CONSTRUCTING A MIND

A New Base for Psychoanalytic Theory

ANTONIO IMBASCIATI
Translated by Philip Slotkin

Constructing a Mind

In this book, Professor Imbasciati has built an impressively detailed picture of what he calls the 'protomental' processes, which renders intelligible much that has hitherto been obscure in our understanding of the deepest levels of mentalisation. This is an important book which helps to link psychoanalytic understanding with the wider field of psychology in general.

David M. Black, British Psycho-Analytical Society

Constructing a Mind draws on psychoanalytic theories of mind and recent developments in cognitive science to present the protomental system, a new and original explanatory theory of the development of the human mind.

This book aims to move psychoanalytic theory away from its origins in Freud's theory, toward a model which gives priority to cognition and memory. This, Antonio Imbasciati argues, will make possible a successful and productive integration of psychoanalysis with other areas of psychology. Subjects covered include:

- The mind as an information-processing system
- Constructing the system: from fetus to baby, child, and finally adult
- The caregiver relationship as a decoding system for information processing
- The paranoid-schizoid metabolism of information
- Memory of functions and memory traces of affects
- Internal information generated by the system
- The depressive position and learning to know
- Reparation and thought

This thoughtful and thorough account of cognitive development provides a conceptual framework that succeeds in making some of the more complex areas of psychoanalytic theory more intelligible.

Constructing a Mind will be of great interest to psychoanalysts, psychotherapists and cognitive psychologists, especially those with an interest in neuropsychology and neonatal development.

Antonio Imbasciati is Professor of Clinical Psychology at the Faculty of Medicine and Surgery, University of Brescia. He is a member and training analyst of the Italian Psychoanalytical Society (SPI) and of the International Psychoanalytical Association (IPA). www.imbasciati.it

Constructing a Mind

A new basis for psychoanalytic theory

Antonio Imbasciati

Translated by Philip Slotkin

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

Italian edition entitled *Nascita e costruzione della mente: La teoria del protomentale* © 1998 by UTET Libreria Srl, Turin

This edition published 2006 by Routledge
27 Church Road, Hove, East Sussex BN3 2FA
Simultaneously published in the USA and Canada
by Routledge
270 Madison Avenue, New York, NY 10016

Routledge is an imprint of the Taylor & Francis Group, an informa business

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
Imbasciati, Antonio.
[Nascita e costruzione della mente. English]
Constructing a mind: a new basis for psychoanalytic theory /
Antonio Imbasciati; translated by Philip Slotkin
p. cm.
Includes bibliographical references and index.

ISBN 1-58391-767-5 (hbk)
1. Psychoanalysis—Philosophy. 2. Cognitive science. I. Title.
BF175.15213 2006
150.19′5—dc22 2005018226

ISBN13: 978-1-58391-767-1 (hbk)
ISBN10: 1-58391-767-5 (hbk)

Contents

List of figures

Note

This translation is based on a thoroughly revised and updated version of the Italian book mentioned on the copyright page and reflects the further development of the author's ideas in the intervening years.

Introduction

The reason for the success of psychoanalysis lay not only in its clinical value (the understanding and treatment of syndromes formerly deemed inexplicable and virtually untreatable), and certainly not in its method, which was thought 'strange' and unscientific, and was criticized as unprofessional and almost immoral. In the scientific world that straddled the nineteenth and twentieth centuries, it was successful mainly because its founder endowed it with a theoretical edifice, the energy-and-drive theory, which offered an explanation of psychic functioning and its disturbances that was acceptable in terms of the sciences of the day – for the concepts of libido, drive, psychic energy, discharge, instinct, economy and the like mirrored contemporary scientific principles and discoveries in the fields of neurophysiology and thermodynamics.

Today, somewhat paradoxically, the method has been accepted and the clinical aspect recognized at least in part, whereas the theory – the energy paradigm – is precisely the element that meets with the most criticism, if not downright rejection. These critiques, voiced even within the psychoanalytic associations, have been expressed for some decades now. Yet Freudian theory seems to be holding up: to this day, the whole of psychoanalysis is identified in the public mind with Freud's drive theory. A possible reason for the persistence of this stereotype, in my opinion, is that, whereas different psychoanalytic models have been successively proposed, no clear *explanatory* alternative to the original Freudian drive theory has ever been proposed. Even today, the energy-and-drive theory retains a heuristic value – that is to say, it serves as a metaphoric model for understanding the dynamics of affects, and is therefore useful for clinical purposes. However, it used also to possess explanatory value, which for Freud may perhaps have outweighed the heuristic aspect, but which is no longer tenable today.

In every science, modern epistemology distinguishes levels of descriptive, interpretative, and explanatory knowledge (Imbasciati 1994). The first two concern, to different degrees, the understanding (*how* and *how well*) of observed phenomena, while the third relates to their explanation (*why*). This last level, to a much greater extent than the first two, requires the explanation

to accord with the results of other sciences that deal with the same phenomena from different observational standpoints. In addition to providing a descriptive and interpretative key to the understanding of psychic events (that is, one whereby subjectivity and its development could be understood 'from within'), Freud sought to explain these events 'objectively', in a manner consistent with the discoveries, or, at least, the hypotheses, of other sciences. This was achieved with the energy-and-drive theory, by the reference to instinct, a psychobiological energy, and the laws of its distribution and transformations – that is, of its dynamics and economy. This was consistent with the sciences of the time – in particular, neurophysiology (as in the reflex arc and electrophysiological discharge models) and thermodynamics.

