

PSYCHOLOGY'S PHILOSOPHICAL FOUNDATIONS: IN  
SEARCH OF A UNIFYING THEORY

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# Abstract

I am concerned with fragmentation in psychology among its theories and research projects. There is in particular a clear debate between those who propose a scientific conception of psychology versus those who propose a broader, more expansive conception of its subject matter and method. The proponents of these two opposed conceptions of psychology agree that psychology is in need of an epistemology. I argue, instead, that psychology first needs to identify its metaphysics. That metaphysics will be its subject matter, as well as what is required for the study of any subject. I propose that Psychology's metaphysics is the person, a rational, self-conscious, intention-forming agent, fully interactive with the objective world it inhabits. The person, so conceived, will be the common ground of all the many disparate schools of psychological thought.

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## Chapter 1

# Psychology and psychologies: which epistemology? A brief historical viewpoint

### 1.1 Introduction

In current psychology, the “psyche”, or human cognition, has become the object of study of various research programs of different kinds, such as cognitive psychology, neuropsychology, developmental psychology, social psychology, and clinical psychology. There are accordingly a number of perspectives, theories, and methods that combine theoretical or conceptual work with experimentation and other research methods.

These different approaches appear to share a common concern: to understand and explain the laws and processes that underlie human cognition and behaviour. Yet, these research programs make a variety of claims, many of which appear, at least in principle, to be opposed. Some questions then arise about this incompatibility: is it based on differences regarding the object of study of psychology, of methods of inquiry, or both? Is there a common ground despite the diversity of views, or are

these views irreconcilable?

This is problematic, not only when there are competing theories, but also in relation to psychology's alleged scientific status, and, moreover, in the actual value of these theories as *episteme*, knowledge about ourselves, our cognition, and our ways of interacting with the world and others. There are no specified criteria to evaluate theoretical claims. In other words, psychology seems to be lacking a unifying epistemology. This also raises further questions in view of the challenges that the complex character of the "psyche" poses. For instance, on which grounds would a putatively all-encompassing epistemology be based? Is it even possible? Or, should we accept a plurality of psychological approaches? In the case of choosing the latter, what kind of epistemic framework would that "pluralist psychology" entail that would provide us with reliable knowledge, whether this knowledge is "scientific" or of another kind?

Two scholars, Mario Bunge and Dante Bobadilla, have considered these issues, and they both look at psychology's state of affairs concluding that psychology is in need of a unifying philosophical foundation to fix its current fragmentation into "psychologies", and to provide a truthful account of the human psyche. So, with the assistance of these two scholars, and bearing the above questions in mind, we shall navigate the landscape of contemporary psychology in the following historical sketch. The purpose of this portrait of contemporary psychology is to identify the main philosophical ideas that have inspired different ways of conceiving human cognition and of doing psychology, with particular emphasis regarding the idea of psychology as a science, and the influence of the natural sciences on the ways of conceiving the study of the "psyche".

## 1.2 The beginning of psychology in America: in search of a scientific approach to study the mind

From Aristotle to the beginning of experimental psychology in Germany and later in the rest of Europe and America, psychology was understood as a systematic discipline that investigates *mental phenomena*. The first laboratory was built in Germany in 1879, on the initiative of Wundt, who is considered the father of experimental psychology (Brett 1929). He thought, as many other scholars during this period, that psychology had a long intellectual history serving as foundation to pursue scientific research. On the other hand, this tradition also presented many challenges to the project of a science of psychology. Below is a quote from Dewey (1884) indicating this rich and wide-ranging intellectual tradition:

The infinite detail and complexity of the simplest psychical life, its interweavings with the physical organism, with the life of others in the social organism,— created no special difficulty; and in a book like James Mill’s *Analysis* we find every mental phenomenon not only explained, but explained by reference to one principle. That rich and colored experience, never the same in two nations, in two individuals, in two moments of the same life,— whose thoughts, desires, fears, and hopes have furnished the material for the ever-developing literature of the ages, for a Homer and a Chaucer, a Sophocles and a Shakespeare, for the unwritten tragedies and comedies of daily life,— was neatly and carefully dissected, its parts labelled and stowed away in their proper pigeon-holes, the inventory taken, and the whole stamped with the stamp of *un fait accompli*. Schematism was supreme, and the air of finality was over all. We know better now. We know that that life of man whose unfolding furnishes psychology its material is the most difficult and complicated subject which man can investigate. We have some consciousness of its ramifications and of its connections. We see that man is somewhat more than a neatly dovetailed psychical machine who may be taken as an isolated individual, laid on the dissecting table of analysis and duly anatomized.

