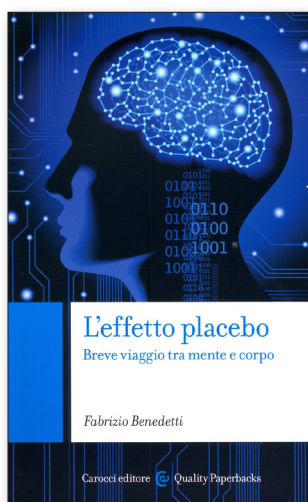


BOOK REVIEWS, NOTES AND COMMENTS

Edited by
Federica Napolitani Cheyne



**L'EFFETTO
 PLACEBO**
**Breve viaggio tra
 mente e corpo**
 Fabrizio Benedetti

Roma: Carocci; 2012.
 127 p.
 ISBN
 978-88-430-6494-6
 € 12,00

[*Placebo effect. A brief
 journey into the brain
 and body*]

Fabrizio Benedetti is internationally known for his behavioural and neurobiological work which has thrown much light on the placebo and nocebo effects – until recently a poorly understood mix of different phenomena served by different mechanisms. While this short monograph is addressed to lay readers, it is also a highly useful primer for physicians, nurses, and biomedical scientists not acquainted in detail with the progress in this area. Specifically, it contains the essential of two previous monographs by the same author published by Oxford University Press: *Placebo effects. Understanding the mechanisms in health and disease* (2008), and *The patient's brain. The neuroscience behind the doctor-patient relationship* (2010).

The latter title leads us to the origins of the term *placebo*, which is mainly known today for its importance in clinical trials on which Evidence Based Medicine is largely founded. But in medical practice, a placebo was (and still often is) a treatment administered by a physician either aware, or unaware, of the absence of any intrinsic therapeutical action. In fact, the “effectiveness” of a placebo is a joint function of the patient's persuasion that treatment really works and the doctor's belief that a treatment supported by reassuring words can have positive effects - hence the importance of the double-blind method in clinical trials and the difficulties in obtaining a reliable result whenever this method cannot be used; or when the experimenters and/or the subjects succeed in decoding the treatment they are administering or receiving.

At this point, however, we are only at the end of the beginning of Benedetti's analysis. In the first place, much emphasis is placed on the difference between the *placebo effect* and the *placebo response*: the first one being any improvement after an inactive treatment, the second one

being the change specifically attributable to the subjects' expectancies and other psychological factors, including the type and quality of the physician-patient relationship. (The first term, however, continues to be widely used also with the meaning of the second one). The author goes on to explain the wide variety of mechanisms which underlie either the same or different placebo effects. For example, in the typical double blind trial the placebo response is due mainly, if not exclusively, to the subjects' expectancies. Symmetrically, expectancies also account for the opposite (nocebo) response triggered e.g. by the perusal of a drug information pamphlet (in Italy “il bugiardino”, the small liar) which carries increasingly long lists of possible side effects, according to the strategy of “defensive pharmacotherapy”. By contrast, classical (pavlovian) conditioning (i.e., one of the varieties of learning) accounts for the fact that after a series of pain-killing morphine injections pain can be considerably abated by the administration of a saline solution, all other paraphernalia being equal. Symmetrically, conditioning also accounts for the fact that cancer patients, after a series of antitumour drug treatments, can start being sick (vomiting, etc.) before the drug is administered, when entering the hospital or clinic room, or even when getting out of their home on their way to the hospital.

There is now an astonishing, almost infinite, variety of experimental models evolved to investigate placebo and nocebo responses and their mechanisms: e.g., confrontation between overt and covert treatments (the latter mainly in subjects who receive intravenous fluids to which a drug or a placebo can be secretly added at unforeseeable times); 2 x 2 factorials (drug vs placebo x right vs wrong information to the subject about the treatment received); and so on and so forth. Correspondingly, placebo and nocebo responses vary quite markedly both within subjects with the same pathology, and between pathologies. The more sensitive (and more intensely studied) conditions are pain and depression, with many data often showing the additive effects of active treatment and placebo. As concerns pain, in addition to the many data in different parts of the book, an additional chapter is devoted to the neurophysiological, pathophysiological and behavioural bases of the placebo's particular effectiveness; and a related problem is addressed in still another chapter on the role of the frontal lobes in the placebo response, analysing the differences in pain responses between Alzheimer dementia patients, vascular dementia patients and other neurological conditions, and also discussing the methods for reliable pain assessment in subjects with an impaired communication capability.

