

Psychoneuroendocrineimmunology and Epigenetics for a Renewal of Psychological Sciences and Practices

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Received: November 02, 2022; **Published:** November 18, 2022

DOI: 10.31080/ecpp.2022.11.01048

Abstract

The Bio Psychosocial Model (BPM), proposed by George Engel (1977), according to some critics, has failed in both philosophical and scientific terms.

Other think that “While the BPS may not have generated a scientific revolution in a Kuhnian sense, it has been hugely successful in advancing a holistic approach to science and medicine in the 21st century and beyond” [1].

In our opinion, the main success of the biopsychosocial model is to have fuelled the construction of the PNEI paradigm, which studies, within a systemic philosophical framework, the molecular dimensions of the human organism, integrating biology and psychology.

We believe that Psychoneuroendocrineimmunology (PNEI) and Epigenetics, the recent molecular revolution, are powerful integrative system models that allow the production of psychological theory suitable for comparison with biomedical and neuroscientific research and clinic.

In this paper we will try to apply these paradigms to interpret the current state of neuroscience and psychology, advancing a proposal for a profound renewal of psychological sciences and practices.

Keywords: *Bio Psychosocial Model (BPM); Psychoneuroendocrineimmunology (PNEI); Epigenetics; Integrated Mental Care*

What is PNEI?

Psychoneuroendocrineimmunology (PNEI) is the discipline that studies bidirectional relationships between psyche and biological systems [2].

Within a single model, PNEI brings together knowledge acquired since the 1930s from endocrinology, immunology and neuroscience. With PNEI, a model is emerging of research and interpretation of health and disease, which sees the human body as a structured and interconnected unit, where the psychic and biological systems are mutually coordinated.

This provides the basis for proposing new integrated approaches to the prevention and treatment of the most common diseases, especially chronic diseases and, at the same time, configures the possibility of going beyond the historical philosophical juxtaposition between mind and body, as well as the scientific, twentieth-century juxtaposition, between medicine and psychology, overcoming their respective reductionisms, which assign the body to the former and the psyche to the latter.

PNEI is therefore a new scientific paradigm that aims to replace the current reductionist paradigm, which has taken over since the second half of the nineteenth century. In the last decade, this scientific project has found a new solid molecular basis in epigenetic research, which has revolutionised classical genetics [3,4].

What is epigenetics?

Biological sciences are the engine of a revolution of historical importance.

Instead of the reductionist and determinist paradigm, a new paradigm has emerged that sees the genome no longer as a management centre that gives instructions to the body, but as an adaptive device that responds to environmental needs by regulating gene expression.

Epigenetics is the rapidly expanding science that studies the molecular mechanisms by which the environment and individual life act upon the information contained in the genome.

This new research clarifies the relationships between the earliest stages of life, starting from conception, personality styles and the health of the child and adult. They also explain the molecular mechanisms with which the characteristics of our life (pollution, nutrition, sedentariness, stress, social position) and also our gender enters into the biology of the body, thus modifying it. This provides the scientific basis for a strong integration between medicine and psychology [5].

Biology is going through an exciting phase, given that the Copernican revolution that is currently in progress enables us to close the abyss that has separated the study of the human biological dimension from that of the historical-social dimension, determining the unprecedented possibility that the study of one enriches our understanding of the other.

A phase full of opportunities for the sciences and the professions of the mind is therefore on the horizon, which will reward those who, with courage, will be willing to re-examine the tangle of traditions and cultural orientations, who will ballast them, putting in place a new scientific paradigm that does not welcome one school or another but that goes beyond, starting from the examination of the fundamental categories: psyche, brain, body, human nature, care. This is what I will try to do, not with a discussion in the abstract, but by starting from a direct examination of the context of psychological sciences.

The failure of biologism in psychiatry and of reductionism in the neurosciences

80 years after Freud's death, two simultaneous phenomena occurred: on one side the failure of biologic psychiatry and on the other side the collapse of orthodoxy in psychology which favours a convergence about to be a contamination among the several psychological traditions.

Caleb Gardner and Arthur Kleinman, respectively from the Psychiatry and the Anthropology Departments at Harvard Medical School, in a recent editorial published in the *New England Journal of Medicine* [6], write that “Biologic psychiatry has far failed to produce a comprehensive theoretical model of any major psychiatric disorder, any tests that can be used in a clinic to diagnose clearly defined major psychiatric disorders, or any guiding principle for somatic treatments to replace the empirical use of medications”.

In our opinion such unquestionable failure lies on the reductionist paradigm of neurosciences which reduces the mind to cerebral circuits and its complex symbolic dynamics to molecules and electric phenomena.

Neuroscience

Rediscovering the anti-reductionist root of psychology for a productive dialogue with neuroscience

It is historically known that the first organic scientific contribution in the field of psychology are Principles of Psychology by William James published in 1890. The beginning of this text is clear and of great interest for today.

James (1890) takes the two fundamental approaches of his time head-on: a metaphysical psychology and a psychology without psyche. Spiritualist psychology, which is abundant - as James recalls in the Preface to the first Italian edition of his book (1900) - in countries with a Catholic tradition such as Italy, identifies the psyche with the soul endowed with preordained and distinct mental functions (faculties). On the other hand, associationism presupposes a “soulless psychology”, that is, it conceives the ego as a bundle of automatic nervous reactions. However, whilst the spiritualist tendency is losing ground, as James recalls, the associationist tendency is in full development at the turn of the nineteenth century, even in the wake of the growing popularity of evolutionism and biological research. James specifically discusses the thesis of Thomas H. Huxley, a leading Darwinism doctor, who, in a speech to the British Association for Advancement of Science, delivered in Belfast in 1874, describes the human being as “a conscious automaton” stating that: “Will is not the cause of a voluntary act, but the symbol of this state of the brain, which is the immediate cause of this act. Mental states are symbols, in the consciousness, of the automatic changes that take place automatically in the body. We are conscious automatons” [7]. James’ criticism of the “theory of automatism” shows the absurdity of the claim of explaining the mental world and its products, such as, for example, Shakespeare’s Hamlet, by describing the poet’s nervous system [7]. At the same time, James clarifies that the mind is certainly the product of the brain’s activity, but, in turn, the mind also changes the functioning of the body [7]. “There is no mental change that is not accompanied or followed by bodily modifications” [7].

We are faced with the foundation of the scientific study of the bidirectional mind-body relations on a radically anti-reductionist and anti-mechanical basis, avoiding the trap of dualistic spiritualism. It is no coincidence that, during the foundation of Neuroscience, since the 1980s, James’ approach has been ignored or explicitly criticised by the vast majority of neuroscientists: sufficing for all is that of Nobel Prize-Winner for Medicine Gerald Edelman, who labels this feedback of the psychic dimension over the biological dimension as “the attribution of mystical powers to consciousness” [8].

Reductionism in neuroscience

The paradigm that dominates neuroscience since its foundation can be summarised as follows: the body is dominated by the brain, which, thanks to natural genetic selection, is structured into specialised modules that respond best to various internal and external inputs. Hence, two consequences: the mind is equal to the brain, in the sense that, in order to know the activity of the mind (cognitive and emotional), it suffices to know the activity of neurons; the brain, as the master of the body, being genetically programmed, is not affected by psychic activities, nor by the behaviours nor activities of the biological systems of the body.