In other words, the explanatory value implicitly attributed by Freud to his theoretical edifice, and probably also the fascination it exerted for many years, rested on its agreement, or consistency, with the neurosciences of the day, so that psychoanalysis seemed effectively to bridge the gap between the human and the natural sciences. Such an agreement no longer exists, for today's neurosciences see the brain not as an apparatus with (bioelectric) energies flowing within it, but as an information-processing system capable of self-modification in a process of development and construction. They also present a picture of the neural system not as a finished, genetically determined apparatus simply waiting to receive and store experience, but as a predisposition to develop certain functions rather than others according to its interactions with the various inputs received. These interactions include the processing of information derived from experiences. The results of this processing determine the constitution and construction of the functions peculiar to a given individual mental system, and proceed in parallel with neural development, which they in fact seem also to determine. In particular, the processing of the primal life experiences conditions not only the functioning but also the very morphology of the neural system, as has been demonstrated experimentally in animals. The vision of the present-day neurosciences is thus one in which both neural and psychic development fundamentally take the form of 'learning processes', especially in the fetus and the neonate; moreover, these processes are not a matter of passive imprinting, but of active processing. Hence the importance of the so-called cognitive sciences and their agreement with both neurophysiology and experimental psychology.

For this reason, Freud's theoretical edifice can no longer be deemed to possess explanatory value, although it can possibly, if understood metaphorically, be retained and used as a model to facilitate clinical comprehension, rather than as a theory proper. In particular, after all, Freud's theory is inconsistent with the findings of the present-day neurosciences. This raises the question of whether it is possible fully to preserve the scientific accomplishments of psychoanalysis – specifically, its method and the relevant discoveries – while at the same time developing a properly psychoanalytic

theory that both possesses explanatory value and is consistent with the other sciences of the mind today.

The Freudian theory used the model of a *vis a tergo*, identified as instinct; this was in agreement with the genetic and neurophysiological conceptions of the time, according to which the neural apparatus was seen as developing essentially along biological lines, or at any rate on the basis of organic causes, while experience was deemed to be merely its content. The intimate, mutual connection that has now been established between learning (in the sense of the processing of experiences), consequent acquisitions of mental functions and their encoding in memory, as well as the morphological and functional development of the neural apparatus, was virtually unknown in Freud's day. Neural functioning was seen as relatively independent of that of the psyche, and Freud attempted to unite the two with the concept of the drive cathexis of reality. Drive cathexis was seen as modifying standard neural functioning. Psychic functioning was, furthermore, regarded as dependent on neural functioning, but the converse was not held to be the case. Given this assumption of constant neural function, Freud had to explain the enormous intersubjective variability of the psychic functions he was discovering; he sought to reconcile the unidirectionality mentioned above (neural versus mental functioning) with variability between individuals through the concepts of conflict, suppression, repression, psychic reality as an effect of the drive economy, and other notions included in his theoretical construction.

The idea that psychic functioning is independent of the workings of the neural apparatus was favoured by the prevailing ignorance of the importance of the preverbal psychic functions and of the extent to which their acquisition moulded the corresponding neural functions. This, in my view, is one reason why the separation between affect and cognition, inherited from philosophy, was able to persist for so long: since the prelinguistic mental functions went unrecognized, full consideration was not given to the corresponding neural functions, so that their products in adult psychic life – the affective processes, which already appeared to differ from the more developed mental functions in the subjectivity of the individual – were held to be different also in nature. The result was the distinction, and separation, between cognitive functions, which were regarded as more properly mental, and affective functions, whose nature and origin remained obscure. In other words, the functioning of the nervous system was thought to be predetermined, while the mental functions, fully recognized only after the acquisition of language and labelled 'cognition', were considered to be conditioned by the neural functions and hence to be universal – unless 'disturbed' in a given individual. Such a 'disturbance' was attributed to non-cognitive functions and labelled 'affective'. While interindividual variability was thereby explained, the origin and genesis of the affective functions remained in obscurity. Freud attempted to explain them by the formulation of his energy-and-drive theory.

However, this meant that the affective processes – the salient aspect of

all truly mental, albeit prelinguistic, functions – were considered from a fallacious starting point. The reduction of the cognitive processes to those observable after language acquisition and their consequent seeming constancy, at least in the normal situation (today we know how variable they in fact are – cf. cognitive strategies), favoured the view that they were a natural emanation of predetermined neural functions. By contrast, given their conspicuous variability (even within the norm), affects came to be seen as different in nature from the cognitive processes, or, at any rate, secondary to cognition. Furthermore, the mesolimbic brain region was virtually unknown in Freud's day. On discovering the enormous importance of affects, Freud sought to correlate them with all the functions hitherto regarded as mental through the biologistic concept of the drive; affect was seen as the drive's psychical representative as modelled by experience. The concept of drive cathexis explained the extent to which drives and affects are able to influence representations and the cognitive processes; this explanation was necessary at the time because it was otherwise supposed that, as emanations of neural functions held to be immutable, representations and cognitive processes must be constant. So the idea that affect differed in nature from cognition tended to persist in Freud (Imbasciati 1991).

The foregoing follows from the all-embracing nature of the energy-and-drive theory: through the concept of instinct, biology was contrasted with the particular psychic activity that characterizes subjective experience for each individual but was linked to it. Freud's theory was designed precisely with a view to reconciling the great interindividual variability of subjective experience with the universality of biology for all individuals.

Today, the concept of instinct is no longer accepted in its original sense, and is regarded as ambiguous and of little value for explaining the behaviour of living organisms scientifically (Arnold, Eysenck and Meili 1972; Hinde 1974; Imbasciati and Ghilardi 1989; Ghilardi and Imbasciati 1990). Innate predispositions may perhaps be invoked to assign a certain meaning to specific configurations of sensory afferences (as in the classic example of the red spot in a white field for seagulls), and this idea may be associated with the concept of imprinting (Lorenz 1969). These predispositions, however, require learning. In parallel with the abandonment of the concept of instinct, the study of learning processes has developed beyond their representational (let alone verbal) aspect: learning is now understood as any kind of processing of experience that can give rise to some kind of change in the organization governing behaviour. The study of learning is thus extended back to the very beginnings of life, and affects are deemed to be basic cognitive schemata (cf. Plutchik 1980), which are therefore learned.