But, the apparently simple additive model mentioned above is in reality a much more complex affair, as shown

by the controversies about the differences observed when conventional or active placebos are used. (An active placebo is a treatment having some of the effects of the active treatment, but not the main therapeutical effect: e.g. the benzodiazepine lorazepam, causing sleepiness and dizziness, was used as active placebo in a study on the effects of morphine and gabapentin on neuropathic pain). At the opposite end, favourable placebo responses in cancer patients have never been confirmed by rigorous assessments, while nocebo responses are unfortunately not unusual, as already mentioned.

Some of the more apparently bizarre varieties of the placebo response come from the field of sport and doping, to the point that such a response can be shown without using an active drug treatment: for example, in training sessions, by secretly and progressively reducing a weight to be lifted on an extended leg after inactive treatments, so as to make the subject believe that his muscular force is progressively boosted, and then checking that the weight-lifting capacity has been really increased by tests with heavier and heavier loads. Placebo and nocebo effects on sexual performances are also quite remarkable, in agreement with the important positive and negative roles of psychological factors such as expectancies, performance anxiety, etc. It goes without saying that the popular "blue pill" and its blue fake have been used in quite a few of these studies.

Additional thorny problems are encountered in the attempts to assess placebo and nocebo responses when blinding procedures cannot be used, or are unsatisfactory, as is the case in several areas ranging from acupuncture to the hundreds of different types of psychotherapies. Incidentally, the brief chapter on psychotherapies is relatively weak compared to all others. This is due not only to the fact that the methods so far evolved to bypass the aforementioned difficulty are still far from being satisfactory, but also to the author's wise avoidance to get in the hot discussion about the assessment of outcomes - a topic which cannot be covered in a few words.

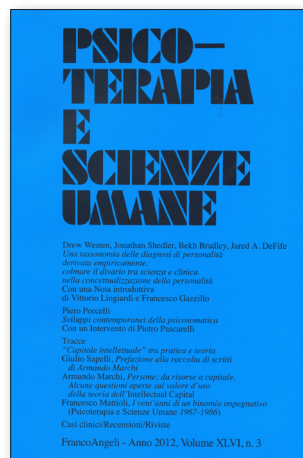
Recent studies have started throwing light on the mechanisms of various types of placebo and nocebo responses, the most obvious examples being again in the area of pain modulation. For example, the placebo effect mimicking pain-killing by morphine has been shown to be due, at least to a considerable extent, to the release of endogenous opioids, being reduced or blocked by naloxone and potentiated by proglumide, a cholecystokinin (CCK) antagonist (CCK is an endorphin antagonist). By contrast, the placebo response mimicking the effects of a non-opiate analgesic, the NSAID ketorolac, is blocked by the cannabinoid antagonist rimonabant. This points to a substantial role of endocannabinoids in the modulation of pain and related responses, which could help explaining the favourable effects of cannabis derivatives in neurological and other conditions. The progress in this area is fascinating, as shown by other types of data obtained with imaging, genetic and immunological methods which support the specificity of different placebo and nocebo responses, but cannot be summarized here.

Last, but not least, the two final chapters. One is devoted to a clear analysis of the exponential growth of ethical

problems (and conflicts between various interested and responsible parties) in parallel to the increase in the sophistication of the experimental and non-experimental uses of placebos. The other one is devoted to some startling examples of placebo effects in daily life, ranging from value assessments concerning commercial products to political opinions.

In 127 pages, including bibliography, one could not expect more. But, this reviewer hopes that an updated edition of this precious work can include a discussion of the relations between placebo and nocebo responses and the so-called Attribution processes; that is, the highly variable and complex relations between what people think about what makes them healthy or ill, about what accelerates or delays the healing of their ailments, and what really goes on as assessed by objective methods.

Giorgio Bignami
già Istituto Superiore di Sanità, Rome, Italy
welin.bignami@mclink.net



**PSICOTERAPIA
E SCIENZE UMANE**
Quarterly journal
PF Galli, M Bolko,
P Migone (Eds).
vol 46, no. 3 (2012)

Milano: FrancoAngeli
Editore
ISSN 0394-2864
e ISSN 1972-5043
www.psicoterapiaescienzeumane.it

[Psychotherapy, Humanities,
and Social Sciences]

Even relevant scientific articles are rarely cited after a decade from the original publication. Editorials experience an even shorter duration. Reviews of books do not normally survive the fate of the book they refer to. Thus, it can be considered a surprise to see a review (1) that is reprinted twenty-five years after the original publication, still keeping its interest and freshness. It has been published in the issue no. 3/2012 of the Italian quarterly Journal *Psicoterapia e Scienze Umane* ("Psychotherapy, Humanities, and Social Sciences").