Over the decades, many biologists, psychologists and philosophers of the mind have contributed to this paradigm (for an overview see reference 2, chapter 7). Even the contribution of the most heterodox neuroscientists has, for a long time, avoided addressing the obstacle of reductionism.

The contribution that Antonio Damasio, Joseph LeDoux and Eric Kandel, famous and influential neuroscientists, have made to ideas in the field of neuroscience has been relevant on three aspects: Damasio, starting from his “Descartes’ Error” (1994), highlighted the centrality of the body; LeDoux, in his book, “The Emotional Brain” (1996), pointed out, in full cognitivist rationalism, the centrality of emotions; Kandel, in “Psychiatry, Psychoanalysis and the New Biology of Mind” (2007), emphasised the biological role of psychological therapies.

These milestones that have marked the path of knowledge; but it is also true that their contribution has not affected the dominant paradigm, given that Damasio, in all his works, has reaffirmed the hierarchical role of the brain which certainly has the body as its main concern, of which he constantly maps its activity, but by which it is not influenced. For his part, LeDoux, with his research on the amygdala, defined as the site of fear, has strengthened the modular perspective of the brain and the mind-brain identity in the sense that, from the conceptualisation of the aforementioned research, one could draw the conclusion that emotions are inborn reactive patterns, implemented in the deep regions of the brain, in the “mammalian brain”, an ancient legacy of the evolution of species, theorised by MacLean with the metaphor of the “triune brain”. Finally, Kandel, in all his works, has constantly highlighted the centrality of brain genetics and the validity of the reductionist paradigm in neuroscience.

In recent times, we have seen major changes, which we believe to be appropriate to bring to the attention of scholars and operators [9].

LeDoux rethinks fear, criticising Panksepp

In a recent speech [10], the New York neuroscientist, reiterated that he was wrong to label the brain system that identifies and responds to threats as the “fear system”. “It was a mistake”, he had written [11]. An error corrected by distinguishing the circuits. In an article in *Neuron*, LeDoux [12] made a fundamental distinction between defensive circuits, that are centred on the amygdala and emotion of fear that is developed in the cortex. More recently, in two other articles [13,14], the dominant paradigm and its builders are addressed head-on, starting with Darwin and ending with Panksepp and Damasio’s “Descartes’ Error”.

In these writings, LeDoux criticises “the conventional viewpoint that emotions are innate and programmed in the subcortical circuits”, proposing, instead, that “emotions were of higher-order states established in the cortical circuits”. In this criticism, the target are the theories of MacLean’s and Panksepp, which place, in the human brain, cognition at the top (cortex) and emotions at the bottom (brain stem and limbic system). Panksepp, in particular, considering MacLean, describes three levels of the brain: a primary level, where the emotions we share with all the other animals (such as, fear and joy) are hosted, a secondary level, where more elaborate emotions reside (such as, empathy and pride) and, lastly, a tertiary level, which is exclusively cortical, where the functions of cognitive control of emotions are hosted [15].

This is an evolutionary hierarchical theory of the brain and mind that has gained a large audience. For example, Giovanni Liotti, on this basis, developed an “evolutionary theory of motivation” which is based on what he calls a categorical approach, namely that “each primary emotion corresponds to a specific subcortical brain module, selected by evolution, that is relatively independent of the other modules and that can only be mildly influenced by the supramodular activities of neocortical neural networks” [16]. The interesting and new fact is that Liotti himself, in this text, which is the last before his death, feels the need to distance himself from the categorical approach, proposing “a meeting point between the categorical approach and the dimensional-cultural approach” of emotions, claiming that these are built by the brain and by human culture and that, contrary to the MacLean-Panksepp perspective, they do not overlap with those of reptiles and mice [16].

Therefore, considering Joseph LeDoux's reflection, we can agree with him that "the difference between an emotional experience and a non-emotional experience, does not lie in the fact that one has a subcortical origin and the other has a cortical origin, but rather in the type of input processed by the cortical network".

Emotions are therefore built, starting from the recording and interpretation of signals, which come from the activation of the defensive circuits, but which find their peculiar meaning in the psychic interpretative categories implemented by the subject, which are the result of said subject's personal history of development. As Lisa Feldman Barrett [17] writes: "Emotions are not reactions to the world. They are your construction of the world".

Damasio rethinks feelings and discovers PNEI

Damasio, in his book, "The Strange Order of Things" (2018) and in an interview (Cicerone 2018), explicitly criticises the hierarchical perspective of the human body centred on the brain. He does so by reconstructing the network that connects the central nervous system to the peripheral nervous system and - for the first time, in his writings - also to other biological systems, including the immune system, in particular. The picture that emerges is, quite frankly, PNEI. In fact, he also declares that "Psychoneuroendocrinoimmunology is an application, in health and medicine, of the scientific understanding of all of the regulatory systems of the body" [18].

Damasio's description of the PNEI network is clear: "Feelings are not isolated neural events. The actual body is involved in a crucial way, an involvement that involves other important and decisive systems for homeostasis, such as the endocrine and immune systems" [19].

The body and brain communicate and modify each other: "The body has direct, unconditional access to the nervous system and it is true that the body gives free access to the nervous system (...) as in a 'give and take' that solidly closes multiple cycles of signals, from the body to the brain, back to the body and then back again to the brain. In other words, as a result of the information that the body gives the brain regarding its state, the body is modified in real time" [19].

Communication is not just about the nervous system: "The process is [also] humoral: chemical signals that travel in the blood capillaries flood certain regions of the nervous system without a blood-brain barrier and can thus directly inform these brain regions" [19].

Also, in Damasio, as in the case of LeDoux, the criticism of cognitivism, in the classical and modern versions of artificial intelligence, is accompanied by self-critical accents.

Two examples: one of implicit self-criticism and the other of explicit self-criticism.

The first also hereby concerns the accounts with the traditional MacLean-Panksepp perspective: "Conventionally, the body is said to transmit information regarding its doing to central nervous system using a variety of routes that land the relevant information in the old, so-called emotional parts of the brain" write Damasio on p. 129 ". The typical description refers (...) to the 'limbic brain' and to the 'reptilian brain'. "One understands how these terms made their way into the literature, but, is not very helpful today. In humans, all of these 'older' structures include 'modern' sectors, a bit like old houses with renovated fancy kitchens and bathrooms. Nor is the operation of these brain sectors independent, but rather interactive" [19].

Damasio settles accounts with Panksepp, although not explicitly, given that an attentive reader can easily find in all of Damasio's works, from "Descartes' Error" to the "Self Comes to Mind", an exaltation of Panksepp's work, presented as "a notable exception" with respect to dominant ideas, especially due to the emphasis it placed on the "placement of primordial feelings in the brainstem" [20].

In the second example, self-criticism is explicit: it concerns the intestine and its nervous system.