A consequence of the expansion of the study of learning has been the development of research on the ways in which learning is achieved and on how it is stabilized rather than transformed – that is, the study of cognitive processes. Both involve the study of memory traces and of their 'quality' – that

is, of the particular sensory elements of which they are composed – and entail the abandonment of the naive prejudice, still widespread today, that a 'trace' means an 'image' referable to some real object or situation: 'memories' (the use of the plural conveys their affective quality and fleeting aspect) are formless, absurd, disparate, obscure and bizarre. A more detailed investigation is needed of how the various traces, especially the most primitive, are constructed by the processing of experience – that is, by the cognitive processes – how they become stabilized, and, in particular, how each trace impresses its stamp on its successors, in the constant transformations and stratifications undergone by the traces throughout the course of life.

In view of the foregoing, Freudian theory appears inconsistent with the present-day cognitive sciences and with the generality of the neurosciences. The concept of libido, as a *vis a tergo* modelled by the encounter with reality, and Freud's endogenist and innatist model in general, do not sit well together with the accepted empiricist paradigm, with the discoveries of the importance of primary (neonatal and fetal) experience in the construction of the basic mental structures, and with the activity performed from the beginning by these structures on the data of external reality, involving the selection, reading and processing of every item of sensory information. Yet abandonment of the energy-and-drive theory by no means implies, as some fear, a minimization, let alone rejection, of the Freudian edifice, for the method established by Freud and the consequent clinical exploration remain immutable discoveries in the history of the sciences. However, a distinction must be made between method, discoveries and theories (Imbasciati 1994): discoveries remain, theories change and methods are refined – in all sciences. As to theory, Freud could do no more than construct the best possible one in relation to the corpus of scientific knowledge of his time. Theories are neither true nor false, but are hypothetical constructions that may be useful to a greater or lesser extent at a given point in scientific development.

The critiques levelled at Freudian theory in the last few decades, some of them originating within the psychoanalytic scientific community, are therefore more than justified; indeed, they are welcome from the point of view of the possible development of psychoanalysis itself. In my opinion, the studies that seek to compare psychoanalysis with the cognitive sciences are likely to be of particular value. The recent contribution of Bucci (1997), reviewing research in the field of information processing and multiple code theory for the construction and use of memory traces, is extremely relevant to psychoanalysis. However, the author's comparison with psychoanalysis is based on Freud's metapsychology, and disregards the large number of other psychoanalytic theories that have been developed since Freud – in particular, the so-called object-relations theories arrived at by many authors on the basis of Kleinian intuitions. One of the best known, of particular relevance to learning processes, is advanced in Bion's famous work *Learning from Experience* (1962). With their emphasis on the acquisitions of the earliest period of life,

the structuring of mental functions in response to the first relational experiences, and the processing of data from the context of the primal sensory experiences, object-relations theories are the ones best suited to comparison of psychoanalysis with the cognitive sciences. For these theories can more readily – and, in my view, necessarily – be considered in relation to memory traces; after all, in present-day neurophysiological terms, the elaboration of relational experience means the processing of memory traces, and hence cognitive processes. The cognitive processes must of course be investigated without recourse to the old reductive notion of a cognition confined to the more developed processes and distinct from affectivity; attention must be directed to neonatal (and fetal) cognitive processes and the mnemic processing carried out on them, which underlies the affective structure. For this reason, in my view, the value of Bucci's work for psychoanalysis, and in particular the reference to multiple-code theory, remains to be developed, precisely in relation to object-relations theories.

Owing partly to the reluctance of psychoanalytic societies to formulate alternative theories to Freud's, a climate of uncertainty, or rather of incomplete definition of theory, has arisen, so that different theories have been deemed equally valid options for every analyst. While this may be useful, and may indeed make for enrichment of the models, it can be an obstacle to the formulation of a concrete theory – as opposed, in my view, to a model (Imbasciati 1994). A theoretical type of formulation may have heuristic value for clinical purposes, or it may help us to describe the observed phenomena, to interpret them, and to transmit them to other workers, and in this sense may also be interchangeable with another, different formulation. However, a true, 'strong' theory must also have explanatory value and as far as possible be unitary. This, I believe, was Freud's intention: to explain the observed phenomena in addition to describing and interpreting them – and to explain them with hypotheses necessarily consistent with the findings of other sciences concerned with the same events, albeit from different standpoints. The Freudian theory was in line with the sciences of the time – hence, to my mind, its success and fascination.

Object-relations theories necessarily emphasize experience rather than development due to endogenous forces; they may therefore assume explanatory value to the extent that the elaboration of experience can be compared with the cognitive sciences' findings expressed in terms of memory traces. Of course, our conception of a memory trace today differs from the old view. A memory trace is now seen no longer as a content, or an 'image' of something, but as the *inscription of a functional acquisition*; the most important traces are those of the functions, which the system learns progressively by the processing of experience. A memory trace has a neural correlate, and we are here concerned with its explanatory aspect, for the manner of establishment of certain neural connections can tell us *why* the corresponding mental functions come into being. However, object-relations theories have been used

predominantly to describe and understand *how* the psyche of individuals is structured, whereas the question of *why* has been either set aside or referred – often none too clearly – to the Freudian tradition.

