

BOOK REVIEWS, NOTES AND COMMENTS

Edited by

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LA SANITA' TRA RAGIONE E PASSIONE

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Marina Davoli, Luca
De Fiore, Roberto
Grilli e Paola Mo-
sconi (Eds). Roma: Il
Pensiero Scientifico
Editore; 2013. 124 p.

ISBN 978-88-490-0466-3.

€ 22,00.

[*Health service: between reason and passion*]

Almost one year ago, in December 2012, a seminar was held in Bologna to commemorate Alessandro Liberati, who had died at the beginning of the year. Some of the most renowned experts in the area of evidence-based medicine, clinical research and public health, who had known Liberati for many years, convened to give a contribution. Now, one year later, a book that includes their interventions has been published: *La sanità tra ragione e passione*. Il Pensiero Scientifico Editore, 2013, Rome.

The book is inspired by the famous "Six memos for the next millennium", the last work by Italo Calvino, who was devising a series of lectures to be given at Harvard in 1985. He grouped his thoughts on literature under six headings (lightness, quickness, exactitude, visibility, multiplicity and consistency).

The participants of the meeting in Bologna were asked to make their contribution on clinical research and health care within each of the six headings. There were two risks. First, the "memos" might not apply to a different context; second, given the great number of participants, the global result could have been a lack of homogeneity. Indeed, both risks were avoided. The work done in preparing the meeting, together with the skillfulness of the contributors, make this book a rare example of insights for researchers, clinicians and experts in health care organization.

It would be impossible to mention all 27 contributors. It is however possible to provide an idea of the views that are presented for further discussions. With regard to "lightness", Hazel Thornton reminds us of the risks of "heavy-handed regulations": "Policymakers concentrate on competencies, neglecting conduct; they consider contracts rather than cultivate covenants; they seek to strengthen State, rather than serve Society". Moreover, in making available to each person all interventions with a clearly positive benefit-risk profile, we should not forget that "More is not necessarily better; we must dare to think about doing less, adopting a lighter touch - advocate for less early detection; less weighty treatment".

Roberto Grilli discusses the risks about the positive

attitude that surrounds "quickness" in the diffusion of medical technologies. There are many examples indicating that speed in the dissemination of a new technology is not necessarily associated with a positive outcome, and a more prudent approach might be wiser. Trevor Sheldon argues that "Of course there is often a trade-off between rapidity and quality, and trying to balance speed and reliability is very difficult; we do have to grasp this challenge, though". In this respect, we should recognize that we will almost never be in the position to wait until all the necessary evidence accumulates. Again, Sheldon adds that "We need to become more comfortable with decision making under uncertainty and find ways of helping decision makers make better use of uncertain evidence; anchoring or informing decisions with the evidence, rather than insisting it is completely based on the research evidence."

The fact that we cannot rely on "exactitude" as the only basis for clinical decisions does not lessen the commitment to reducing the areas of uncertainty. Iain Chalmers cites one of the Liberati's thoughts about the ethical requirement to publish all findings of already conducted studies and the insufficient obligation shown by researchers in trying to solve uncertainties that are relevant for patients. "Research results should be easily accessible to people who need to make decisions about their own health ... Why was I forced to make my decision knowing that information was somewhere but not available? ... How far can we tolerate the butterfly behaviour of researchers, moving on to the next flower well before the previous one has been fully exploited?"

There is a need for pursuing "visibility" in the doctor-patient relationship, especially in areas of uncertainties. As Michele Bellone argues, "Reassurance is of no help, since ignorant citizens would remain ignorant even after any reassurance". On the contrary, providing information implies to keep visible the level of uncertainty in the available evidence and to help people in reaching a decision. It is not only a quest for honesty in giving patients an accurate account of the efficacy and risks involved in any intervention. The fact is, as emphasized by Gianfranco Domenighetti, that when patients are correctly informed about the pros and cons involved in any decision, they are less prone to receiving useless interventions.

