two of the most important "opposites," conscious and unconscious processes provide a more concrete illustration of the highly abstract "conflict of opposites" discussed in the previous section. Jung believed that consciousness slowly arises from an "original unity" (Jung, 1921, p. 112) of unconscious processes.

With the development of consciousness, the original identity of subject and object in unconscious mentation is replaced by what Jung called "projection", which he defined as "the expulsion of a subjective content into an object" (Jung, 1921, p. 457). He felt this is a typical fate of unconscious contents. At the same time, consciousness becomes "heightened by an inevitable one-sidedness" (Jung, 1938, p. 13), while its increasing separation from its unconscious roots leads to alienation (Jung, 1944b, p. 58) and neurosis (Jung, 1935, p. 20).

A common reaction to the discovery of the existence of unconscious mental processes is an attempt to immediately repress or suppress the strange, frightening and often unpleasant contents. If we deny the existence of these autonomous systems, however, "then the effect which they still continue to exert can no longer be understood, nor can they be assimilated to consciousness. They become an inexplicable source of disturbance which we finally assume must exist somewhere outside ourselves" (Jung, 1938, p. 36). There may ensure neurotic symptoms or even psychosis.

Since on the positive side these unconscious processes can also provide a "regulating counteraction" to conscious one-sidedness (Jung, 1916c, p. 79) and act as the "creative matrix of the future" (Jung, 1952c, p. 301), one must integrate and assimilate unconscious contents. Jung called the process of accomplishing this goal the "transcendent function", since it is a "union of conscious and unconscious contents" (Jung, 1916c, p. 69). He explained, "It is a process and a

method at the same time. The production of unconscious compensation is a spontaneous process, the conscious realization is a method" (Jung, 1939d, p. 489). As described for the union of opposites, this process best occurs by means of fantasies and symbols, which actively concretize unconscious processes.

Once unconscious processes are allowed to become conscious, there are further obstacles to overcome. A failure to distinguish contents originating in the unconscious from the products of conscious thought leads to what Jung called "psychic inflation", which is "an extension of the personality beyond individual limits" (Jung, 1934b, p. 152). A second possible reaction is "negative inflation" or feelings of inferiority in the face of the power of unconscious processes. If the ego is not strong enough, it may even be weakened or dissolved by "the invasion of unconscious contents" (Jung, 1954e, p. 322).

To successfully assimilate unconscious contents, the individual must "learn to differentiate what is ego and what is non-ego" (Jung, 1943a, p. 83) and separate himself from the unconscious "by putting it clearly before him as that which he is not" (Jung, 1943a, p. 83). Also, he must "make the sharpest possible demarcation between the personal and the impersonal attributes of the psyche" (Jung, 1943a, p. 104).

Conscious involvement transforms the unconscious process from a "purely natural process without design" to one with a "potential directedness" (Jung, 1934b, p. 244). At first, the individual must put his "media of expression at the disposal of the unconscious content" (Jung, 1916c, p. 85). When this has generated fantasy material, one must concentrate on it to bring about an "enrichment and clarification" of this material (Jung, 1916c, p. 82) or give it "visible shape" by means of plastic materials (Jung, 1916c, p. 82). The next step is either "creative formulation" which condenses the motifs into "more or less stereotyped symbols" (Jung, 1916c, p. 84) or "an intensive struggle to understand the meaning of the

unconscious product" (Jung, 1916c, p. 84). Throughout, "mere self-observation and intellectual self-analysis are entirely inadequate" (Jung, 1916c, p. 81) as one must "experience them to the full" (Jung, 1934b, p. 225). There ensues an "inner dialog" (Jung, 1916c, p. 89) and a "running commentary" on unconscious processes (Jung, 1955b, p. 496).