Many authors have developed object-relations theories without reference to the energy-and-drive model, albeit without repudiating it; the entire British school belongs to this tradition. The developments of the Bion school, by emphasizing the aspect of learning *from* experience, imply that the structuring of the mind does not require endogenous forces (such as libido or drives), but takes place through learning operations, whose laws do not necessarily prove to conform to the Freudian paradigm, or to be susceptible of accommodation within the framework of the energy-and-drive theory. Even the concept of aggression, which in the work of Melanie Klein appears to be linked (in my opinion, only formally) to the concept of instinct (the death instinct), is subsequently detached from the instinctual paradigm (cf. Money-Kyrle 1955, 1978), and is replaced in the Bion school by the notion of destructiveness – and this, stripped of explanatory connotations (the question *why*), is used to describe a relational modality (*how*) based on the concept of fantasy rather than that of the drive. All these fundamental twists and turns in the vision of mental processes have not been made properly explicit or adequately connected with the typically cognitive processes.

The developments of object-relations theories have given rise to substantial divergences within psychoanalysis, with the result that many authors have attempted to combine the two models (drive and object), although without succeeding in formulating a genuine 'theory'. Typical examples can be found in the work of Kohut (1971, 1977), Gedo and Goldberg (1973) and Modell (1975a, b). Other authors have explicitly denounced the energy-and-drive hypotheses on which much of the Freudian theoretical edifice rests, rejecting metapsychology in particular; examples can be found in George Klein (1976) and the review by Eagle (1984).

A glance at present-day psychoanalytic theories reveals so great a many-sidedness and diversity of models, concepts and terms that one may suspect the existence not of 'one', but of 'many' different psychoanalyses (Wallerstein 1988). There has been much questioning of what is meant by psychoanalysis: is it a theory? a technique? a hermeneutics, or indeed an art? Or is it a science? If the last, it ought to be characterized by the homogeneity and consistency of its specific method. I believe that the common ground referred to in a different context by Wallerstein (1990) is to be found precisely in the method. But how is that method to be defined vis-à-vis the – often highly involved – overall structure of this very particular science? Too often, a clear distinction is not drawn between method, techniques, models and theories.

There is a kind of glue that seems to hold the complex and variegated Freudian corpus together in the name of science, and that in the past constituted perhaps the most significant aspect of the scientific comparison of psychoanalysis with other sciences. That glue is the importance Freud

assigned to his libido theory, with its associated metapsychology, and in particular to the energy-and-drive conception of the psyche, its origin and development. This 'general theory of the mind' offered not only a description but also an explanation of psychic processes, and thereby placed psychoanalysis on the same level as the sciences of the day. Freud's energy-and-drive theory thus 'held psychoanalysis together' for decades, at first scientifically (because it was syntonic with contemporary scientific theories), and later charismatically.

Between the 1930s and 1950s, the divergences were, so to speak, camouflaged (Greenberg and Mitchell 1983). By the 1960s, the 'witch metapsychology' came to be radically criticized (Fabozzi and Ortu 1996), and was rejected by many, particularly in the USA, following the work of George Klein, Peterfreund, Gill, Rubinstein and others. The attempts to reconcile a range of widely varying conceptions (see Kohut) were followed by alternative suggestions; the information-processing paradigm of Peterfreund (1971) presents a certain interest owing to its pioneering aspect. Freud's descriptions of infantile development were criticized as adultomorphic and pathomorphic (Fossi 1984), and those of the internal world as anthropomorphic. Yet drive theory continued to be upheld by many analysts for a few decades more, and is perhaps still accepted today, even if for doctrinaire rather than scientific reasons – or, better, affective reasons within the psychoanalytic community.

To a clinician, on the other hand, the energy-and-drive theory, with the concept of instinct, appears to be the most logical and natural model in existence, which ought therefore to be espoused, because it is homologous with an adult's conception of the affects and emotions by which he[1] feels governed. After all, a mature adult who achieves the capacity to experience and feel – that is, to represent to himself – his own affects as a dynamic of inner trends will tend to think that the same occurs in all individuals, and that this dynamic does not depend on the subject's own capacity for representation, but is inherent in the nature of affects. The idea that affects have a dynamic helps us to understand a dynamic that we presume another may in turn become capable of feeling. That is the traditional supposition that underlies our interpretations. But it certainly does not mean that affects *really are made up* of these 'forces', which an adult experiences – that is, can represent to himself[2] – inside himself. I have written elsewhere (Imbasciati 1991)

1 [Translator's note: For the sake of brevity and to avoid clumsy constructions, where applicable the masculine personal and reflexive pronouns and possessive adjective are used throughout this book for both sexes.]

2 'Representation' is, of course, meant here not in a conscious sense, still less as a name for conscious affects, but as the possibility, which adults usually have, of gaining insight, often with the help of analysis, into their own internal world.

of the hypostasis of lived experience as an arbitrary element in Freudian theorization.

Taking the energy-and-drive theory on its explanatory level (Freud hoped that the biochemical substrate of the drives might one day be discovered – cf. Freud 1895d [1893–95]: 200ff.; 1905d: 167, 215 and 217; 1905e [1901]: 113; 1906a [1905]: 277; 1914c: 78; 1915c: 125; 1916–17a [1915–17]: 321), we are led to believe that there *are* instinctual 'forces', which *really do* act as an adult experiences them – that is, as he has become capable of representing them to himself. However, the possible form of one's experience of affects does not necessarily imply a homologous type of functioning: the capacity to represent affects to oneself is not the same thing as the existence and functioning of affects. The subjective experience of affects depends on a representational capacity that is a more mature function than the establishment of the functioning of affects as such; it is the capacity to have the experience of the self, the acquisition of subjectivity (Ogden 1990), and a function subsequent to the basic function of the affects, which is acquired, so to speak, as a meta-affective function of affect, during the course of the developmental cycle of the older child and the adult. Small children do not yet possess this function, and many of our adult patients also lack it (Greenspan 1997). We often make the mistake of projecting into these patients our own way of representing affects to ourselves; failing to realize that this is an acquisition of normal, mature persons, we take it for granted that this capacity is inherent in the nature of all human beings' affects – and so we think that all patients, once their defences have been demolished, will once again feel affects in this way. So it is, as Greenspan (1997) points out, that many patients, while seemingly accepting our interpretations, remain untouched by them because they have *never acquired* any way of representing affects to themselves. Yet affects not only exist in these patients, but also modulate their behaviour. The problem is that affects *are* not natural 'forces', even if a mature adult may represent them to himself as such. They cannot therefore readily be linked, on the explanatory level, to the concept of the drive, even if, because they are learned as basic behavioural schemata (Plutchik 1980), they will determine all subsequent learning and hence govern the individual's behaviour.