We know that his life is bound up with the life of society, of the nation in the ethos and nomos; we know that he is closely connected with all the past by the lines of education, tradition, and heredity; we know that man is indeed the microcosm who has gathered into himself the riches of the world, both of space and of time, the world physical and the world psychical. (Dewey 1884, p. 278)

Dewey's passage was written at the time when the first psychology laboratories were appearing in America. It summarizes the rich intellectual background that served as the basis for the research conducted in these laboratories, and it also makes apparent some of the philosophical and methodological conundrums inherited from this philosophical tradition. The first experimental psychologists were concerned with finding empirical knowledge to enrich our understanding of the human psyche and its unique characteristics.

A list of the first 100 experimental laboratories is given in Garvey's "List of American psychology Laboratories" (1929). The information he gives was based on a mail-in survey taken decades after the first labs were actually founded; therefore, it is not entirely reliable, yet the article is still relevant to an investigation of the growth of experimental psychology in North American universities. Fernberger, one of the first psychology PhD's in America, cites this list as part of his historical summary of the APA (American Psychology Association):

According to Garvey's list, only nineteen laboratories had been established at that time [in America]. They were in order of their founding: Harvard (1874), Hopkins (1883, but closed 1887-1903), Pennsylvania (1887),

and so on. This historical review includes references to the works produced in Europe that students had access to:

When the student of 1892 wanted to consult a textbook, only two major texts were available in English—G. T. Ladd’s *Elements of Physiological Psychology* (1887) and William James’ *Principles of Psychology* (1890). The student who was competent in German had available the third edition of Wilhelm Wundt’s *Grundzüge der physiologischen Psychologie* (1887) (Fernberger 1932, p. 2).

Around the same year in which this review was written, Boring wrote:

The classical method of psychology is introspection, yet not the behaviourist, nor the “gestaltist”, nor the late functionalist, nor even the introspectionist himself has yet succeeded in maintaining clear vision with the eye rotated through 180° to see the mind that is at work. From this point of view we would seem to have a long way to go, and yet I must confess to you, attractive as my picture is, that I am not sure that we want to go, or can go, all that way. The scientific eye sees dimly when it turns through half a circle to look behind itself. The scientist, it seems to me, is limited by certain paradoxes of human nature and the psychologist shares these limitations with other scientists (Boring 1929, p. 97).

This quote from Boring suggests that the American psychologists from the early 1900s were familiar with the philosophical and experimental tradition in psychology in Europe. Boring also points out an understanding of “psyche” as referring to the complex, unique qualities of mental phenomena, and the problems that this understanding of the human psyche posed for the attempts to investigate it by means of the scientific methodology.

Other valuable historical accounts from this first period of psychology in America show not only the European influence and the problems faced by psychology as a science, but also the disjointed nature of the discipline, as evidenced in the following:

In 1909 Freud and Jung came to this country at Stanley Hall’s invitation (. . .) This was the first important academic recognition of psychoanalysis. The same year is memorable for the transfer of Binet and Simon’s mental tests to American soil. Their establishment

gave the decisive impetus to the emergence of an applied psychology, congenial to the pragmatic temper of our pursuits. The era of tests is highly characteristic of the psychological scene. As an instrument of social, industrial, and educational diagnosis they have been vastly extended. Side by side with able leadership and significant accomplishments this open sesame to research has led to the uncritical acceptance of the I.Q. as though it were engraved on the brain structure and Binet had deciphered it. (...) its true nature as well as available indices remain to be determined. The I.Q. is a useful wedge and no more. It is only by having the limitations of the tests constantly in mind that they can be validly applied. The immense vogue of applied psychology has added to the difficulty of a sound program. The present generation has but a waning interest in origins of a half-century ago. (...) A new career in psychology, patterned after the manner of the exact sciences, was heralded in Hall's first book, (...) there has been an attempt to reduce psychology to measurement. It began with so lowly a performance as judging, by lifting, which of a pair of weights was the heavier and plotting endless series of "just observable differences". It culminated in the Psychophysics of Fechner (...)

Wundt's experimental explorations of the mental structure grew to comprehensive proportions; they placed psychology on the academic map. They inspired Hall's pioneer efforts at Johns Hopkins, leading to doctorates in psychology, of which I happened to be the first recipient.