Damasio, in “The Strange Order of Things” writes that the enteric nervous system is rarely referred in medical courses and, when it is, it is generally considered a peripheral component of the nervous system. “It has been studied in detail until recently. It is practically absent from scientific treatments of homeostasis, feelings and emotions, and that includes my own ventures in those areas in which the references to enteric nervous system have been overly cautious” [19]. Therefore Damasio, by his own admission, was, at the very least, too cautious in assessing the importance of the intestinal nervous system. But - you have to ask - why?

One answer would seem to lie in the declared novelty of the subject: the role of the enteric nervous system was not known until recently. However, this is not the case.

The first modern monograph on the subject was published in 1987 [21] and two extensive reviews were published in 1994 [22,23], whilst in 1996 [24] the Enteric Nervous System made its detailed appearance (including clinical implications) in the *New England Journal of Medicine*, a journal that in medicine cannot be ignored. So much so that, in the first edition of book *Psiconeuroimmunologia* (September 1995), Francesco Bottaccioli dedicated a paragraph entitled “Anche la pancia ha il suo cervello” [“Even the gut has its own brain”] [25] and then, here and there, various ideas, including clinical ideas [25], resulting from this new knowledge: new in the early '90s.

Therefore, the initial, but well supported, evidence on the role of the “second brain” was there a quarter of a century ago. Why did Damasio not see them? Because he did not have the glasses to see them. It lacked a systemic paradigm, which would highlight all the bi-directional connections of our body. His research, albeit anomalous, was, however, internal to the dominant reductionist paradigm.

Kandel for a new scientific humanism

The theses that the Nobel Prize winner for medicine has been pursuing for the last twenty years, presented for the first time in a famous article in the *American Journal of Psychiatry* (1998), have recently been considered and expanded in a summary text (2018) “The Disordered Mind”. What Unusual Brains Tell Us About Ourselves. At the centre is “the new biology of the mind”, the result of the encounter between different sciences, between the philosophy of the mind, cognitive science and the sciences of the brain. The result is a new perspective of brain organisation, mental functions and psychiatric disorders (the latter being the prevailing subject of “The Disordered Mind”). Even if Kandel remains firmly convinced that genetics, along with clinical DNA tests, will give us, in the near future, the opportunity to find out, in a penetrating way, which people are at high risk of mental disorder - a forecast that frankly appears at least very optimistic - it is important that Aplysia memory researchers place the role of stress, psychotherapy, nutrition and physical activity at the forefront, given that - he writes - genes do not act in a vacuum, but rather express themselves in relation to the environment. In Kandel's book, there is no mention of epigenetics. Furthermore, it is no coincidence that, in our opinion [26], should epigenetic research fully enter Kandel's paradigm, it would drastically reduce the trust in reductionist genetic research that appears on every page of his writings and would, at the same time, give an even more solid foundation to the role of psychotherapies that the scientist resolutely supports. Lastly, in an age dominated by cognitivism and contempt for the whole varied psychodynamic tradition, it is not insignificant that, with his authority, Kandel takes to the field by inviting a historical and scientific examination of psychoanalytic ideas within a framework of construction of a new psychological culture, which requires a courageous rethinking of the traditional luggage. The outcome of this process will determine the formation of that new scientific humanism which is the horizon that the scientist indicates to the two major departments of knowledge: biophysical and anthropological.

Neurology looks beyond the brain

Of undoubted interest is also the upheaval in progress in the oldest discipline - the king of all brain sciences: neurology.

Dementia, Parkinson's disease and multiple sclerosis, to cite the most famous and ancient neurological pathologies, following the enervating and unsuccessful research of the virus and/or gene responsible for their pathogenesis, are increasingly being studied in their relations with the external environment [27], with the internal state of the body [28,29] and with the Western lifestyle [30], namely: physical activity, nutrition and stress. A paradigmatic change promoted by the eruption of neuroscience and inter- and trans-disciplinary research, which therefore includes psychological research and clinical psychotherapy, as well as nutrition science and other medical and behavioural disciplines.

This change is also constantly fuelled by basic research that documents the influences of behaviour on so-called brain plasticity, showing the way and the manner in which the psyche, culture and the whole body retroact on the structure of the nerve circuits, shaping them in an adaptive or maladaptive sense [31].

To conclude on the current state of neuroscience

In the field of neuroscience, the most recent works by Antonio Damasio and Joseph LeDoux go in the direction of the radical overcoming of reductionism, in favour of a systemic perspective of the human body, in a framework of interaction between the psyche, the brain and other biological systems. For his part, Eric Kandel delves deeper into and enriches his traditional proposal of fusion between biological sciences and humanities, emphasising the role of psychotherapy as a means of influencing biology. Neurology itself, driven by a growing body of evidence on the cerebral influences of peripheral biological systems, of the psyche and of behaviours, is forced to rethink its scientific status in general, by opening itself up to new ideas and clinical experiences of a systemic nature.

This context of change must be connected to the changes in progress in psychology, where, even here, there is no lack of novelty.

In the psychological and psychotherapeutic context, the two main traditions, psychodynamics and cognitive sciences, are traversed by critical currents that suggest the overcoming of certain cornerstones of their respective traditional heritage, in favour of an approach that, in some, the project of theoretical and practical integration is explicit.

Psychologies

Contemporary psychoanalysis is critical of tradition and open to contamination

Strictly speaking, it is not possible to discuss psychoanalytic tradition as a unified corpus. Not only due to the continuous adjustments and theoretical changes that the founder himself has made during his career (it suffices to consider, by way of example, the two so-called topics, the topographic model and the structural model of the psyche, or the transformation of the concept of libido in the antagonist couple, Eros and Thanatos), but also due to the well-known historical events that have seen the proliferation, from the Freudian framework, of different traditions that are even in strong contrast with each other. For this reason, contemporary theorists who set themselves the goal of establishing a unified basis cannot avoid referring to a range of various of traditions.

According to Glen O. Gabbard [32], it is necessary to refer to "at least 4 broad theoretical psychoanalytical areas": the Psychology of the Ego (from Sigmund to Anna Freud to Hartmann), the theory of object relations (from Klein to Fairbairn, Winnicott, Balint, to Kernberg and Mitchell), the Psychology of the Self (from Kohut to development theorists, Mahler and Stern) and the theory of attachment (from Bowlby to Sandler to Fonagy). The conclusion reached by the authoritative psychoanalytic psychiatrist is the acknowledgement of the existence of "theoretical pluralism", which can, however, be a resource for the therapist, claims Gabbard [32].

However, despite a contrasting framework of what is alive and what is dead in psychoanalysis, with radically different opinions on individual fundamental concepts, such as the drive theory, the Oedipus Complex, the Soul [33], the consensus on the “hard core” of psychoanalysis appears broadly and can be summarised as follows: psychoanalysis has an approach based on the development of the person, on the centrality of the first stages of life [34,35], on the person in his/her complexity [32], on subjectivity [36]; a person who asks for help, therefore, is not reduced to his/her symptoms [37]. The psychodynamically-oriented therapist¹ focuses the relationship with the patient on emotional experience and on implicit (unconscious) processes, not only on explicit processes [36,38].