In my opinion, psychoanalysis has been harmed by its retention of the Freudian theoretical edifice, with its appearance of explanation. That edifice has been hedged with numerous detailed reservations to allow it to be preserved at all costs (Greenberg and Mitchell 1983). This has made the problem of the scientific status of psychoanalysis appear as though it were inherent in the theory, so concealing the discipline's true scientific asset – namely, its method. Moreover, this ambiguity goes hand in hand with a willingness on the part of analysts, in the name of a plurality of techniques, to put up with an inappropriate distinction and definition of terms and concepts – including, first and foremost, the concept of an actual psychoanalytic 'theory'.

Over the many years since I began work in this field in 1978 (Imbasciati and Calorio 1981), I have become increasingly convinced that a 'strong' theory with potential explanatory value, consistent with the neurosciences and with the cognitive sciences in particular, can be derived from the neo-Kleinian matrix of object-relations theories. The need, in my view, is to determine the manner of composition, or rather construction, from a variety of disparate inputs that must also be identified, of the memory traces corresponding to the psychoanalytic notions of the primary relationship with the mother, the internal object, the 'breast', differentiation of the early self, symbolization, and so on. The 'learning *from* experience' intuited by Bion must be translated into terms of memory traces.

The theory presented in this book, in which the mind and its development are considered in terms of learning operations and memory traces, has an explanatory aim; it is intended as a possible successor to Freud's original *explanation*, and to be consistent with the psychoanalytic *descriptions* given, in particular, by more recent authors, as well as with the findings of the present-day neurosciences and cognitive sciences.

Milan, March 2004
Antonio Imbasciati
www.imbasciati.it

Chapter 1

The mind

1.1 Affect, cognition and consciousness

'Mind' is defined differently according to one's standpoint, which may be that of philosophical research (Money-Kyrle 1956, 1961; Meltzer 1978), neurophysiology (Hebb 1949; Benedetti 1969; Eccles 1970; Luria 1970, 1974, 1976; Brown, J. 1977; Boddy 1978; Mancia 1980) or the psychological sciences. For psychologists, as a first approximation, the epithet 'mental' can evidently be applied not only to thought and memory, but also to the complex of feelings and emotions that substantially influence the cognitive processes, even though these processes are seemingly the most elaborate and creative aspect of the mind. The fact that affective-type processes can 'influence' cognitive ones is universally acknowledged, even by laypersons, although there is less agreement on how and with what results. The complex of feelings, affects and emotions is often regarded as a set of psychic processes different in nature from those of cognition (thought, memory, intelligence, etc.), so that the use of the term 'mental' tends to be restricted to the latter, although it is accepted that the former, too, are psychological; in other words, since they take place in the mind, it is conceded that they must be deemed mental. The different nomenclature is reflected in the common usage of the two terms 'psyche' and 'mind'. The former is the more comprehensive, covering all psychological processes, whereas the latter tends to denote certain psychic processes only – namely, the cognitive ones.

Inherent in the different names is a difference in the connotations of the two types of processes. The term 'mental' connotes a 'higher' level and confers privileged status on the processes to which it is applied, so that these tend to be seen as independent of other psychic phenomena – which, for their part, are placed on a lower, secondary level in the mental economy, subordinated to the 'higher' functions. However, this subordination is contradicted both by experience and by common sense, which is perfectly prepared to acknowledge that feelings, affects and emotions often constrain the so-called higher mental processes, and may even actually inspire or govern them. Yet even if the interdependence of the two kinds of psychological phenomena is granted,

they are often still contrasted with each other – as, for example, the phrase 'to be overwhelmed by passion' indicates. Here the affective processes (passion) – seen as 'lower' than the processes that 'ought' to be in charge of the human mind and behaviour – are felt to become so much stronger than these 'higher' processes that they overwhelm them; the antithesis between affect and reason is obvious. This opposition is reflected in usage, where the term 'mental' is often felt to be inapplicable to the affective processes.

This view of the mind as divided into two parts stems from the medieval conception of psychology, inherited from the Greek philosophical tradition, as the science of the soul in which human activity is governed by the two contrasting principles of matter and spirit (Hutten 1962); this division has persisted in the lay mind and also, to some extent, in psychology. Although the development of the psychological sciences has amply demonstrated the importance of affective and emotional processes and the close interdependence between them and the cognitive and conative processes,[1] the division in a sense lives on and is expressed by the different connotations of the terms 'mental' and 'psychic'. Another reason for this division is that, from an initial, superficial examination of our subjectivity, cognition appears to possess the character of consciousness, whereas affects (as well as the meaning of actions) more often prove to be concealed. In our view, this division is unwarranted. The simplest and most obvious example is afforded by infant observation: can cognitive activity be distinguished from affective behaviour, or the expression of affect, in a 1-year-old child? Or in a 6-month-old baby? There is no doubt that the infant (*infans* – Latin for 'unable to speak') has cognitive activity: he is getting to know the world! He is learning many things, images, perceptual and recognition capacities (that is, memory), functional skills and the ability to communicate; and he is learning to engage in dialogue with his caregivers, first by eye contact, then by motor activity, next by lallation, and finally in words. Variations in cognitive functions between individual infants are obvious: the expert eye can quickly tell a retarded from a precocious child.