The issues raised in the area of visibility are also appreciated when dealing with the idea of "multiplicity". In a complex world, as is the case of health care and clinical research, it is preferable not to rely on simplistic explanations. In citing Carlo Emilio Gadda, Richard Smith reminds us that "Unexpected catastrophes are never the effect of a single cause. They are like a storm which is generated by a multitude of causes".

In the final chapter of the book, Rodolfo Saracci brilliantly deals with the last memo, "consistency". This is a word frequently encountered in epidemiology, with a meaning of both coherence and soundness. Indeed,

there is an impressive lack of consistency between the areas of clinical research most frequently treated by researchers and patients' needs. In trying to change this situation, two different attitudes towards advocacy may be offered. There are experts who are deeply involved with an advocacy role in the same areas that are the object of their research activity. There is also what can be considered a more "objective" attitude. For instance, the view of the economist Von Mises may apply to the implications of clinical research: "Science never tells a man how he should act; it merely shows how a man must act if he wants to attain definite ends".

Everybody would likely agree that the role of research is to add relevant new evidence to the already available knowledge; in the health sector, this translates into the aim to provide more effective options in both prevention and clinical practice. Saracci goes further, and I believe that Liberati would have agreed, in suggesting that the final aim of epidemiology, in its application to research as well as to public health, consists of two related elements: the search for truth and the search for justice.

In the end, the book *Health service: between reason and passion* provides an overall reflection on the need to attain truth in research, in the best interest of patients. At the same time, the book also appeals to the heart of researchers and clinicians who share the idea that an effective health service is a value to be cultivated in everyday activity.

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UNA VIA D'USCITA
Per una critica della
misura di sicurezza
e della pericolosità
sociale. L'esperienza
dell'Ospedale Psichiatrico
Giudiziario nello
Stato di Minas Gerais

Virgílio De Mattos
Merano/Meran: Edizioni
alpha beta Verlag; 2012.
199 p.
ISBN 978-88-7223-180-7.
€ 14,00.

[A way out. A critique on security measures and social dangerousness. The experience of the Psychiatric Unit in the State of Minas Gerais]

"...Si tibi ...compertum est Aelius Priscus in eo furore esse, ut continua mentis alienatione omni intellectu careat, ...diligentius custodiendus erit ac, si putabis, etiam vinculo coercendus, quod non tam ad poenam quam ad tutelam eius et securitatem proximorum pertinebit..." *

Marcus Aurelius, "Digestus", 1, 4, 18

The effective management of psychiatric patients who have violated the penal law (formerly the "criminally insane") is difficult for several reasons, including the survival of some obsolete norms in the penal codes of various countries. On one hand, these norms exempt the mentally incompetent defendant from the regular penalty (or reduce the penalty if the subject is "partially incompetent"). On the other hand, two millennia after Marcus Aurelius' *Digestus*, the norms prescribe the enforcement of security measures – generally the confinement in a psychiatric secure unit (in Italian Ospedale Psichiatrico Giudiziario, OPG) for a period of time proportional to the degree of "social dangerousness" (a concept with a rather shaky scientific basis) as assessed by psychiatric expertise. In the real world, this paves the way to a replication of the security measures, resulting in confinement for a much longer time (not infrequently for the rest of the subject's life) than that of the imprisonment of a "mentally competent" criminal. It is true that the laws of different countries often offer the possibility of alternative measures, e.g., the entrustment to a psychiatric service, to a community for the care of psychiatric patients, etc. Such an alternative, however, is seldom exploited for one or more of several reasons: the limitations in the services' resources; the reluctance of various parties (the family to start with) to take the responsibility for the management of a "socially dangerous" (or "potentially dangerous") person; the stigmatizing misconceptions of many people, who are scared to death by the firm belief that the "criminally insane" will reoffend (which of course can happen, but not more frequently, and perhaps less frequently – see later – than in the case of "sane" criminals after their release from jail); and so on and so forth.