In this context, “contemporary psychoanalysis is committed to modifying certain pillars on which classical psychoanalysis was based, abandoning the drive model, resizing the role of insight and conflict, re-assessing the role of the environment and real trauma, reviewing the psychosexual theory and its homophobic beliefs, rethinking the meaning of Oedipal dynamics...” [39] and rethinking the same attitude of the psychoanalyst as a “white screen” in favour of an emphasis on the “therapeutic relationship and corrective emotional experience” [40].

On this basis, which places orthodoxy aside - which seems to be preserved only in psychoanalytic institutions, the International Psychoanalytic Association (IPA) and, as far as Italy is concerned, Società Psicoanalitica Italiana (SPI) [the Italian Psychoanalytic Society], according to critical assessments that come from within the SPI itself [41]- approaches of openness and contamination with other traditions have long been recorded, including the rival for excellence: cognitivism.

Twenty years ago, a proposal of contamination came from psychoanalyst Paolo Migone and cognitivist Giovanni Liotti, who, in a joint article published in the *International Journal of Psychoanalysis* [42], put forward a proposal for integration between “psychoanalysis and cognitive-evolutionist psychology”.

We are currently seeing a proposal for integration that goes far beyond theory. Fredric N. Busch, Professor of Psychiatry at Weill Cornell Medical College and at the Columbia University Center for Psychoanalytic Training and Research in New York, proposes a clinical integration, which, of course, in order to be implemented, requires changes in both directions. In terms of psychoanalysis, Busch is penetratingly critical of some of the historical assumptions of the psychoanalytic tradition, such as the “neutrality” of therapists and their abstention from active intervention, also aimed at suggesting changes in the patient’s behaviour. Bush [43] has just published a book, the title of which, from a point of classical psychoanalysis, appears to be an oxymoron: *Psychodinamis Approaches to Behavioural Change*.

The basic objective of classical psychoanalytic treatment, in fact, is not to induce a change, but rather insight, which is the knowledge of the unconscious dynamics that govern thoughts, emotions and painful and/or pathological behaviour. In the traditional psychoanalytic perspective, therefore, personal change is a derivative, a by-product of insight. Here, on the other hand, psychoanalyst Busch argues that psychotherapists must take care of patients’ behavioural changes, by identifying mismatched thoughts and behaviours and proposing alternative behaviours [43].

As is well known, this is the traditional field of activity, or, I would say, the trademark, of cognitive-behavioural therapy. But there’s something new: Busch argues that change must be fostered by identifying obstacles, which reside, not only in erroneous thoughts, as is the case in the classical cognitivist tradition, but also and above all in profound factors that affect: 1) the patient’s history, his/her develop-

¹In this article, for convenience, we will use as synonyms “psychoanalytic” and “psychodynamic”, even if they do not have the exact same meaning. Indeed, for some, such as Mauricio Cortina (2016), “psychodynamic science” is in good shape, unlike “psychoanalysis”, which is fragmented in closed institutes that are hostile to “conceptual and scientific integration”.

ment, the presence of any trauma and intrapsychic conflict; 2) defence mechanisms, personality traits and difficulties, possible deficits in “mentalisation”, i.e. in the ability to reflect on other people’s and one’s own mental states [43].

According to Busch, psychodynamic therapists should integrate “the strategies that other treatments [cognitive-behavioural treatments, my note] use for behavioural change” with “psychoanalytic theories and techniques”, given that “efforts to change behaviours can be part of the development and use of the psychodynamic formulation [the diagnosis, our note] and of the therapy and can be used to increase self-understanding and exploration of transference” [43]. Namely, to improve psychodynamic therapy itself by integrating it with cognitive-behavioural therapy, as Wachtel did [44] and even before that, as Dollard and Miller [45] had attempted to do, in a certain way.

The critical and transforming drive of the “third wave” of cognitivism

It is known that the history of cognitive-behavioural therapy is divided into three phases [46]. The behavioural phase, centred on the theories of John Watson [47] and Burrhus Skinner [48], on Pavlovian conditioning (Watson) and operant conditioning (Skinner) and on the organisation of a therapeutic practice, to which many scholars have contributed, including Eysenck, Wolpe, Rachman, etc. based on the following principle: “No to pharmaceuticals, no to physical treatments, no to the discussion of sexual complexes lying in the depths of the unconscious, but rather a simple change in a person’s behaviour” [49].

The cognitive phase which, starting from the suggestions and practice of Albert Ellis and, especially, Aaron Beck on the diagnosis and therapy of depression, centred on the correction of negative thoughts about oneself, others and the world, leads, during the ‘80s, to a combination of classical behavioural therapy with the cognitive approach of disconfirmation of misinterpretations, which, for example, in the case of panic disorder [50], consist of catastrophic interpretations of bodily sensations. Cognitive-behavioural therapy (CBT, for its international acronym) was created, as an integration, in the cognitive model, of the main behavioural techniques: behavioural activation, exposure exercises, relaxation training and social skills acquisition [46].

From the 1980s onwards, CBT was to become increasingly successful, outperforming other traditional psychotherapies, primarily its historical rival, psychoanalysis, from which, however, Beck and other cognitivist leaders, came.

The reasons for the success of CBT have been analysed by Steven Hayes of the University of Nevada and promoter of ACT, Acceptance and Commitment Therapy. ACT, together with a group of therapies based on mindfulness - Dialectical Behaviour Therapy (DBT), Compassion-Focused Therapy (CFT) and Mindfulness-Based Cognitive Therapy (MBCT) - are part of the “third wave” of cognitive behavioural therapy [51].

Hayes [52], who was also president of the Association for Behavioural and Cognitive Therapies, argues that the reasons for the success of CBT are currently lacking. “The situation has clearly changed”, writes Hayes, firstly due to the fact that the public funding that has supported research into the verification of the effectiveness of cognitive behavioural therapy is diminishing, which was the verification of efficacy that drove the success of CBT, presented as the only evidence-based psychological therapy. Secondly, other therapies have shown their controlled effectiveness, with the result that the undisputed consensus surrounding CBT is being undermined. Thirdly, the challenge of the third wave to the “syndromisation of human suffering”, the “cognitive causality model” and the blind adherence to the symptomatological approach codified in the DSM [52] is increasingly taking root.

The pillars of cognitivism are attacked: the centrality of symptoms, the causal role of negative and erroneous thoughts and cognitive restructuring as the main route of therapy. The poverty of the philosophical basis of CBT and the supine adherence to a reductionist biology, also represented by the recent research programme of the National Institute for Mental Health (NIMH), known as Research Domain

Criteria (RDoC), is reported. “We don’t need reductionism in order to take biology seriously”, writes Hayes [52], who defines reductionism as “an intellectual black hole”.

In general, all third wave therapies focus on the emotional and relational dimension of psychotherapy, working on the development of skills on the part of patients who are not strictly cognitive, such as the acceptance of suffering, self-observation, compassion towards themselves and others, non-judgemental observation: psychic dimensions taken from the meditative tradition of Buddhist origin [53].