The reason might be that the review, reflecting on the role of the Journal *Psicoterapia e Scienze Umane* two decades after the first publication in 1967, offers the reader a great deal of information that still is of interest today. Contextualizing the origin of the Journal in the Italian intellectual life of the 1960s-80s, the review primarily reflects on the interaction between psychotherapy and human sciences and explains how the Journal was "rooted in a praxis that applies the theoretical corpus of psychoanalysis to education and therapy, keeping the milieu of humanities and social sciences as reference points for verifying the role and outcomes

of the therapeutic activity and stressing the need for interdisciplinary work" (1).

The Journal was founded in 1967 by Pier Francesco Galli. The environment was that of the *Milan Group for the Advancement of Psychotherapy*, a group of eminent psychoanalysts and psychotherapists, who from the 1960's had been strongly engaged in education activities, publication of books and participation to debates. The topics at the core of the review fully maintain their interest today. Among others, the interdisciplinary approach (specifically, the need to define common grounds where "our technical solitude meets the technical solitudes of other specialists"); the way to organize education (and continuing education) of psychotherapists; the coexistence between theoretical issues and therapeutic practice; the attention to the more general cultural and to political issues.

Together with original articles, debates, presentation of clinical cases and book reviews, the Journal includes a section, "Traces", devoted to reproducing papers that continue to stimulate a reflection even years after their first publication. The scope of this section is entirely consistent with the interdisciplinary attitude of the Journal. For instance, in the same issue where the review is published, a discussion on the role of intellectuals, and of the intellectual capital, takes place. The intense experience of Armando Marchi, who worked in the sector of human resources as a team leader of the *Barilla Lab for Knowledge and Innovation*, witnesses the need to pay attention to the complexities and wholeness of individuals as opposed to the over-simplified attitude of organizations that are mainly focused on (or obsessed with) performance measurement (2).

Another example of the interdisciplinary approach of the Journal is provided, in the same issue, by the article by Piero Porcelli, the most prominent Italian researcher on psychosomatics, analyzing current developments in psychosomatics and centered on the notion of the relative weight of biological and psychological factors (3). In the meantime, the accompanying article by Pietro Pascarelli discusses, from the perspective of medical anthropology, the limitations of the biomedical paradigm of this discipline, with its enduring mind-body dichotomy (4).

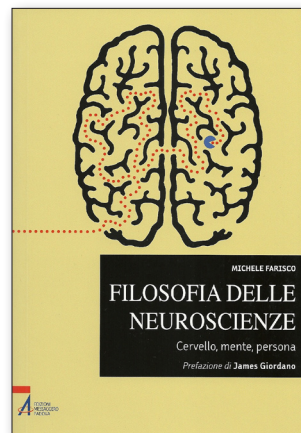
A sample of the most important papers can be found at the Journal website (www.psicoterapiaescienzeumane.it). Even though it would be impossible to mention all the topics covered during the years, it is fair to say that they dealt with both relevant and controversial issues: from the impressive increase in the use of antidepressants in the population, to the new classification of mental disorders, to the need for a verification of the outcome of psychotherapies and in the same time for a sensible application of Evidence Based Medicine.

The present Editors, Pier Francesco Galli, Marianna Bolko and Paolo Migone, should be praised for their ability to guarantee the independence of *Psicoterapia e Scienze Umane*. The Journal does not accept advertisements and does not rely on funding from associations/institutions. In an era of crisis of the entire editorial sector, the fact that a Journal only depends on subscriptions of individuals (and libraries) is a reason for optimism and suggests that, in the end, quality pays off.

References

1. Mattioli F. I vent'anni di un binomio impegnativo: Psicoterapia e Scienze Umane 1967-1986. *Psicoterapia e Scienze Umane* 2012;46(3):416-422. (Reprinted from *la Rivisteria* 1987;10:30-33.)
2. Marchi A. Persone: da risorse a capitale. Alcune questioni aperte sul valore d'uso della teoria dell'*intellectual capital*. *Psicoterapia e Scienze Umane* 2012;46(3):409-415.
3. Porcelli P. Sviluppi contemporanei della psicosomatica. *Psicoterapia e Scienze Umane* 2012;46(3):359-388.
4. Pascarelli P. La psicosomatica nel paradigma biomedico e nella prospettiva dell'antropologia medica. *Psicoterapia e Scienze Umane* 2012;46(3):389-402.