At least in Italy, a remarkable exception concerns bosses of powerful and wealthy criminal organizations. These can pay some of the best lawyers and pressure and/or bribe selected forensic psychiatric consultants, who certify that the guy is mad and must be transferred from a jail to an OPG. Afterwards, additional "expertises" are aimed at obtaining the release from the OPG via an "alternative measure", e.g., the hospitalisation in a comfortable private clinic with only nominal surveillance, where bosses are practically free to resume the direction of their criminal organizations. And sooner or later the release is obtained upon certification of healing. Fiddling with such mechanisms can be dangerous for your health: e.g. in 1982, professor Aldo Semerari, director of the Institute of Forensic Psychopathology at the Rome University and a well paid forensic psychiatric expert (e.g., he provided expertises in favour of several members of the notorious Roman "Gang of the Magliana"), was assassinated and beheaded in the surroundings of Naples. He had been found "guilty" of double-crossing; that is, taking money from two rival camorra gangs to provide expertises certifying the insanity of both the respective bosses.

The book by De Mattos belongs to the same "180" series of monographs mentioned in a recent review

* "...If you are certain that Aelius Priscus is in a state of furor, that because of a continuous mental alienation he lacks any understanding ... diligently he will have to be kept in custody, and if you think it appropriate also restrained by bonds, not so much as a penalty, but rather to protect him from himself and for the safety of his neighbors..."

[Guarire si può. Persone e disturbo mentale. *Ann Ist Super Sanità* 2013;49(3)319-20, Review by Giorgio Bignami, in English]; and this, thanks to the long-term relations between the author, a Brazilian socio-criminologist and political scientist, Italian psychiatrists of the Trieste group, and jurists and criminologists, particularly two of them to whom the book is dedicated: Alessandro Baratta (+ 2002) and Raffaele De Giorgi (University of Salento), both among the leaders respectively in the field of socio-criminological studies on deviance and the law, and in that of theories of social systems (De Giorgi also has a long experience of research and teaching in Latin America). In fact, increasingly significant exchanges between the Trieste group and Brazilian mental health workers were started by seminars and conferences held in Brazil by Franco Basaglia in 1978-9, *i.e.*, shortly before his demise in August 1980 (see Franco Basaglia, *Conferenze brasiliane*, Roma, Raffaele Cortina, 2000). These relations were facilitated by the incorporation in the eighties of the Trieste Mental Health Service in the newly founded WHO Collaborating Center for Research and Training in Mental Health in Italy, whose first president was the late director of the Istituto Superiore di Sanità, Francesco Pocchiari, until his demise in 1989.

The reader must be warned that the original edition of this book was published in 2006, therefore one cannot expect to find updated information in the author's text. Additional information for the years 2005-2010 is given in the Introduction by the translator Ernesto Venturini, a former coworker of Basaglia, and also in many footnotes by the author, by Venturini, and by the editor of the Italian edition, Silvia D'Autilia. These additions provide a clear and well documented comparative analysis of the Italian and Brazilian histories and present situations in the mental health field, including OPGs. As concerns Italy, the inquiry of the Senate Public Health Commission led by professor Ignazio Marino, which documented unbelievable misdoings (part of the Commission's video can be viewed via <http://www.youtube.com/watch?v=A535K-IjVjg>), led to the approval of an *ad hoc* law (2012/9, modified by law 2013/57) which prescribes the closure of OPGs. The subsequent to-ing and fro-ing of national and regional *ex lege* provisions is not yet completed, therefore it is still impossible to foresee how many of the interested subjects will continue to be confined in regional mini-OPG's; or viceversa liberated thanks to alternative measures based on strong support by Mental Health Services, including personalised care, rehabilitation programmes and provisions aimed at solving a variety of problems, including housing and work. This problem is handled very clearly in De Mattos' book, since in Brazil it often happens that after a subject confined in an OPG is certified to be "not any more socially dangerous", he continues to be confined indefinitely in a different (generally smaller) structure with a different label (geriatric hospital, rehabilitation unit, therapeutical residence, etc.)