Yet the mental activity of small children is customarily regarded as 'affective' rather than cognitive. A continuum in fact exists between what appears as affect in young children and what appears as cognition in adults: one need only consider the course of development of an individual from the age of 1 year on, through infancy and the later stages of childhood, as he gradually acquires 'rational' capacities and comes to know what he is thinking – that is, as he acquires consciousness. I say 'appears' because the distinction between affect and cognition is only a seeming one, and because the difference

1 The neurosciences too have established that the so-called affectivity centres in the brain modify the cognitive functions; for example, the amygdala regulates memory.

between the two orders of mental processes lies not in their nature, but in the different appearances assumed by affects and rational cognitive processes in adult consciousness. As stated in the introduction, the legacy of the distinction between affect and cognition in our culture is that, once we are adults, some of our mental processes appear to be clear – that is, perfectly conscious – whereas others seem veiled or obscure. In other words, the distinction is based on differences in the degree of consciousness. However, the different appearances in adult consciousness by no means signify that the two types of mental processes are *really* different. So-called affects have to do with cognitive functions, as can plainly be seen in infants and children. According to authoritative studies (Plutchik 1980), affect can be defined as a basic cognitive schema. Kellerman (1980) uses the term 'basic cognitive category'. Again, in the investigation of non-conscious mental processes, not only psychoanalysis but also the 'cognitive sciences' have for decades been aware of a continuum between seemingly affective processes and others that appear cognitive; while obvious in the course of individual human development, this continuum can also be demonstrated in adult mental activity.

The epistemological and methodological problems raised by these distinctions and the relevant research are extremely complex. A 'cognitive psychology' has now existed for some decades, but the relevant issues are beyond the scope of this book: interested readers should consult, for example, Neisser (1967, 1976); Kanizsa (1975); Hamilton and Vernon (1976); or Kanizsa and Legrenzi (1978). In our own approach, as will become clear in the course of this book, all psychic processes are considered from a single viewpoint combining cognitive and psychoanalytic aspects, within the framework of the theory to be outlined below (see Chapter 2). For this reason, the term 'mental' will be used to denote all psychological processes, including those defined by others as affective and/or emotional.

As will be seen, the term 'mental' – denoting the characteristic element of psychic processes – is here applied not only to conscious manifestations but also to a whole range of phenomena that do not attain the level of consciousness. From the very first psychoanalytic discoveries at the end of the nineteenth century to this day, the development of the psychological sciences has increasingly revealed the existence of non-conscious mental phenomena. Unconscious processes are in fact much more numerous and perhaps more important than their conscious counterparts. For this reason, consciousness is regarded as an attribute of certain mental processes, and accessibility to verbalization as only one aspect of the activity of the mind, not encompassing the whole of psychic reality (Lunzer 1979; Davidson and Davidson 1980). Any conscious mental event presupposes unconscious processes, so that conscious phenomena are seen as the terminal event in a chain of unconscious processes; there can be no conscious thought unless there has first been an unconscious thought (Bion 1962). This statement, which is manifestly true on the diachronic level of individual development from birth to adulthood,

is assumed here also to be valid synchronically for any adult mental event. On this point, we agree with Bion (1962, 1963, 1965) that the genesis of any activity definable as thought predominantly involves unconscious processes: every thought presupposes and contains within itself a chain of unconscious processes, from the most primitive to the most highly developed, which may, but do not necessarily, assume the quality of consciousness (as a mere epiphenomenon). That is the sense in which Bion's thesis should be understood.

Other authors hold that consciousness is only one of the possible manifestations of neurological functions, albeit not a constant element in their activity (Brown, J. 1977; Arieti 1969; Davidson and Davidson 1980). The mental character of a neurological process is unequivocally betrayed by the quality of consciousness; however, consciousness does not introduce the 'psychic' element, although it incontrovertibly demonstrates it. Yet this is demonstrable, if less readily, at an even earlier stage – on the level of processes that cannot be regarded as mental because they give rise, for example, to complex behaviour patterns that, while seemingly automatic, indicate the presence of ordered, coordinated processes of even greater complexity, albeit ones that are not conscious. Consciousness is therefore not an intrinsic property of neurological functions, but just one of the many mental functions acquired and performed by a neurological system.

The distinction between affect and cognition has also been upheld by psychoanalysis, especially in the Freudian theory,[2] in so far as their seeming differentiation in adult consciousness has taken on a substantial quality (hypostasis of experience – cf. Imbasciati 1994) in the energy-and-drive theory: here affectivity, although studied in terms of the continuum between it and cognition, is linked directly to a psychobiology of instincts and deemed indirectly to influence the cognitive processes, which are seen as a natural consequence of brain function. Hence the particular conception of the unconscious maintained by Freud and the early psychoanalysts. On discovering unconscious processes, Freud asked, 'Why the unconscious?', and, as we shall see, based his theory on this question. Such a question in fact assumes a priori that what is mental must be conscious; from our present-day vantage point, therefore, the wrong question has been asked. Today, we should put it in these terms: 'Why consciousness?' In other words, why, in the development of its mental functions, does the human species also acquire the highly particular self-reflective function that is called consciousness? This reversal of viewpoint on a fundamental question has given rise to still continuing radical changes in the development of psychoanalysis.

2 Psychoanalysis is by no means synonymous with the Freudian theory, which is merely the first to have been formulated in the development of psychoanalytic science.