According to Jung, the successful assimilation of unconscious contents results in a basic "change of personality" (Jung, 1934b, p. 231) in which there is "an integration or completeness of the individual, who in this way approaches wholeness but not perfection" (Jung, 1955b, p. 428). There is a "widening of consciousness" (Jung, 1955b, p. 253) and a decrease in the danger of unconscious processes (Jung, 1931e, p. 152). There must always be a "fresh adaptation" (Jung, 1916c, p. 73), however, to "sustain the individuality he has achieved" (Jung, 1916b, p. 302).

As can be seen from the above discussion, much of Jung's treatment of this perspective on individuation was essentially descriptive and not explanatory. As was characteristic of most of his theorizing, he was often vague about the meaning of his terms and didn't spell out precisely either their relationship to each other or to observable events, nor did he usually formulate his discoveries in the form of universal laws. Jung's observations covered a wide range of phenomena in a new field of investigation, however, and are not in principle unscientific. On the contrary, they provide a foundation which could be made more precise and tied to empirical events as steps on the way to constructing a useful scientific theory. If they are approached as a pioneering attempt to cover a broad terrain on a descriptive level rather than as a well-developed theory, Jung's efforts in this area can be better appreciated both for their own intrinsic value and for their potential for elaboration.

In summary, Jung's writings in the area of assimilating unconscious

contents are rich in their descriptions of interesting and significant phenomena and can serve as a framework for scientific inquiry if they are appropriately fleshed out. In order for this to happen, however, more precise definitions of terms would be needed and rules of correspondence to link these terms with observable phenomena would be indispensable. Only then could relationships between particular events be organized into explanations and ultimately into scientific laws.

The Development of the Inferior Function

In this context, the word "function" for Jung means "a particular form of psychic activity that remains the same in principle under varying conditions" (Jung, 1921, p. 436). He postulated two "rational" functions, thinking and feeling, and two "irrational" ones, sensation and intuition.

Thinking, according to Jung, "brings the contents of ideation into conceptual connection with one another" (Jung, 1921, p. 481), while feeling is a process in which the individual imparts to a conscious content "a definite value in the sense of acceptance or rejection" (Jung, 1921, p. 434). Sensation is "perception mediated by the sense organs and 'body-senses' (kinaesthetic, vasomotor sensation, etc.)" (Jung, 1921, p. 452). Intuition is "perception of the possibilities inherent in a situation" (Jung, 1931h, p. 141) or "perception of unconscious psychic data originating in the subject" (Jung, 1921, p. 453).

Jung conceptualized the four functions as two pairs of opposites: thinking is the "opposite" of feeling, while sensation "opposes" intuition. He believed that the cultural pressure towards specialization leads to a differentiation of a "superior or main function" (Jung, 1948d, p. 238) at the expense of one (or more) "inferior" functions, generally the opposite of the superior function.

Since the inferior function can "irrupt spontaneously into consciousness"

with "sometimes disturbing effects" (Jung, 1955b, p. 208) and since it also contains "all sorts of significant relationships and symbolical meanings" (Jung, 1948e, p. 165), it is important to integrate it into consciousness.

In order to evaluate the scientific worth of Jung's views in this area, his ideas on the four functions would need to be operationally defined. Only then could these ideas be empirically tested. Until then, this perspective on individuation, as with the others which have been discussed, remains suggestive of further work in the area and thus evidences a potential for becoming part of a valuable scientific theory.

The Assimilation of Archetypes

In this section, there will be a focus on four concepts which represent the issues confronting the individual in a quasi-sequential order on the path to individuation. For Jung, this journey begins with the phenomena of collective consciousness and then includes first personal and then collective unconscious contents in an ever-deeper coming to terms with one's own psyche. The theoretical notions corresponding to successive stages of this process are the persona, shadow, anima and wise old man. An examination of these concepts now follows.

The Persona

For Jung, the "persona" is roughly equivalent to an individual's social role. It is "a kind of mask, designed on the one hand to make a definite impression upon others, and, on the other, to conceal the true nature of the individual" (Jung, 1934b, p. 203). If the individual indentifies too strongly with his persona, "far too much of our common humanity has to be sacrificed" (Jung, 1934b, p. 167), and he becomes vulnerable to the intrusion of repressed unconscious processes, so he must learn to expand his view of himself to include his unconscious processes as

well as his persona. Until he does so, he has not fully developed the psychological integration and differentiation which is needed for individuation.