These ongoing changes in the cognitivist family have a significant antecedent in a book by Vittorio Guidano and Giovanni Liotti, published in 1983 by the Guilford Press in New York, entitled *Cognitive Processes and Emotional Disorders*. The book, dedicated to John Bowlby, with whom Liotti in particular had built, in those years, an intense exchange, won the Guilford prize for the best psychotherapy text in 1983. This volume tried to trace between classical psychoanalysis and behaviourism, giving cognitivism, which seemed to them the best choice, traits that are highly specific to the orthodoxy that was being formed in the U.S. and England. Peculiarities that are, above all, theoretical. Faced with the theoretical poverty of cognitivism, Guidano and Liotti (but specifically the former) suggested revolutionary concepts, derived from the philosophy of science of the second half of the twentieth century (Kuhn, Popper, Polanyi, but, especially, Lakatos), to try to describe the dynamics of the mind and the formation of personality. The other great theoretical tank, from which Liotti especially draws, is the research regarding Bowlby’s attachment theory. From this basis comes a perspective of the mind and personality organised on a “deep, relatively indisputable core”, which is formed in the early stages of life, on which “personal identity” will be built, which will influence and will be influenced by “models that anticipate and simulate reality” and then “rules for the assimilation of experience and problem-solving procedures” [16]. In this context, unconscious dynamics (tacit knowledge) and emotions fully enter the horizon of the psychotherapist, whose stated objective in this book is “the development of self-knowledge” by the patient. An approach that, especially in the early 1980s, strongly clashes with cognitivism and with the cognitive-behavioural synthesis proposed by the English.

At the end of the second decade of the current century, criticism of standard cognitivism, from within this cultural current, has become desecrating. For example, a recent book by Bruno Bara, a well-known exponent of Italian and international cognitivism, has words of fire towards classical cognitive-behavioural psychotherapy “which remains anchored to a perspective in which emotions are subject to cognitions and neither the physical substratum that supports both, nor their neural realisation are considered significant” [54]. The main curative factor, therefore, according to the author, is not insight, the awareness, that the therapist aims to reach the patient, whose “all traditions have emphasised the intellectual part”. “In reality”, he states, “therapeutic awareness is embodied, it is visceral and emotional and only marginally cognitive” [54]. Hence the need for the therapist to understand that “emotions are changed only with new emotions, visceral experiences are changed only through new visceral experiences, pathological interactions are changed only with new functional interactions” [54]. Consequently, the relational therapist must not neglect the examination of the past, the history of the patient’s life, what Bara calls “the reconstruction of the diachronic dimension of the patient’s interpersonal patterns”, even with the examination of dreams [54], extending the investigation “not only to behaviours, but also to bodily, emotional and cognitive dimensions, urging the patient to remember also the physical sensations and emotions of which he/she was prey” [54].

Within the framework of the therapeutic relationship, the central objective is to build the conditions for the patient to propose, during a session, the fundamental pathological pattern afflicting him/her. This situation, which, in the psychoanalytic tradition, is defined as enactment (actualisation, implementation) and directly involves the patient and the therapist, comes from Bara, identified as the fulcrum of the therapy, which allows the patient to build “self-knowledge”, his/her own embodied, emotional, visceral and cognitive awareness. Enactment, therefore, writes Bara, is not a threat to therapy, as, however, contemporary cognitivists consider it [54], but is rather a crucial opportunity to induce a therapeutic awareness raising. In this work, both the therapist and the patient can enjoy the benefits of Buddhist meditation, of which, today, unlike in the recent past, “I can afford to explain the references” - states the author [54].

It is quite evident that the cognitive-behavioural model no longer exists but has dissolved in the criticism implemented by the relational therapist. To complete the framework, even the symbolic one, of the liquidation of cognitive-behavioural dogmas, Bara informs us that the duration of his therapies is not necessarily short: they can last for years, with hundreds of sessions. His setting is, as a rule, formal, namely based on the sofa, or rather, on a structure that he modestly refers to as a “chaise longue” [54].

We are therefore in a position to envisage a departure from the theoretical schemes that have dominated psychology and psychotherapy to date and to start a collective path to arrive at new syntheses.

The nature of psychotherapy and its field of action. Janet’s lesson

Recently, Pierre Janet has returned to the centre of the theoretical debate, but, strangely enough, not due to his fundamental 1923 text, *Médecine psychologique*, but rather due to his writings during the 1880s and 1890s on automatic and dissociative mechanisms. These writings were mostly played in an anti-Freud key, but, at least to us, the 1923 text seems much more stimulating, for which reason We believe it is worth considering two themes: the nature of psychotherapy and the relationship between psychology and medicine.

“Psychotherapy” writes Janet, “is a set of different types of therapeutic procedures, both physical and moral, applicable to both physical and moral diseases (...) In a word, psychotherapy is an application of psychological science to the treatment of diseases” [55] (p. 244). Diseases, therefore, can be said to be “psychically prevalent” and with “somatic prevalence”, but they are all a field of activity of psychotherapy. In addition, psychotherapy is a set of procedures that are not necessarily only psychic (“moral” in Janet’s language), but also physical. This means that psychotherapeutic treatment can also include procedures that use bodily methods, nutrition and other interventions on the body as a whole. In fact, Janet writes that overfeeding, especially “too rich in meat”, can result in “self-intoxication that can play an essential role in psychosis”. Therefore, “regulating feeding is often the first task of psychotherapy” [55]. Janet, very modernly, highlights the role of nutrition that can cause biological alteration (he calls it self-intoxication; today, we call it inflammation) that can play a central role in the pathogenesis of even serious psychiatric disorders, regarding which we have an abundance of studies which, in our work, we have analysed repeatedly [2,9]. Of equal importance is the role of the body and mind-body techniques in the psychotherapy setting.

From these premises, Janet comes to the conclusion that the union between medicine and psychology is essential and, I would say, natural, given that, he states, “it is the sciences that are separated”, not reality. This union is the basis of the paradigm of Psychoneuroendocrineimmunology and of the scientific, clinical and didactic work promoted by the Italian Society of Psychoneuroendocrinoimmunology [56].

The contribution of PNEI to the productive activity underway in neuroscience and psychology

The panorama we have outlined above is very encouraging for those who, like us, work on the construction of a scientific movement to overcome reductionism in life sciences and, therefore, to place the study of the human being and the consequent proposals for prevention and treatment in a systemic and integrated dimension.

The obstacles that have historically stood in the way of achieving these objectives are being hit from many sides and these sides are becoming increasingly more authoritative. Essentially, what Thomas Kuhn [57] described as the preparation of a paradigm shift by authoritative and increasingly numerous exponents of “normal” science is looming.

I will attempt to outline some key points for the development of reflection and debate.

The paradigm within which neuroscience and psychology are to be fine tuned

The emergence of neuroscience has made a decisive contribution to the entry of psychology, psychotherapy and psychiatry itself into the world of science. The *in vivo* investigation of the human brain, through images, has shown that psychological interventions have effects on the function and anatomical structure of brain circuits [58]. In addition, epigenetic investigation has further demonstrated that psychological interventions in their various forms (from psychotherapy to meditation) induce changes in gene expression coding for brain receptors and neurotransmitters, thus providing a way of scientific explanation on the mechanisms of action of effective psychological interventions in the treatment of mental disorders [59].