The first part of this work is a stimulating historical, cultural and political analysis of the progressive escalation of internment measures aimed at criminal, insane, criminal insane, socially dangerous, troublesome, un-

productive and quite a few other types of subjects with undesirable profiles – all of them deprived of most or all of their citizens' rights (from this viewpoint the provisions in our 1948 Constitution and 1978/180 psychiatric law and in the Brazilian 1988 Constitution and 2001/10,216 psychiatric law are quite similar; in addition, the Brazilian Constitution forbids life sentences, of which life confinement in an OPG, or some substitute of it, is practically an equivalent). As concerns the destinies of mentally disturbed criminals, the judgment of the author on the role of psychiatry is even more drastic than that on the role of other apparently more responsible parties, including legislators and judges: *e.g.*, "... since penal right groped its way concerning the concept of non-liability, whereas psychiatry, in its deliria of conquest, supported such a concept, it often happened that false arguments and false solutions were offered..." (p. 107); of this, quite a few examples are given, including those concerning recent neo-lombrosian trends based on neuroscientific "evidence". The author's pessimism concerning not only the present but also the future is explicit: he wanted the book's title to be "Without a way out", but the Brazilian publisher imposed the more optimistic (and marketable) "A way out".

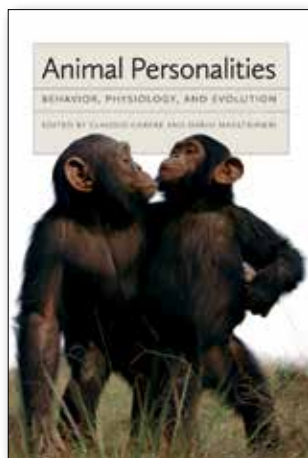
The second part of the book is devoted mainly to a critical analysis of ten representative cases, *i.e.*, former OPG patients who were certified as not being any more "socially dangerous", but could not be liberated for the reasons outlined above (one of them, for example, came from a village where health services were totally absent, with the nearest psychiatrist 300 km away). A small special hospital was created for them, where conditions were practically indistinguishable from those of the OPG in which they had been previously confined. *Pace* the Constitution and the psychiatric law.

Some light at the distant end of this tunnel is provided by the description in the last part of the book (updated to 2009 in Venturini's introduction) of a special programme which started in the year 2000 in Belo Horizonte (about 2,500,000 inhabitants), the capital city of the State of Minas Gerais (about 20,000,000 inhabitants, *i.e.*, about one tenth of the total population of Brazil); an initiative that gained official status after the coming into force of the aforementioned 2001 psychiatric law. This "Programme of Integral Attention" to the psychiatric patient guilty of a crime, launched by a Belo Horizonte court in collaboration with Mental Health Service workers and administrators, is aimed at terminating, whenever possible, the confinement of patients (or former patients) of OPGs, relying on a series of coordinated professional and other interventions. The results so far obtained are exceptionally good (see p. 31): in the first 10 years, 1058 cases examined; 755 patients enrolled in the programme; 489 already definitively acquitted; 266 still under the judge's surveillance, of which 210 already liberated and living with their families or in therapeutical residences; the remaining ones still under the judges' security measure and the Mental Health Service's intensive care; but with only 25 subjects out of 755 still in confinement. And last but not least, a recidivism rate of only 2%, a world-

wide record both for this type of subjects and for “sane” criminals after their release from jail.

These results obtained with limited resources are a clear message for those Italian regional governments whose decrees predispose the transfer of a high percentage of our OPG patients to regional miniOPGs: *i.e.*, secure units for 20 inmates each, but with the possibility of combining two or three units in the same building or compound, resulting in confinement structures substantially larger than a “cosy” therapeutic residence or community; and often quite far from the original residence of the inmate (*e.g.*, the distance between the Northern part of the province of Viterbo and two of the new Latium miniOPGs to be located in an old hospital in Subiaco is about 200 km, at least two hours and a half by car). Alas, “if we want things to stay as they are, things will have to change”, as in the famous statement by the bold and shrewd Tancredi in Lampedusa’s *The Leopard*.