Jung's focus on the function of roles as concealing the "true nature of the individual" rather than revealing something about the individual is a philosophical issue. It could easily be argued that not only does the persona reveal part of the "true nature" of the individual, but also that the individual's personality exists at all only in the context of a real or fantasized social structure.

The Shadow

The shadow for Jung is the "inferior part of the personality" which also contains "the insufficiently developed functions and the contents of the personal unconscious" (Jung, 1943a, p. 313n) in addition to "unpleasant qualities." If the shadow is repressed, it "continues in the unconscious and merely expresses itself indirectly and all the more dangerously" (Jung, 1955b, pp. 365-366). It also contains positive attributes which can counter conscious one-sidedness. For both these reasons, it is important to assimilate it into consciousness.

There is no "comfortable" solution to the struggle with one's urges, as it possesses the same form as that described earlier in the section on the conflict of opposites. More specifically, one must still continue to live and suffer in conflict with his impulses, taking responsibiity for them and not denying them, and trying to discipline them and to express them constructively. He can to some extent transcend this conflict by putting it in perspective as a universal human problem, however, but he must meet this fundamental dilemma directly rather than running from it.

In order for the concept of the shadow to be scientifically useful, how it is represented in symbols would need to be operationally defined so that an investigator could distinguish its presence from that of another archetype. Also, Jung's referring to the shadow as an "archetype" is inconsistent with his reserving

use of the archetype concept for collective as differentiated from personal unconscious processes.

The Anima

The phenomena Jung included under the term "anima" were very varied, but most revolved around issues related to the experience of the "opposite sex", on both an internal and external level. A first way that Jung employed this concept referred to a "function of relationship to the unconscious" (Jung, 1938, p. 42), and more specifically to man's collective experience of his unconscious femininity. Jung explained the feminine nature of the anima as being due its character as complementary to a male's masculine persona and as "a psychic representation of the minority of female genes in a man's body" (Jung, 1940a, p. 30).

Besides using the term anima to designate man's predisposition to experience his own unconscious femininity in a way similar to that of all men, Jung utilized this concept in a second way, to refer to man's aptitude to experience women in a collective way. He said this aptitude is a deposit of "all our ancestral experiences" with women (Jung, 1934b, p. 200). This archetype is first actualized in the mother, and then transferred, "via the sister and similar figures, to the beloved" (Jung, 1944b, p. 70n).

A third sense of the concept of anima for Jung was as the "archetype of life itself" (Jung, 1954a, p. 32).

As is the case with the shadow, if the anima is not dealt with directly, it "is driven into indirect and purely symptomatic manifestations" (Jung, 1934b, p. 213). It then demonstrates a "partial autonomy of function" (Jung, 1934b, p. 201) and is expressed symbolically in "personified form" (Jung, 1951a, p. 13). It is because the anima is personified that "she is so easily projected upon a woman" (Jung, 1934b, p. 207), who becomes "the object of intense love or equally intense

hate (or fear)" (Jung, 1921, p. 471). In addition to affecting man's external relationships, an unassimilated anima also produces "unwanted and unwelcome moods and emotions" (Jung, 1934b, p. 240) which represent his unconscious femininity.

Jung said that the assimilation of the anima typically occurs after the shadow "is recognized and integrated" (Jung, 1954d, p. 270n). In attempting to assimilate the anima, the first step is "objectivation", where it is seen "as a personality" (Jung, 1934b, p. 211). Then one must "address personal questions to her" (Jung, 1934b, p. 212) and after listening carefully, one must criticize this material conscientiously (Jung, 1934b, p. 213). Finally, man must be sure to "distinguish himself from his anima" (Jung, 1934b, p. 206), which does not belong to one's ego.