These significant advances in biological research have removed the “psy” sciences and professions from the limbo of non-science and empirical health interventions, without any definite foundation. However, neuroimaging and epigenetics also have another effect: they unmistakably undermine the thesis of the mind-brain identity. They show, however, that the psychic dimension - which undoubtedly arises from the level of the brain and which is influenced and shaped by all biological networks (Damasio, see above) - acts retroactively on the functions and on the structure of the cerebral circuits, modifying them for better or for worse.

Neuroscience is therefore essential to psychology, but it is not a homogeneous reality: different models - reductionist and systemic - operate and compete within it. Psychology needs a non-reductionist neuroscience, the affirmation of which in the scientific field it can and, in my opinion, must, strongly support. But the opposite is also true: if neuroscience wants to advance in the understanding of the functioning of the brain, it needs psychology and, namely, to adopt a paradigm that contemplates the bi-directional interaction between psyche and biological systems, within which brain activity is to be studied.

Knowing the psychobiological network for a new foundation in psychology

As we have seen in the preceding paragraphs, major changes are taking place in the main psychological traditions. One topic, in particular, acts as a bridge between the psychodynamic tradition and the cognitive-behavioural tradition, at least if we consider the third wave: the centrality of the therapist-patient relationship. In addition, another bridge connects contemporary psychoanalysis to cognitivism, at least in the Italian variant: the common acceptance of the attachment theory [16,35,60,61]). Lastly, whilst amongst psychodynamic theorists there is a growing understanding [43] that the patient’s symptoms and behaviour are not negligible epiphenomena, amongst cognitivists the idea seems to be gaining ground that remaining on the surface, without assessing the patient’s family context and personal history, what they define as individual “historical vulnerability” [62], greatly limits the effectiveness of the therapy.

Finally, in both traditions, confidence in the therapeutic possibilities of psychotherapy and a parallel reduction in the expectations reserved for pharmaceuticals have grown. This new awareness has been helped by the growth of evidence of effectiveness concerning, not only cognitive-behavioural therapy, but also other traditions and, especially, the psychodynamic tradition.

This growing convergence, be it tacit or explicit, which signals the common aspiration to build a more organic and unified “anti-reductionist” perspective of a person with mental suffering [36,40], is limited by the poor assessment and understanding of the overall functioning of the human body.

Let us try to break down this critical statement, by identifying the old and new obstacles to the realisation of an effective anti-reductionist approach.

Human nature from the point of view of psychology

We are living in a phase in which there is a growing effort, on the part of researchers and operators with various orientations, to produce empirical evidence on the effectiveness of psychological interventions. This, of course, is a very positive fact, which reverses a

historical neglect of the professions to verify the results of their work [56]. The other side of the coin is a widespread indifference to the theory [63], namely, to the reference system that allows for the interpretation of data, for the provision of explanations on the mechanisms that are presumably at the basis of the results obtained, thus enabling the progress of psychological sciences.

There is no doubt that psychoanalysis is the tradition that has most posed the problem of producing theory on the fundamental characteristics of human nature and, therefore, on the functioning, not only of the mind, but also of the body as a whole. On this ground, the different theories have inevitably been influenced by the philosophical currents prevailing in different epochs. Following Eagle [40], classical psychoanalysis would have its foundation in the Enlightenment and positivist perspective, whilst contemporary psychoanalysis would be strongly influenced by the post-modern, constructivist approach. Stephen Mitchell and Margaret Black [64] point out that what they call “Freudian revisionism” has weakened the general theoretical scope of psychoanalysis, “debiologising Freud” and with this, also renouncing the provision of a comprehensive interpretation of the functioning of the human being. In short, the general Freudian theoretical framework, which “contemporary psychoanalysis” considers obsolete and, in any case, inadequate due to its biological reductionism, has not been replaced by another theoretical framework that is, indeed, in line with the ideology dominant on the “decline of the great narratives”, of which classical psychoanalysis is certainly an integral part.

The consequences of this situation are painfully described in a work by Morris N. Eagle [65,66] who, analysing the style of writing, thought and mental habitus of the main psychoanalytic authors (from Klein to Bion to Lacan), concludes that we are faced with arbitrary, obscure theories, without solid empirical references, built on limited clinical cases, mostly resulting from our own school [65] (pp. 217-219). For this reason, there is no scientific progress in psychoanalysis, writes Eagle, which is even more hindered by the fragmentation of schools, which, under the mask of pluralism, actually cultivate “local orthodoxies”, which worsen the degree of obscurity in writing and thinking that is then reflected in the formation of psychoanalysts.

Despite this uninspiring panorama, in accordance with the spirit of Eagle’s reflection, it is appropriate and useful to note that, from the psychoanalytic tradition, there are questions of great topicality regarding fundamental theoretical knots, removed, it appears to us, from the horizon of the great part of contemporary psychoanalysis and on which, on the other hand, heterodox cognitivism has given answers marked by biologism.

The fundamentals appear to us to be as follows:

The Freudian perspective of biology, in its mechanism, is certainly currently unusable in psychology, but is a psychology without biology possible?

Doing psychology without biology is a reductionist error, symmetrical to the biologist error. As we have seen above, a non-reductionist biology is currently available, which enables us to describe the human being as a biological organism with a developed psychic apparatus, which is influenced and which, in turn, influences the biological dimension. This enables psychological sciences to identify the fact that psychic balance can be influenced by a variety of factors: endogenous biologicals, such as the microbiota and the immune system [67], environmental factors, such as exposure to pesticides, especially in the early stages of life [68]; behavioural factors, such as nutrition [69] and sedentariness [70]; from social status, such as living in a country with a high rate of social inequality [71]. In short, it is possible to bring to the horizon of contemporary psychology, regardless of its orientation, the assessment of the individual in its entirety, avoiding biologism (in its different contemporary forms, including reductionist neuroscience) and spiritualism (in its different contemporary forms, including radical constructivism).

The Freudian perspective of the dynamic unconscious is certainly inadequate, but can the unconscious be reduced to implicit knowledge?

The Freudian unconscious is still currently the subject of radical criticism and, for decades, it has been the main target of the demolishing criticism of cognitivism towards psychoanalysis. The mind, according to classical cognitivism, is, by its very definition, rational: if decisions, thoughts and behaviours are not rational, the cause lies in the incorrect use of mental procedures. However, as of the first half of the 1950s, in parallel with the rise of the star of cognitivism, an experimental line of research was launched in its field, which shows how unreasonable cognitive processes are and how dependent they are on automatic mechanisms, taken from the domain of consciousness.

Experimental psychology studies in the last 60 years have conclusively documented that human cognitive abilities, based on rational and, therefore, conscious processes, are very limited and only occasionally used. They mostly coexist mixed with unconscious and automatic modes, many of which are well described by the experimental work of Daniel Kahneman [72].