Giuseppe Traversa
Istituto Superiore di Sanità, Rome, Italy
giuseppe.traversa@iss.it



**FILOSOFIA DELLE
NEUROSCIENZE**
Cervello, mente,
persona
Michele Farisco

Padova:
Messaggero; 2012
155 p.
ISBN 978-88-250-2854-6.
€ 14,00.

[Philosophy of
neurosciences.
Brain, mind, person]

In a recent and influencing book about contemporary biopolitics, titled *The Politics of Life Itself*, the English sociologist Nikolas Rose writes about the "biologization" of human being, that is the centrality of biology in explaining human nature. Within this strategy, according to Rose neuroscience plays a key role, and it may be inscribed into a paradoxical outcome of the western culture. In fact, while from the twentieth century the man of western democracies has interpreted himself as a subject with a psychological centre expressing his identity as subject of rights and duties, from the half of the Century he started to explain himself and his relationships and to act on himself as being shaped by his biology. As a consequence what Rose calls "somaticization" is increasingly influencing our way to think ourselves and particularly our mental life, that is our thoughts, wishes, emotions and behavior. Somaticization means that our desires, moods and suffering are not included in the psychological space anymore, but located in the body as such, more specifically in a particular organ, the brain, explained according to the neuroscientific paradigms. Thus, according to Rose, we have become "neurochemical selves". There is no doubt that neuroscience offers new poten-

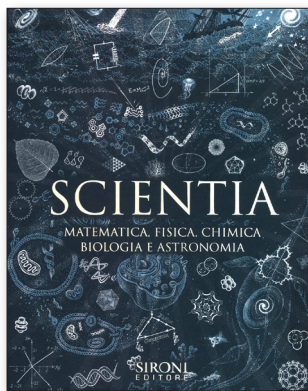
tial arguments for a reductionist assessment of human nature, which as such is not totally new from a theoretical point of view. What is new from contemporary neurotechnology is the possibility not only to visualize the human inner body in general, but particularly the functioning of human *brain* and (but this is exactly the point at stake) the functioning of human *mind*, so that, for instance, neuroimaging is assumed as a collection of “pictures of mentation”.

Notwithstanding the astonishing progress in the study of brain functions which took place in recent years, especially related to the different neuroimaging technologies, it is necessary to take into account the epistemological limits of such neurotechnologies, that produce a never completely corresponding representation of the real brain. In other words, it is necessary a critical reflection about the potential and the limits of the neuroscientific explanation of human nature, taking into account its epistemological limitation and its ‘extra-scientific’ premises.

Such a critical assessment is the aim of the present book of Michele Farisco, which develops a philosophical account of neuroscience trying to elaborate a not reductionist assessment of human person and personal identity. Farisco tries to argue for a dynamic and relational personal identity, grounded on the “triangle” brain-mind-person, which could be the starting point for an interdisciplinary discussion about the human nature. We think, as authoritatively stated by James Giordano in his preface, that this is the most important message of this book: it is necessary to develop an inter- and multi-disciplinary approach to human nature and to human person in order to properly manage the complexity of the scientific knowledge and related practical and legal consequences. A philosophy developed as a methodological and epistemological reflection in dialogue with ethics and anthropology, as the present work tries to elaborate, can give us the conceptual tools necessary for such an approach. The present book would like to be a starting attempt, and we hope many reactions and several other suggestions will follow.

Leonardo Nepi

Università degli Studi di Roma “Tor Vergata”
nepil@hotmail.it



SCIENTIA
Matematica, fisica,
chimica, biologia e
astronomia

Sironi Editore 2012

410 p.
ISBN 978-88-518-0210-3
€ 22,00

[Scientia. Mathematics,
physics, chemistry, biology
and astronomy]

ics, physics, chemistry, evolution, biology and astronomy, bringing readers to experience and enjoy science in its different expressions.

Scientia starts with the basic mathematical and physical formulas that rule much of our world, and closes with information about the structure of the cosmos, like galaxies and black holes, offering the chance to witness the amazing discoveries of scientists over the past millennium.

In the first volume, *Q.E.D.* (abbreviation for the Latin phrase *Quod erat demonstrandum*, which means, “what had to be proved”), the author, Burkard Polster, demonstrates the most famous “proofs” of fundamental mathematical principles (Pythagoras’s theorem, Archimedes’ method for finding the volume of a sphere, etc.).