Up to the end, in 1927, he resisted the tidal wave of innovation all along the psychological front, particularly the swarming hosts of applied psychology, resolved that the academic robe of pure psychology should not be defiled by the overalls of practice. To him psychology was a *Fach*, a pedigreed *Wissenschaft*. What to Titchener was the glory of psychology was to James and Hall—and to each differently—the warrant of its failure. (Jastrow 1935, p. 262-263)

These quotes from Jastrow, an early psychology PhD in America, provide us with an interesting picture of the beginning of psychology in the New World. It is manifest that there was continuity between the European philosophical and scientific investigations of psychology and what was being taught at American universities,

and published in the American journals of psychology.<sup>1</sup> Nonetheless, there is also evidence that the philosophical tradition that inspired Wundt's experimentation on introspection and psychophysiology was not entirely welcomed by the Americans. Many American scholars were skeptical of this approach, based on subjective reports, and about its value as scientific and applied knowledge. While some defended Wundt's pioneer psychological school as having a legitimate scientific approach, this opinion was not unanimous (Bobadilla 2005).

According to this panorama, during the early period of academic and experimental psychology (1880-1920s), the discipline was conceived as the study of the mind and its faculties. The basic science of psychology, theoretically and experimentally oriented, was characterized by investigations directed towards the understanding of the subjective and cognitive qualities of the mind, following Wundt's tradition brought to America by Titchener, and James (Baldwin 1913). They were both teaching psychology courses, and involved in experimental research, also inspired by the first European schools, and particularly interested in the physiological aspects of the mental.

On the one hand, Titchener was trying to classify the structures of the mind in the same way a chemist breaks down chemicals into their component parts. Titchener considered that just as hydrogen and oxygen are structures, so are sensations and thoughts, the first being structures of a chemical compound, and the second of the mind (Titchener 1914). On the other hand, James, who inspired the neurophysiological investigations of mind, was in charge of teaching the first psychology class in America (Fernberger 1932). James' book, *The Principles of Psychology* (James 1890), already presents a view of the general field of psychology similar to the one

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<sup>1</sup>See <http://psychclassics.yorku.ca>. This website contains an impressive number of texts on psychology and related areas from the beginning of the century.

that we find in modern textbooks. The mind is characterized by James in its different aspects, as a function of the brain.

A series of events disrupted the course of this original science of the mind, creating a gap between the traditional psychology and the new “scientific” psychology. First, physicians found certain medical cases that seemed to correspond to the “mental disorders” described by Freud’s psychoanalytic theory, like hysteria and other neuroses. Consequently, they became familiar with this model of abnormal behaviour, giving rise to psychiatry in America. Soon after, psychometrics entered the field, in psychologists’ effort to imitate the measuring techniques of the natural sciences. They adopted different statistical and mathematical models as a means of quantifying theoretical psychological constructs, some of which, such as “intelligence” and “personality”, had a great reception in various applied fields. Finally, the expansion of the behaviourist school in America made the separation between European psychology—which followed the philosophical tradition—and the psychology initiated in the New World, almost complete.

### **1.3 Psychology’s fragmentation into “psychologies”**

Fernberger’s aforementioned history of the APA shows that since the beginning of the association there was a clear fragmentation of the discipline, assuming different applied approaches. This is evidenced in the fact that the first committee of the APA included not only researchers, but physicians and educators, according to the scholar’s report (Fernberger 1932).

Inspired by psychoanalysis and psychiatry, psychology rapidly adopted a naturalistic or medical perspective, and a practical role in providing the theoretical basis for

dealing with mental disorders. Together with this new role, psychology adopted a new objective: to help understand the origin of some medical illnesses.

In practice, psychopathology, the psychology that attempted to explain abnormal behaviour, became divided. On the one hand, some scholars thought that abnormal behaviour was treatable by the means used in medicine. These scholars investigated brain anatomy, and searched for new treatments and drugs to control and alter behaviour. On the other hand, some scholars chose a psychotherapeutic approach, using psychoanalytic techniques. This tendency towards an applied psychology was augmented by the application of psychometrics to diagnose psychiatric conditions, as well as a means to evaluate intellectual abilities and personality traits in other areas, such as education and the military.

Psychometrics grew first in Europe in connection with psychophysics. Around the same time that Darwin, Galton, and Cattell were investigating the inheritance of specific traits, Herbart was also interested in “unlocking the mysteries of human consciousness” through the scientific method (Fernberger 1932). Herbart was responsible for creating mathematical models of the mind, and he influenced Weber, who tried to show the existence of a psychological threshold, saying that a minimum stimulus was necessary to activate a sensory system.<sup>2</sup> These works of sensory physiology were the basis of Wundt’s work, and soon became known to American psychologists.

Psychometrics, which includes the measurement of knowledge, abilities, attitudes, personality traits, and aptitude, was undertaken in an attempt to measure intelligence, and to provide useful instruments in schools, the military, and industrial settings. So, even though there was no consensus over the meaning (and even the

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<sup>2</sup> *Weber’s Law of Just Noticeable Difference*, University of South Dakota:  
<http://people.usd.edu/~schieber/coglab/WebersLaw.html>

reality) of psychological concepts such as *intelligence* and *personality*, these concepts were already becoming part of the American culture in the early 20<sup>th</sup> century.