Whilst there is no scientific evidence for the Freudian idea, deriving from Plato and Nietzsche, from the unconsciousness such as the Soul, an entity that is out of our control, a “crucible of bubbling excitement” dominated by libido and aggression, it is established that the human psyche normally uses unconscious modes of functioning that are constitutive of the personality and emotional style of each of us. In our opinion, however, these unconscious modes of mental functioning cannot be reduced to procedural (or implicit) knowledge. The patterns of regulation of intersubjective emotions and relationships, which - based on Bowlby’s research and on infant research, we know to nest in the human psyche from the earliest stages of life and which will form the basis on which unconscious models will be structured in the more advanced stages of individual development - are not of the same nature as the knowledge of how to ride a bicycle, which remains implicit in the procedural memory. The use of the expression “tacit knowledge” by cognitivists who, as psychotherapists, confront themselves with the unconscious dynamics of their patients on a daily basis, seems like a fig leaf covering the evil word “unconscious”.

The various components of the unconscious mind should therefore be analysed: early exposure to models of production and regulation of emotions; the automatic modes of the mind, perpetually oriented towards the prediction of the future and, therefore, spontaneously producing schemes and heuristics of self-regulation; the activity of defence mechanisms, the description of which is a constitutive part of the psychoanalytic background; the influences of gender and models of organisation of society, its economic and cultural structures, which constitute the historical, trans-individual matrix and the relationships in which the individual is immersed.

The Freudian vision of sexuality is undoubtedly full of erroneous and stigmatising concepts (it suffices to look at his ideas on female sexuality and homosexuality), but is a vision of humanity possible that prescind from sexual dynamics?

We are witnessing a removal of sexuality from theories, but also from the psychological clinic and its confinement to the treatment of “perversions” or disorders of sexuality. From being the pivot of Freudian metapsychology, it has become a specialist subject, the prerogative of medical sexology (or sexology tout court).

In reality, sexuality should concern the psychological sciences and professions, given that the exercise of sexuality is the most intimate form of inter-individual relationship and it is also human behaviour that has always been under the utmost social control, in various historically determined forms: from discriminatory prejudice towards the different forms of exercise of sexuality, to violent repression and ostracism. This behaviour is therefore a source of conflicts, compromises and psychic problems that are rooted in a complex matrix in which sex, gender and the search for one’s own pleasure operate.

As is now widely shared, the biological dimension of the human male and female does not coincide with gender, which is a historically determined social construction and the latter does not necessarily coincide with individual sexual behaviour.

A male or female person with a homosexual orientation may be in tune with, or in contradiction with, their gender of reference. A man can love another man and, with this, feel and behave in a very virile way (this, incidentally, gave the alibi to some “respectable” men not to define themselves as homosexual by practising so-called “active” sex with other men or with transsexuals). Thus, a woman can love another woman and feel and behave very feminine and vice versa. Not to mention transsexuals and various forms of gender transition. Therefore, it is not uncommon to find men who undergo a sex change and then, with behaviour that at first glance appears particularly bizarre, unite with a woman! It is a perfect example of the mismatch between sex, gender and individual sexual orientation.

For millennia, the bed has been a battlefield, where the winner was established at the start: man, who, in the sexual act, reiterated that a woman’s body was at his complete disposal, dictating forms and frequencies of coitus and, of course, pregnancies, ignoring the sexuality and desire of his partner. The woman had to be “taken”, “sexually tamed” and the more women they possessed, the greater the virility and prestige that a man held within the male community. The woman defended herself in various ways: from migraine, as an excuse to avoid sex, to faking of pleasure, from the bodily manifestations of contempt for her partner to betrayal, which was also the practice of married men.

Recent changes in the sexual habits of a minority part of humanity, which have given more freedom to women, homosexuals and transsexuals, do not seem to have subverted the fundamental structures that define the relations between genders, which still keep their power of shaping the psyche and bodies of humans intact [73]. This is a field of investigation that urgently requires a psychology that combines social and anthropological research with the examination of deep psychic (psychoanalysis) and biological (epigenetics) dimensions.

The concept of relationship has become pervasive, but social relationships remain outside of theory and psychotherapy

From Klein’s object relations theory to Sullivan’s interpersonal psychoanalysis, Mitchell and Greenberg’s relational model, to the relational psychotherapy of contemporary cognitivists, the relationship has become a *passé-partout* concept. Accepted by all, especially to explain the effectiveness of therapies, regardless of the school to which they belong.

Interestingly, even those who, like Stephen Mitchell, have been more committed to attribute a significant meaning to the term “relational”, distinctive of their position and a critical meaning to the term “classical psychoanalysis”, has not gone beyond the extension of the concept of relation from internal objects to interpersonal relations, from intrapsychic to interpersonal. Rightly so, in our opinion, Mitchell [74] speaks of the “intrinsically social human organism, immersed in a matrix of relationships, in search of relationality with others, in a primary, basic manner”, but the “social matrix”, also by the leader of the “relational turning point”, is observed only from the side of the relations between people, not from that of relations between people and collective structures and norms, in historically defined contexts. What I mean is that social relations are not freely established relationships between people and, therefore, easily malleable, but are rather rooted in economic, cultural and political structures that transcend individuals by determining the field where the individual psyche and relationships between people are formed. The rate of social inequality affects, not only pathologies and longevity, causing an unfavourable gap for people with a lower income and lower social status [75], but also affects mental constructs, the production of emotions, feelings and mental automatisms that populate what, with Bourdieu [73], we can refer to as “social unconscious”, which is androcentric and structured in polarity of domination and submission, which, depending on the historical phases, can be named in various ways: masters and workers, superiors and inferiors, winners and losers. The matrix of social relations spontaneously produces, as a natural phenomenon, the tendency of the submissive to internalise their social inferiority, with low self-esteem, little control over their lives, anxiety, shame, anger and frustration [76]. States of the mind that, as Bourdieu suggests, inscribe themselves in bodies, marking posture and gesture and which, today, on the basis of epigenetic research, we know mark cells and systems, including the central nervous system.

This social dimension, of which Freud has highlighted the purely repressive side of individual impulses and which has found little interest in the psychoanalytic tradition, with the exception of Reich, Fromm and Erikson, in our opinion, cannot remain confined to the

specialism of social psychology, but enters into the theoretical refounding of psychology and clinical practice, capable of probing even the social unconscious.

Pathogenesis and diagnosis of mental disorder

It is well known that, since its third edition (1980), the DSM has radically changed its skin, closing the previous phase marked by the influence of psychoanalysis on psychiatric diagnosis systems. With the third and fourth edition (1994), diagnosis is no longer dimensional, but categorical, multiaxial, centred on criteria of presence/absence of symptoms.

The fifth edition (2013) has maintained the categorical symptomatological approach in the classification of mental disorders, with some openings in a dimensional sense. The debate, in the world of psychiatry, has been polarised between the advocates of the “spectrum” and those of the “category”: the former claiming a continuum of symptoms, ranging from healthy to sick; the latter clearly distinguishing health from disease through a group of symptoms with a numerical threshold. The echo of the debate is present in numerous passages of DSM-5, including the presentation of new groupings, based, we might say, on a main symptom or the proposal of an alternative classification of personality disorders [77] (pp. 883-906) that coexists with the “traditional” system. In short, the general impression is that the new edition of the DSM has further complicated both the understanding of pathological phenomena and their classification.