Jung explained that when, "as the result of a long and thorough analysis and the withdrawal of projections, the ego has been successfully separated from the unconscious, the anima will gradually cease to act as an autonomous personality and will become a function of relationship between conscious and unconscious" (Jung, 1946c, p. 295). The individual must realize, however, that this "was not a victory of the conscious over the unconscious, but the establishment of a balance of power between the two worlds" (Jung, 1934b, pp. 241-242).

In general, Jung's theorizing with this term manifests the same strengths and weaknesses as appear in the rest of his work. His ideas on the anima lack conceptual clarity, as evidenced by his inconsistent usage of the term, its vague relationships with other theoretical terms, and his overwhelming propensity towards reification. His work in this area is also markedly lacking in specific statements of just what qualities the various aspects of the anima as an archetype refer to, as well as precise correspondence rules to link his theoretical concepts with observable phenomena. There is no evidence of substantiating research, and

in fact, the very form of his hypotheses, with their stress on "innate potentials", makes them difficult to falsify, although this could be done if appropriate precautions were taken to make falsification possible.

On the positive side, Jung's discovery that the concept of the anima can serve to link man's unconscious femininity with his perceptions of women through the process of projection is a noteworthy accomplishment, due to the central position of assimilating these unconscious characteristics in man's path to individuation. It is a rich and complex topic regarding which Jung was a pioneering explorer. If his ideas could be given more clarity and precision, and linked to observable phenomena, there would be numerous areas opened up for empirical research and the eventual construction of scientific laws.

The Wise Old Man

In assimilating the anima, if the individual believes that he has in this way appropriated the power associated with unconscious processes to himself, he unwittingly identifies with the "mana-personality" or "wise old man," which is another archetype of the collective unconscious. Jung believed this identification is a typical occurrence, however.

The wise old man archetype is the "archetype of meaning" (Jung, 1954a, p. 32) and "the archetype of the spirit" (Jung, 1954a, p. 35). Identification with this archetype or concretization of it in the form of a God in heaven both result in stunted psychic development, according to Jung. If man can avoid both of these extremes and consciously realize the contents specific to this archetype, there follows "the first genuine sense of his or her true individuality" (Jung, 1934b, p. 247).

In his early work on this concept, Jung focussed on the power associated with the expression of this archetype, as it appears to represent the universal feeling of mastery to which Jung believed man is predisposed after successfully

accomplishing a difficult task. Jung provided some general guidelines for the recognition of symbolic images of this archetype, but more specific criteria for identifying archetypal representations would be needed to conduct empirical research in this area.

In relating this archetype to the issues of "meaning" and "spirituality," Jung was extremely vague. Unless there was a further elaboration of just what is meant in this regard, there is minimal scientific value in such a characterization of the wise old man.

The Self

Jung's mature ideas on the concept of the self can be addressed in a general way as they relate to three basic perspectives: the integration and differentiation of the personality and the issue of the individual and collective aspects of the self.

With regard to integration, Jung defined the self as the "totality of the psyche" (Jung, 1955a, p. 389), including both "conscious and unconscious processes" (Jung, 1951a, p. 189). As a totality, the self is the "container and organizer of all opposites" (Jung, 1946c, p. 319). The self expresses both the conflict between opposite qualities or impulses and their inner unity. In uniting the conflicting opposites by means of symbols, the self is the "archetype of wholeness" (Jung, 1951a, p. 40).

Since the self includes unconscious components, it possesses "an element of transcendence" (Jung, 1958a, p. 410). The ego is "the only content of the self that we do know" (Jung, 1934b, p. 252); therefore, any theoretical statement about the self as a whole is necessarily a "postulate" (Jung, 1921, p. 460), a "construct that serves to express an unknowable essence which we cannot grasp as such" (Jung, 1934b, p. 250).

With regard to the differentiation of the personality, Jung declared that the self is also "the centre of personality, a kind of central point within the psyche, to which everything is related, by which everything is arranged" (Jung, 1941a, p. 357). Thus, from this perspective, the self is an archetype which consists in an unconscious predisposition to organize experiences around a central point. This center of the personality "no longer coincides with the ego, but with a point midway between the conscious and the unconscious" (Jung, 1934b, p. 234). The development of this center "ensures for the personality a new and more solid foundation" (Jung, 1934b, p. 234).