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**ANIMAL
 PERSONALITIES.
 BEHAVIOR,
 PHYSIOLOGY, AND
 EVOLUTION**

Claudio Carere, Dario
 Maestripietri (Eds)
 Chicago and London:
 The University of Chicago
 Press; 2013. p. 520.
 ISBN-13: 978-0-226-
 92197-6.
 ISBN-13: 978-0-226-
 92197-2.
 \$ 110.00 (Cloth).
 \$ 45.00 (Paper).

Personalities (called by some behavioural ecologists “behavioural syndromes”) refer to consistent individual differences in inter-correlated suites of behaviour, independent of factors such as sex, age, or social status. Such differences, which make every individual unique in its overt phenotype, tend to be stable across time and contexts.

Personality differences are well known features of humans – there are dedicated journals and societies of personality psychology and individual differences. No one would deny that any person has an own propensity to take risks or way to explore or communicate, or to cope with a disease. Such variation between animals was long overlooked. In the last two decades, starting from pioneering studies on mice with aggressive and non aggressive profiles (the so-called SAL, short attack latency, and LAL, long attack latency [1]) and great tits (a common songbird) with different exploratory behaviour (the so-called FAST and SLOW explorers [2]) it

became progressively evident that such intra-specific variation is a fundamental aspect of the animal kingdom. Behavioural profiles involving “packages” of traits including boldness, aggressiveness and exploratory behaviour have been uncovered in hundreds of species, including mammals, birds, fish, and recently extending to invertebrates. Curiously, the first animal study in which the term personality was used was on octopuses [3].

Theoreticians developed models for a deeper understanding of why and how different personalities evolve and are maintained in natural populations. Field studies investigate the fitness consequences and the ecological factors related to personalities in natural populations. Proximate factors are analyzed using genetic and physiological methods. Unfortunately, despite being a topic at the frontiers of behavioural biology, animal personalities research has still little connection to the human personality research in psychology, economics and social, political and medical sciences. For example, medical science focuses on the relationship between personality and individually optimized treatment of disease (“personalized medicine”), while animal biologists focus on the evolution of personalities and their interaction with the environment. The methods for classifying personality differences are much more refined in the human sciences and their physiological substrates are much better known in humans than in any other animal species. Human personality differences may appear in a new light if similar differences are also found in non-human species and open questions might be addressed in animal study systems.

In this timely volume, the first one synthesizing and integrating the research on animal personality, Claudio Carere (University of Tuscia, Viterbo, Italy) and Dario Maestripietri (University of Chicago, US), two recognized scholars of behavioural biology, provide a collection of essays diverse in biological approaches and levels of investigation as well as in species – from invertebrates to monkeys and apes, including humans. Thirty-five authors have been coordinated to assemble 15 chapters. Evolutionary biology provides the general framework for the study of animal personalities. Important contributions however, are made by ethology, ecology, genetics, endocrinology, neuroscience, and psychology. The editors made an effort to address both the how and why questions, and also to include descriptive, theoretical and experimental studies. The chapters illustrate how personalities vary along multiple dimensions; how they are influenced during ontogeny and in adulthood by genetic, physiological, and environmental factors; what is their functional significance, in terms of how they contribute to reproduction and survival; and what is their relevance for animal conservation in the wild and welfare in captivity and for human health. Three main questions permeate the content: why are there personality differences? How do genes and environment shape them? How do they evolve?

The volume is divided into four sections with a logical progression: Part 1 (Behavioral Characterization of Personalities across Animal Taxa) highlights the comparative/phylogenetic aspect. The paper by Mather and Logue does a good synthesis of the literature showing

how subjects as diverse as squid, spiders and grasshoppers exhibit personalities, which is a remarkable accomplishment considering the number of invertebrate organisms (98% of animal species), often considered limited in behavioural and cognitive repertoires. Bell, Foster, and Wund examine personalities in stickleback fishes, focusing on the selective factors that can favour the evolution of fish personality with a comprehensive *excursus* on variation in one species. Van Oers and Naugib provide an overview of research on avian personality, including studies addressing behavioural variation, its underlying genetic bases, and its fitness consequences in natural populations. Weiss and Adams examine nonhuman primates and integrate the findings obtained with different approaches, such as ecology-based and life-history-based approaches, human personality assessment procedures, and multivariate and behaviour genetic approaches. In their chapter the comparative psychologists Gosling and Mehta convincingly argue that studying animal personalities may greatly inform personality studies in humans. These two chapters bridge different aspects of personality research in behavioural ecology and in psychology by discussing similarities and differences in research focus between both and argue that using multiple methods and approaches is most favourable for the field – a conclusion that has recently been drawn by several authors in the field.