The National Institute of Mental Health (NIMH), in recognising the weakness of the DSM approach, proposed the launch of a programme for the search for new criteria, which it has called Research Domain Criteria (RDoC). The assumption of RDoC is that, “unlike medicine, in psychiatry, diagnosis is confined to subjective symptoms and observable signs” [78]. Hence the need also to provide psychiatry with objective diagnostic criteria. How? By classifying “mental disorders as brain disorders”.

Putting it this way would seem to have returned to the chemical paradigm of the 1980s: depression as a disorder of the brain produced by the imbalance of neurotransmitters. In fact, the leaders of the NIMH propose to move from the examination of symptoms to that of “social, behavioural, physiological and genetic systems” and, on this basis, to stratify patients into organised categories on this integration of biological data and life experience.

It is a proposal that seems rather confusing, since how can you get into the funnel of the “disorders of the brain”, of the brain alone, the set of data that come from the social and individual life of a person, as said researchers propose?

Does a person who is frequently in a bad mood, who does not enjoy satisfactory emotional and social relations, who has little satisfaction at work or who is unemployed, who has a high-calorie, low-quality biological diet, who sleeps poorly, who does not exercise, who has an active immune system in the inflammatory sense, have a brain disorder? Or is it not the whole person who has a disorder that causes physical and mental suffering that limits his/her functioning? A disorder that, in the absence of anything better, we can also continue to call depression, but on the condition that we do not reduce it to the brain or, worse, to some neurotransmitter, but rather bring it back to a set of endogenous and external sources, which the therapist or, better, the therapeutic team, finds in that subject and which become the basis of the treatment plan.

As Yakov Shapiro [36] suggests, it could be concluded that the patient should not be seen as suffering from a chemical imbalance, distorted knowledge, or a collection of symptoms. However, the patient should neither be seen as a bundle of old and recent relationships, which appears to be the horizon of the reflection of Shapiro and other psychodynamic authors.

The resistance, in the psychoanalytical field, as well as in the more general psychotherapeutic field, to adopt formalised diagnostic systems that also allow a quantitative measurement of clinical outcomes, is well known. For this reason, we think the work of the group

of psychodynamic authors, led by Vittorio Lingiardi and Nancy McWilliams, who have set up an alternative system known as the Psychodynamic Diagnostic Manual (PDM), now in its second edition [37], is very valuable. The basic concepts that have guided the work of drafting PDM-2 are: 1) The description of the entire range of functioning of the individual “promoting an integration between nomothetic and idiographic knowledge” by highlighting what unites and what differentiates individuals from each other; 2) consequently “highlighting the entire spectrum of psychic functioning, PDM-2 is proposed as a ‘taxonomy of people’, rather than as a ‘taxonomy of disorders’; 3) overcoming the tendency of psychoanalytical reports formulated in terms of competing metaphors and theories that have generated more disagreements than consensus” (The quotations are taken from the Introduction).

The potential to capture the entirety of the mental functioning of the individual can truly be realised if the whole individual is to be studied and, therefore, also in its biological functioning related to his/her mental functioning. This programme, which integrates the study of pathogenetic mechanisms, seen in their mental and biological dimensions, with the refinement of diagnostic tools, undoubtedly presents a certain level of complexity, but it could be seen as the challenge that the psy sciences bring to all care sciences.

In fact, are we sure that the poor solidity of pathogenesis and diagnostics is a specific feature of psychology and psychiatry? Do pathogenesis and diagnosis in medicine present levels of greater scientific precision? Is there a single cause for the genesis of atherosclerosis, a single biological mechanism, a single effective therapy? We know that this is not the case: atherosclerosis is a complex phenomenon that involves many factors with great subjective variability. You can have a heart attack with arteries that have no traces of atherosclerosis, the result of an inflammation and stressful condition that are out of control [79]. The same question can be asked for the majority of chronic diseases, which are the main cause of illness and death in so-called developed countries. From “precision medicine”, on which we have been writing for some years, far from closing the era of empiricism in medicine, appears the latest edition of the “therapeutic illusion” [80], which is studded with the history of the reductionist medicine of the twentieth century.

Prevention and therapy

In the prevention of psychiatric disorders, disciplines and health practices that have a different history from psychology and psychiatry, such as meditation, yoga, tai ji quan, qi gong; or a history that has nothing to do with psychology, such as nutrition and physical activity plays a significant role. The evidence of effectiveness is now numerous and has recently been revised [2] (chapter 18), to which we refer for details. Ignoring these evidences is no longer possible for those who deal with mental health, both as a single professional and as a dedicated health facility.

In therapy, we believe that the time has come for psychotherapists to make an effort at theoretical and practical unification.

Both guidelines are, as we have seen, preparing for mutual contamination. For this process not to be an opportunistic eclecticism, a unified scientific paradigm is needed that allows for the reorganisation of the strong points of both traditions.

The paradigm we propose is that of PNEI, which solves numerous scientific issues that are crucial for psychology and psychiatry, based on the analysis of two-way communication between the psychic and biological dimensions [9]. The strong points of the cognitive-behavioural tradition to be used, in our opinion, in every new psychotherapeutic model, concern: the strong attention to the here and now, the detailed investigation of dysfunctional behaviours and thoughts and the related techniques of proven effectiveness aimed at triggering an empirically verifiable change.

Recently, the cognitivist tradition has included, albeit with strong differences within it, the need to investigate the patient’s stable emotions and mental structures, known as patterns, which refer to the need for an examination of the patient’s personality throughout said patient’s development.

These last aspects are the strong points of the psychodynamic tradition: the centrality of early experiences, the internalisation of operating models, the focus on intrapsychic conflicts and the unconscious component that feeds them, the strong attention to induce a raising of awareness in the patient, partly in the form of “corrective emotional experience” [81], as a solid basis for a robust and stable change over time.

In our opinion, the enhancement of the psychodynamic approach can benefit from the profound revision, carried out by certain psychodynamic theorists mentioned above, of certain categories of the Freudian tradition, of dubious scientific foundation, such as: the different phases of child development (oral, anal, genital and Oedipal); the conception of the unconscious in exclusively “dynamic” terms; the so-called “psychic determinism” that assumes that our life is lived unconsciously, as it is shaped by unconscious forces that are in conflict with each other; the perspective of society as a mere suppressor of individual impulses.

A new perspective of prevention and therapy cannot, however, be based solely on the profound renewal of the two main psychotherapeutic traditions. Traditions of systemic, bodily and emotional approach should give their outstanding contribution to this process.

The phase of profound renewal, which could be opened with determination, disinterest and courage by all, would allow us to get closer to the point of a theoretical-practical turning point aimed at by the reasoning proposed so far: the training of integrated and multidisciplinary teams composed of professionals with a “psy” specialisation (psychologists, psychiatrists, teachers of various forms of meditation) and professionals with a biomedical specialisation (doctors, nutritionists, manual therapists) capable of proposing a diagnosis and an integrated therapeutic path, namely, that concerns the person as a whole [82].

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