As a consequence of this shift in the "centre of gravity" of the personality (Jung, 1929a, p. 49), there are new roles for the different parts of the personality. The ego is " 'replaced', but without the connotation of having been 'deposed'. It is as if the guidance of the personality had passed over to an invisible centre" (Jung, 1938, p. 52). The self is sensed as something "to which the ego is neither opposed nor subjected, but merely attached, and about which it revolves very much as the earth revolves around the sun" (Jung, 1934b, p. 252). To become truly individuated, the individual must neither oppose nor surrender to his unconscious processes, but accept them as external boundaries to his freedom while exercising his will to the fullest extent possible within these limits.

As a totality which includes both consciousness and the collective unconscious, the self accordingly exhibits both individual and collective aspects. On an intrapsychic level, as "the essence of individuality it is unitemporal and unique; as an archetypal symbol it is...universal and eternal" (Jung, 1951a, p. 63). With regard to the external issue of the individual's relationship with society, individual problems, while remaining unique, are seen as separate from those of other men but as part of mankind's common experience, as conflicts are experienced as, "Not my sorrow, but as the sorrow of the world; not a personal isolating pain, but a pain

without bitterness that unites all humanity" (Jung, 1931h, p. 150).

Jung said the self is manifested "in the form of spontaneous or autonomous symbols" of wholeness (Jung, 1951a, p. 31) and claimed it is "characterized by a phenomenology which is always repeating itself and is everywhere the same" (Jung, 1944b, p. 175). Some of the most common ways it may be expressed are as abstract or "geometrical structures containing elements of the circle and quaternity" (Jung, 1951a, p. 224), as human figures, animals and even plants.

The self "can only be described in antinomial terms" (Jung, 1951a, p. 63), since it contains all opposites. In addition, it displays several qualities common to all unconscious phenomena: its autonomy, numinosity and limitlessness. The functions of the self also correspond to those of unconscious phenomena in general, including compensation, where it resolves chaos into unity; organization, by creating a center to which everything is related; and a prospective function as "a point of departure, the fertile soil from which all future life will spring" (Jung, 1934b, p. 202).

While the urge to individuation may be "forced upon us against all our conscious strivings" (Jung, 1951a, p. 69), conscious participation in this process is crucial. There must be a "conscious and deliberate self-surrender" (Jung, 1954g, p. 258), as "the ordinary, empirical man we once were is burdened with the fate of losing himself in a greater dimension and being robbed of his fancied freedom of will" (Jung, 1948e, p. 157) by recognizing the transcendence of the self. During this process, "The experience itself is the important thing, not its intellectual representation or clarification" (Jung, 1955b, p. 545). One must also resist the urge to identify with the self, as "the ego loves to think itself the whole man and therefore has the greatest difficulty in avoiding the danger of inflation" (Jung, 1958a, p. 380).

Jung appeared to state in various places throughout his writings both that

the self "always" existed and that it is gradually constructed. It is contended here that this confusion is a result of Jung's failure to distinguish between three different usages of the term "self". First, considered as the totality of psychic processes, the self was "always there" (Jung, 1954g, p. 263). Second, as an archetypal predisposition to organize experiences around a central point, the self has an "a priori existence" on an unconscious level (Jung, 1940b, p. 165). Finally, in Jung's use of the self to refer to the symbols representing this archetype, it is these symbols which appear "more and more distinctly and in increasingly differentiated form" (Jung, 1944b, p. 211).

Jung also appeared to vacillate on whether the assimilation of the self is a goal which can be achieved or only an anticipation of "a wholeness which is, in principle, always just beyond our reach" (Jung, 1946c, p. 319). To resolve this apparent contradiction, one can differentiate among the various results of individuation. A new attitude and the appearance of symbols of the self can be accomplished, once and for all. The achievement of "wholeness" and "differentiation" are matters of degree, however. There is always room for development in this area and consequently it is a continuing task of the individual.