Part II (Genetics, Ecology, and Evolution of Animal Personalities) includes theoretical and empirical studies, which address the relation between genetic variation, phenotypic plasticity, ecological factors, and the selective mechanisms favouring the evolution and maintenance of personalities in animals. Van Oers and Sinn address the quantitative and molecular genetics of animal personality, discussing the role of direct genetic effects, maternal effects, and gene-environment interactions in the evolution and manifestation of animal personalities and their heritability. The authors give an accurate and detailed tale of why the over-simplification given by one-to-one trait correlations is not anymore tenable and provide some possible lines for taking explicitly into account the ‘correlation structures’ as main targets of the evolutionary game. Dingemanse and Reale focus on the role of natural selection and examine the reaction norm and character state view of animal personality with an inspiring review on principles of selection acting on personality and plasticity of traits. Sih’s chapter focuses on socio-ecology of animal personality analysing how variation in animal personalities relates to predation, mating, and cooperation as well as how variation in social conditions (*e.g.*, availability of different social partners) affects plasticity of personality and constitutes a rich source of ideas that have received little attention so far. The chapter by Wolf, Van Doorn, Leimar, and Weissing provides a broad overview of the selective pressures favouring the evolution and the maintenance of animal personalities and how these pressures affect the structure (*e.g.*, the type of phenotypic traits that cluster together) and the developmental stability of individual differences in personalities.

Part III (Development of Personalities and Their Underlying Mechanisms) addresses the ontogeny of

personalities, how they arise as a result of parental influences, and how they are controlled and regulated by different neuroendocrine mechanisms. The chapters of this section integrate empirical research on developmental and physiological aspects conducted mainly in the laboratory. Curley and Branchi review studies of laboratory rodents illustrating the mechanisms through which stable individual differences emerge during development and addressing in particular the role of epigenetic mechanisms (also at molecular level) in personality development. Maestripieri and Groothuis explore maternal effects on offspring personality development and their underlying mechanisms in both oviparous vertebrates (fish, reptiles, and birds) and placental mammals (rodents and primates). In particular, they discuss how maternal behaviour, maternal stress, and prenatal exposure to maternal hormones can shape stable individual differences in offspring physiology and behaviour later in life. Caramaschi, Carere, Sgoifo, and Koolhaas review the relation between physiological and behavioural traits commonly considered in animal personality assessments, with particular regard to stress coping and the activity of the hypothalamic-pituitary-adrenal axis, the hypothalamic pituitary- gonad axis, and the autonomic nervous system. They also discuss evidence linking the neurotransmitters serotonin and dopamine, as well as cortical brain structures such as the hippocampus, to variation in animal personality.

Part IV (Implications of Personality Research for Conservation Biology, Animal Welfare, and Human Health) moves to the applied side. The chapter by Smith and Blumstein represents a novel and useful contribution to the modernization of both conservation and behavioural biology emphasizing how personality variation is an important component of biological diversity, which plays a significant role in the long-term persistence of animal populations. After documenting the main anthropogenic factors reducing behavioural diversity of wild animals, they show that also several conservation actions can affect negatively the diversity of personalities and give concrete recommendations how to manage behavioural diversity of wild animals. The chapter of Huntingford, Mesquita, and Kadri deals with personality in fishes, particularly salmonids, and its implication for an appropriate culture strategy in terms of production and welfare. Finally, Cavigelli, Michael, and Ragan address the importance of research with rodent models of human personality in health and disease processes. Personality studies are increasingly affecting translational medicine. The authors review studies conducted with different strains of laboratory rodents to suggest which of them have behavioural and physiological traits that would permit certain personality types to be resilient or susceptible to specific disease processes. They also compare differential behavioural profiles associated with health trajectories in laboratory rodents to potentially analogous personality traits and associated health and disease trajectories in humans, suggesting associations between hostility and cardiac diseases, behavioural inhibition and allergy, sensation-seeking and drug abuse.