The term 'mental', then, covers not only the events traditionally and restrictively defined as such (e.g. intelligence), but also emotional and affective events; it is extended, too, to non-conscious processes. It is applied, in addition, to a range of phenomena that are not ordinarily seen as mental – that is, to all forms of human behaviour and action. While this seems obvious for complex patterns of behaviour, especially those governing interpersonal relationships, simpler behaviours too involve a mental element. Even riding a bicycle from A to B can be regarded as a mental phenomenon, as can someone's behaviour in punching, hugging or having sexual intercourse with another person. All these behaviours can be defined as mental events in so far as they are performed in accordance with a specific, consistent program (either automatic or established on the spot, but in any case always acquired), which cannot be regarded as anything but mental, whether or not it is rational and conscious in nature. What seems to be the mark of a mental function is a *program*.

It must not be forgotten that the mind is not a 'substance' (the animic substance of medieval philosophy), but the set of functions that control every activity and manifestation of the individual. This set is acquired, as will be shown in detail later, by progressive learning operations. It is supported by the neural functions, but is not their direct, obligatory emanation for all individuals: the neural functions are modulated by learning operations, and it is these that record the successively acquired functions in the neural apparatus. Even the morphology of the brain is determined by learning operations. For this reason, a program, as the key concept in the definition of a mental function, must correspond to the notion of a memory trace (a 'trace' refers to the acquisition of a given function). This correspondence between the concept of a functional program (which is acquired) and that of a trace recorded in the neural structure is the foundation of our theory, which infers the corresponding construction of successive functional traces from the psychic processes investigated by the psychoanalytic method. Our aim is to identify a psychophysiological counterpart to the findings of psychoanalysis.

Even much simpler manifestations than those usually described as 'behaviour patterns' or 'actions' – for instance, any motor activity – must be regarded as mental. Someone who takes out a cigarette and lights it, even if absent-mindedly, performs a series of movements that depend on a precise muscular sequence, set in train by a program contained in his mind – that is, by a set of processes that may or may not have become automatic but are in fact the result of a precise learning operation and can be modified at any time by other mental processes. In walking, too, one performs a series of actions which, while automatic, share the mental properties of the previous example. Considered in these terms, even the simplest motor action, such as bending one's forearm from the elbow, cannot strictly speaking *not* be regarded as a mental event. After all, to bend one's arm, *some* muscle fibres of *some* muscles must be contracted, and *some* must have a certain degree of contraction while

others must contract to a different degree; at the same time, *other* fibres, belonging to *other* muscles, must – not, of course, arbitrarily – relax, and their reduction in tone must match the increase occurring in the contracted muscle groups. Moreover, all this must be appropriate to the specific type of bending, with a *specific* intensity, a *specific* and precise force, a *specific* velocity and a *specific* amplitude, *specifically* stopping at a *specific* point, with a *specific* and precise deceleration at the end and a *specific* and precise acceleration at the beginning. In other words, an entire, highly complex muscular sequence must be implemented – and an infinite variety of sequences can give rise to an infinity of bending operations with an infinity of different characters. Such sequences are set in train by equally precise sequences of nerve impulses generated by a precise program; in psychological terms, such events correspond to processes definable as mental, some of which may appear automatic and others voluntary,[3] some conscious and others unconscious, some investigable by methods of a certain kind (e.g. the psychoanalytic method, among many others) and others by other methods, whereas still others are relatively inaccessible.

A person's consciousness is therefore a secondary, relatively non-defining, characteristic of the mental; moreover, it is subjective and as such extremely variable. The unconscious of psychoanalysis is a state of lack of consciousness of a very particular kind – that is, it is defined by the specific method used to observe it. Conversely, what appears to be a more 'objective' and general characteristic of the mental is the non-chance nature of many behaviours and behaviour patterns, from which it is possible to demonstrate, or infer, the operation of programs governing the observed manifestation in interaction with the environment.

1.2 Perceptual activity

The term 'mental' can therefore be extended to all behavioural events, from the simplest motor phenomena to the most complex behaviour patterns; the common denominator of mental function appears to be the fact that it is underlain by a 'program' – which indicates learning and memory. However, there is also another class of phenomena that can be regarded as mental in these terms. So far, our analysis has been confined to events that presupposed some kind of mental activity, which was therefore manifested more or

3 If the above example is considered in neurological terms, voluntary – pyramidal – activity is distinguished from extrapyramidal automatism and tone. The argument as to whether extrapyramidal automatism can be regarded as mental is more complex, involving as it does the respective extents to which extrapyramidal motricity is acquired as an exclusive consequence of neural maturation, on the one hand, and as a result of the exercise of functions in the fetus and the neonate, on the other hand.

less plainly on the outside; in other words, we have concentrated, as it were, on the 'output' dimension, from the mind to the outside world. Yet there are also mental events on the 'input' side, such as the phenomena of perception, to which the adjective 'mental' is also applicable.

Perceptual phenomena are 'mental' events in their own right, even if, owing to their simple and seemingly automatic appearance, they are commonly regarded more as physiological events than as genuine mental processes, or rather 'activities'. It is often assumed that perceptions are the automatic result of the functioning of the sensory receptors, acting, in effect, as faithful reproducers of external reality, which is deemed to be 'taken in' by the sensory apparatus and transferred to the mind, where it is used for processes of knowledge. This view, described as 'naive realism' by Gestalt psychology (which demonstrated that it was untenable – Koffka 1935; Metzger 1954; Kanizsa 1975), rests on the basic assumption known as the 'constancy hypothesis' (Katz 1951), according to which objects are perceived as they are in objective, physical reality, so that the subjective experience is characterized as a 'copy' of reality. This is therefore deemed to be the mode of functioning of normal perceptual processes, whereas all other cases, where the percept does not perfectly correspond to the objective reality, are seen as exceptions, or anomalies of perception, the paradigm cases of which are optical-geometrical illusions (Girotti and Calorio 1974; Calorio and Purghé 1977; Purghé and Imbasciati 1979). This theoretical approach is the legacy of a philosophical tradition in which the external world is held to present itself to us as it actually is, and in which knowledge proper consists not so much in the recording of what is seen or heard or touched – which is deemed 'natural' – as in the subsequent use of the perceptual events.