Jung's use of the same term, the self, to refer to two essentially distinct phenomena is theoretically extremely confusing. While it is understandable why he would employ this term for the totality of psychic phenomena, it would be helpful to have a separate concept to refer to the archetypal predisposition to organize psychic material around a center of the personality. If there were two terms instead of one, much less conceptual confusion would result and the internal consistency of Jung's ideas would improve.

In his writing on the individual and collective aspects of the self, Jung's use of the term "self" for the archetypal predisposition, its symbolic representation and for the self as a totality is needlessly confusing. Thus, it is the archetype

which is universal and eternal, while its expression is unitemporal and unique. Also, in so far as the self as a totality includes all psychic processes and structures, it is both individual and collective.

The postulation of the self as a universal archetype is scientific in that it can be falsified empirically, given adequate guidelines for recognizing its symbolic representations. While Jung did give extensive examples of such symbols and even summarized his findings several times, more specific criteria for differentiating representations of the self from those of other archetypes would be necessary to test his hypothesis. This is particularly true in the area of the images of human figures, which could easily represent the wise old man as well as the self.

Conclusion

A study of the individuation process in its context highlights Jung's major contributions to psychology. His commitment to psychology both as a science and as a subject in its own right led him to focus on the constructive method, which could be applied to the uniquely human issues of meaning and intentionality. The perspective provided by this method pervaded his work on the individuation process.

Jung's theorizing was concerned with the profound ways in which unconscious processes affect our daily lives, which he felt could best be understood by his constructive method. He was also interested in the way these processes are structured, particularly in the most basic and universally human psychic predispositions he called archetypes. In order to fully develop himself as a human being, Jung believed that man must recognize, confront and accept the fact that his conscious freedom is severely limited by mental processes of which he has no direct awareness and over which he can exert little control. In doing so, however, Jung was sure man would discover that his conscious personality could be immeasurably enriched and stabilized by "rediscovering" its unconscious origin and continuing foundation.

Jung fully appreciated the central role of symbol formation in self-realization, as the symbol most fully captures the manifold meanings and possibilities inherent in unconscious processes. Because of its richness and inability to be exhausted by operational definitions, the symbol is able both to reconcile conflicts which defy strictly logical solutions and to represent the most basic, archetypal situations faced by all men in their journey through life.

In Jung's view, the most fundamental issues which must be confronted are external ones of mastery of the environment and reproduction in the first half of

life and an internal construction of meaning and development of self-awareness in the second half of life. Man must first learn not to identify solely with his social role and then to recognize and accept his disavowed and undeveloped qualities. Finally, he must come to terms with the limits of his own power and freedom through developing his consciousness of his surroundings, both internally and externally. He must realize the fact that to a great extent his psyche is governed by processes over which he has little or no control but he must do so with an attitude of then being able to set more realistic and attainable goals, instead of fearing this will mean a total loss of his autonomy. Externally, by coming to grips with his mortality and the fact that he is one of many, he can discover a transcendent meaning by experiencing his participation in a process which extends far beyond himself as an individual. Again, he must react not as if this proved his own inferiority but he should allow himself to be inspired and encouraged by the feeling of communion with the rest of mankind and the universe as a whole. Man's struggle with and hard-fought progress in these tasks is what Jung called "self"-realization.

From a scientific perspective, Jung's work was flawed by inconsistencies, vagueness, reification and a pervasive lack of attention to translating his concepts into empirically observable form. His thoroughly modern philosophical and abstract methodological approach to psychology, however, in combination with the identification and pioneering investigation of some of the most basic phenomena and situations of adult psychological development, more than outweighs the weaknesses of his theoretical work. It remains for future psychologists either to flesh out the innumerable possibilities for further conceptual and empirical research Jung's writings suggest, some of which have been mentioned in this dissertation, or to incorporate his insights and discoveries in another, more scientifically useful theory.

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