There is currently no other compilation of papers

providing such a broad and updated overview about a subject at the forefront of science. Various research perspectives and approaches that grow in parallel under the framework of personality have been brought together striving to develop new avenues of research. They include applied areas with an overall holistic approach to the subject, which makes the volume particularly valuable for a wide audience ranging from undergraduate students uncertain of their future choices, biologists of virtually all disciplines, medical researchers, veterinarians and psychologists.

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CORIANDOLI NEL DESERTO

Alessandra Arachi
Milano: Feltrinelli Editore;
2012.
137 p.

ISBN 978-88-07-01897-8.
€ 10,00.

[*Strips of paper in the
desert*]

The story of Enrico Persico, the Italian physicist who was a close friend and a collaborator of Nobel Prize Enrico Fermi, emerges from the pages of *Coriandoli nel deserto*, the recent novel written by Alessandra Arachi, writer and journalist of the *Corriere della Sera*.

From his hospital bed, Enrico Persico retraces the steps of his existence. It is June 1969 and at the age of sixty-eight, he is afflicted by an unknown disease, per-

haps a disease of the soul. These will be his last days. His memory slips in the recollection of his past life, an existence lived in the shadow of Enrico Fermi.

"Thirty-four years have passed since that morning (...). No one knows the true story of the origin of the atomic energy. It's a secret between him and me". It is a secret that Persico intends to reveal to the love of a lifetime: the Italian physicist Nella Mortara, the only woman from the Institute of Physics working with the group of young scientists led by Enrico Fermi, "The Via Panisperna boys", named after the street where the Institute was located.

"Dear Nella, your tears ... in our Laboratory of Physics are engraved with fire upon my heart. The same fire of those bombs I'll make you understand, I'll tell you what really happened that famous morning of Monday, October 22 1934 in the Laboratory". This is the element of mystery and suspense that accompanies the reader to the conclusion of the story.

Persico had tried many times to write a letter to Nella, he wanted to tell her everything about his relationship with Fermi. He had been his high school mate and his best friend after the death of his brother Giulio. But then, he became the genius of modern physics, the Nobel laureate with whom it was impossible to compete, the person who "had cut him out of history. Of life. Of happiness. ... To obey him was my way of living. The only way I knew". Fermi had torn his hopes and his ambitions, throwing them to the wind like those strips of paper he used in Alamogordo on July 16 1945 to estimate the nuclear bomb's yield. "My executioner", says Persico, who on that famous morning of 1934 broke in the linen closet in the Institute of Physics interrupting his kiss, his dream, the hope of a life, snatching his future away from him.

Only about ten lines are dedicated in Wikipedia to Enrico Persico who participated in the research on slowing down neutrons. *Strips of papers in the desert* tries to interpret this gap, crossing the boundaries between fiction and science, between past and present. The story of the broken love between Enrico Persico and Nella Mortara – the only two scientists from the Group who never married – is seen within the context of the discovery of the atomic energy, the finding of the importance of the *slow* neutrons. This was the secret revealed to Nella in the last words of his imaginary letter.

"Doctor do you know the importance of slowness?" Asks Professor Persico to the Head of the Department of Infectious and Tropical Diseases at the Policlinics in Rome, while on a stretcher, being wheeled, he was accompanied to undertake his last tests.

Alessandra Arachi has the merit of having infused poetry into science, in this short and enjoyable book. "Nella beloved, when I leave this hospital, I'll take you for a walk to the Campo de' Fiori. I want also Giordano Bruno to listen, while I tell you the secret of atomic energy."

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