The second volume, *Useful mathematical and physical formulae* of Matthew Watkins, contains a collection of the formulae most commonly used for studies such as quadratics, calculus and trigonometry. Besides, the author tackles topics of physics like simplified explanations of the Newton’s laws of gravity, the Snell’s laws of refraction, the theory of relativity, etc.

The third volume, *Essential elements*, is about chemistry. The author, Matt Tweed, gives a short look at the history of chemistry. The structure of atoms, the chemical elements with their properties and interactions (the periodic table of the chemical elements is reported), quarks, subatomic particles, atomic bonding and radioactivity are then explained.

Evolution is the title of volume four. Gerard Ceshire explores the history of evolutionary theories, from Lamarck to Darwin, going through the latest researches carried on by genetic engineering up to Sheldrake and his theory of morphic fields and morphic resonance. DNA and genome, natural selection and epigenetics are also explored. *The human body* is the fifth volume. The author, Moff Betts, starts with a bit of history (the renaissance of anatomy heralded by Vesalius in 1543) followed by the investigation of the development of life on earth. Descriptions of DNA, genetics, embryology and cells, as far as the structure and systems of the whole body, are the main objects of this beautiful section of the book.

The last volume, entitled *The compact cosmos*, is a journey through the universe. Matt Tweed explores the evolution of stars, the formation of planets and tells us about galaxies, black holes, pulsars, nebulae, dark matter, red shifts, and much more.

Scientia concludes with some useful and fully detailed appendices.

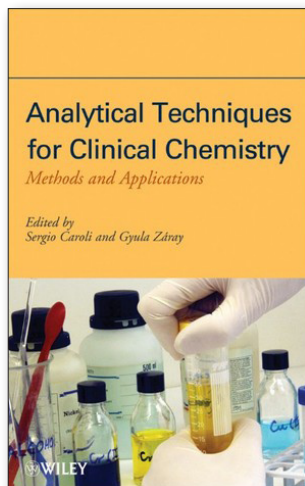
As a whole, the book serves as a good introduction to the study of these subjects for beginners, students and for all those who are interested in science. Indeed it is easily accessible to the general readers and offers precious and useful information about the fascinating complexity of our world.

It is made of high quality paper and ink and is beautifully illustrated and packed with engravings and original drawings and diagrams. The elegant design is clearly visible in the cover, and in its many attractive paintings as well.

Maria Cristina Barbaro and Sandra Salinetti

Istituto Superiore di Sanità, Rome, Italy
maria.cristina.barbaro@iss.it - sandra.salinetti@iss.it

Scientia collects together six short volumes, formerly published by Wooden Books, on the topics of mathemat-



ANALYTICAL TECHNIQUES FOR CLINICAL CHEMISTRY
Methods and applications
 Sergio Caroli and Gyula Záray (Eds)

Chichester:
 Wiley-Blackwell; 2012.
 838 p.
 ISBN 9780470445273
 € 124,80

This book details the role played by analytical chemistry in fostering clinical research. Readers will discover how a broad range of analytical techniques support all phases of clinical research, from early stages to the implementation of practical applications. Moreover, the contributing authors' careful step-by-step guidance enables readers to better understand standardized techniques and steer clear of everyday problems that can arise in the lab.

Analytical Techniques for Clinical Chemistry opens with

an overview of the legal and regulatory framework governing clinical lab analysis. Next, it details the latest progress in instrumentation and applications in such fields as biomonitoring, diagnostics, food quality, biomarkers, pharmaceuticals, and forensics. Comprised of twenty-five chapters divided into three sections exploring Fundamentals, Selected Applications, and Future Trends, the book covers such critical topics as: implementation of quality systems; uncertainty in clinical chemistry measurements; metal toxicology in clinical, forensic, and chemical pathology; role of analytical chemistry in the safety of drug therapy; atomic spectrometric techniques for the analysis of clinical samples; biosensors for drug analysis; use of X-ray techniques in medical research.

Each chapter is written by one or more leading pioneers and experts in analytical chemistry. Contributions are based on a thorough review and analysis of the current literature as well as the authors' own firsthand experiences in the lab. References at the end of each chapter serve as a gateway to the literature, enabling readers to explore individual topics in greater depth. Presenting the latest achievements and challenges in the field, *Analytical Techniques for Clinical Chemistry* sets the foundation for future advances in laboratory research techniques.

From the Publisher