Experimental studies of perception have led to different theoretical conceptions (Allport 1955; Brunswik 1956; Piaget 1969; Carterette and Friedman 1974–8), in which perception is no longer regarded as a direct representation of the 'truth', but instead as a complex process of restructuring and integration of sensory information; the emphasis is laid on the involvement of functional factors that depend on the contextual dynamics of the perceptual act. So-called correct perception raises the same problems as its incorrect counterpart: there is never an exact, faithful reproduction of the stimulation situation, and the seemingly automatic nature of the process is due not to deterministic functioning of the receiving apparatus but to the speed at which the data from the receptors are used in mental processes, the result of which is the subjective event called perception. The central element of perception is a 'recognition' of the object, or of its parts or qualities, which is correlated in a complex manner with the processes of learning and memory. Eccles (1970) summarizes the problem of the constitution of perceptual experience as follows:

> In response to sensory stimulation, I experience a private perceptual world which must be regarded, neurophysiologically, as an interpretation

> [a psychological interpretation – *AI*] of specific events in my brain. Hence I am confronted by the problem: how can these diverse cerebral patterns of activity give me valid pictures of the external world? Usually this problem is discussed in relation to visual perception [. . .]. There seems to be an extraordinary problem in explaining how information from my retinae when relayed to, and activating, my cerebral cortex gives me a picture of the external world with all its various objects in three-dimensional array and endowed with brightness and colour. This epistemological problem has led to much philosophical confusion when it has been discussed on the assumption that fully patterned visual perception is an inborn property of the nervous system. On the contrary, my visual perception is an interpretation of retinal data that in a lifetime of experience I have learned to accomplish, both particularly in association with the sensory information provided by receptors in muscles, joints, skin and the vestibular apparatus, and with the central experiences of willed effort. (Eccles 1970: 66)

And, we may add, this interpretation is also associated with the experience represented by memory.

The problems of perceptual processes have always constituted a wide-ranging field of study, and indeed a discipline in their own right (the psychology of perception, or perceptology). This is therefore not the place for a discussion of its principal aspects, of the complex issue of empiricism versus innatism – the relations between perception and learning – or indeed of the epistemological problems of the process of knowledge in general. Instead, let us merely mention here that the concept of 'reception' can usefully be distinguished from that of 'perception'. The former term usually denotes the physiological process whereby a receiving apparatus, by virtue of its specific neurophysiology, receives certain signals from external objects and conveys them via neurological pathways to more central processing stations, where they undergo more complex processes, of which we may observe the subjective aspect – perceptual phenomena – and which can be described in psychological rather than physical terms. In the usual sense of the word and in accordance with its etymology (Latin *per* + *capio*), a perceptual event possesses the characteristic of consciousness; however, this is not the only subjective event involved in the psychic – that is, mental – processing of the received sense data. The existence of mental events associated with the reception of signals from the external world but lacking the character of consciousness can also be demonstrated; such phenomena range from so-called subception (wrongly described as subliminal perception) to intermediate phenomena in which the characteristic of consciousness is attenuated – for example, when one remembers having seen an object without having registered it at the time of observation (the 'attention/perception' problem).

Because a sense datum can be used for psychic – mental – processes without

the objective characteristic of consciousness necessarily being involved, perceptual events, like any other mental processes, can be considered in the context of psychoanalysis – and, in my view, more precisely, within that of Bion's theory. Perception can be regarded as a kind of conscious thought which, like all such, is the – albeit not always necessary – end result of a chain of unconscious processes (Ehrenzweig 1967, 1975). These may account for the entire range of perceptual phenomena involving a discrepancy between the percept and the external object, or, rather, between the percept and the set of stimuli presented by that object to the receiving apparatus. Such phenomena range from the perceptual events studied by Gestalt psychology, via optical-geometrical illusions and the processes involved in projective tests, to the projection phenomena studied by psychoanalysis, and may be grouped together under the heading of apperceptive distortion (Imbasciati 1967, 1978a). The discrepancy that always exists between percept and objective reality gives rise to considerable epistemological problems; in psychoanalytic terms, it shows that perception, as usually understood, is the final event in a sequence of unconscious mental activity, while, on the other hand, the study of the unconscious processes underlying perception can supply information on the reasons for the processes of apperceptive distortion and on their characteristics.

Perceptual activity centres on the process of selection, organization and filtering of information performed by the various neuronal stations along the nerve impulses' pathway from the receiving apparatus to the brain, where they are transformed by certain precise programs into, for example, 'visual thinking' (Arnheim 1970). This therefore entails not the mere mechanical recording of data, but the 'understanding' of meaning structures through a process of active exploration: 'Looking at the world [proves] to require an interplay between properties supplied by the object and the nature of the observing subject' (Arnheim 1974: 6); and 'All perceiving is also thinking, all reasoning is also intuition, all observation is also invention' (ibid.: 5). In other words, perception is a *reading* process, which presupposes the existence of reading units and reading programs – in turn involving learning and memory. If this is so for the perception of objects, whose laws of formal organization have been studied by Gestalt psychology, it is all the more true of more complex situations, such as interpersonal perception (Warr and Knapper 1968). Consequently, for example, when we meet someone unknown to us, of whom we obtain only a vague impression, perhaps limited to an overall black-and-white judgement (pleasant/unpleasant or likeable/not likeable), our reaction results from the complex operations of selection and organization to which we subject the signals from the person concerned. The diversity of impressions depends on the functioning and construction of our personal processing structures (Money-Kyrle 1961; Abercrombie 1969; Eiser and Stroebe 1972), which determine how we organize and perceive the 'silent messages' (Mehrabian 1971) emanating from the unknown person, such as