Psychology, as a developing science, was also influenced by a pragmatist conception of the discipline, adopted by James' followers as well as by other well-known philosophers. Pragmatism is centered on the linking of practice and theory, and it describes a process where theory is obtained from practice and applied to practice. According to this idea, psychology should work with methods and insights of modern science. That is, while the theoretical and experimental work in psychology seemed to be unable to provide real explanations of mental phenomena in scientific terms, the applications of psychological models were rapidly accepted and further pursued, as in the case of psychoanalytic models, and the use of psychometrics in different areas (Haack & Lane 2006, pp. 18-67).

James' pragmatic view was manifest in his *Principles*, the textbook most used to teach psychology in America since the first courses were taught. In this comprehensive book, after a long discussion of the ideas of Hume and Kant regarding "the self", he writes: "There is no property absolutely essential to any one thing. The same property which figures as the essence of a thing on one occasion becomes a very inessential feature on the other" (James 1890, p. 959). This idea was thought to promote a coherent psychology, which in view of the complexity of its subject matter, breaks the study of mental processes into different, yet overlapping, levels or domains. Conversely, it seems to have opened the doors for the multiplicity of psychological schools to come, which instead of working together towards a comprehensive understanding of the mental, competed with one another for legitimacy and resources. In any case, the consolidation of a fragmentary psychology would not have been possible

without the help of the behaviourist school, which brought about a new conception of psychology as a natural science.

To understand the motivations of the behaviourist school, we need to understand more about the scientific context of the time. Scientific behaviourism was conceived by Watson under the influence of 19th century biology. This field, in the beginning of the 20<sup>th</sup> century, was a rapidly growing field, whose main characteristic was animal experimentation. Animal experimentation had been growing for practical purposes (farming) and also because of the impact of Darwin's biological theory of evolution of species on the intellectual and scientific community. An ardent discussion regarding the philosophical and religious implications of this theory fuelled the search for empirical evidence (in favor or against Darwin's theses) that favored animal experimentation(Gray 1860)<sup>3</sup>.

Gray's review of Darwin's *Origin of Species by Means of Natural Selection* summarizes the main conflicts that arise from Darwin's theory, making manifest the great impact that this theory had, not only on biology, but most importantly on our conceptions of reality, human nature, and of scientific knowledge. According to Gray (Gray 1860), Darwin's theory placed humans in the scope of the natural sciences. Scholars concerned with culture, societies, freedom, artistic and musical abilities and the whole repertoire of human capacities were looking for scientific explanations of "human nature". By the end of the 19th century, scholars such as Dilthey (Makkreel 2012) and Windelband (Windelband 1893) tried to describe the difference between the "natural sciences" and the "human sciences" or "sciences of the spirit". Dilthey wrote about the "science of the subjective", and many scholars were inspired by his

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<sup>3</sup>Harvard professor of Natural history, he was Darwin's greatest defender in North America.

work to identify the kind of methods appropriate for the scientific study of “subjective” and “cultural” phenomena.

However, while the Europeans were trying to create an epistemology for the human sciences, psychology was already starting to develop as a scientific project and an experimental and applied discipline in Europe and America. There was already a division between different perspectives, without a clear epistemic framework. If psychology is the science that studies the mind, what kind of science is it? Is it a natural science or a “science of the spirit”? Could it be both?

This discussion (see Jastrow and Boring above) seems to fuel the idea that psychology, as the study of the “psyche” or human cognition as mental phenomena, is not a suitable subject for scientific investigation. Psychological behaviourism emerged in the context of this discussion, pumped by the rapid progress in biology and the natural sciences in general, and their avid reception among scholars. Watson, considered the father of psychological behaviourism, wrote in 1907:

If we think carefully about what our human companions are thinking, we cannot fail to be struck by the fact that our only method for obtaining such information is to be had by observing their conduct. If they act in the way we should act if we were placed in similar circumstances, we unhesitatingly assume that their mental processes are similar to our own. This same method ought to hold good in the study of animals, provided we carry out the method with the same care in the animal world that we employ in the study of men.

The study of behaviour thus becomes a broad science; normal adult human psychology forms only a part of its subject matter. The psychology of infants, of children, of the feeble-minded, of primitive peoples, of animals, all form a part of the world to be observed by the psychologist. The behaviour of animals alone is a much broader field than is usually supposed at first glance. Mammals, birds, fishes, even the lowly unicellular organisms, and possibly the sensitive plants, are all embraced in any complete scheme of the study of mind.

Surely the evolution of mind is no less worthy of study than is the evolution of the bodily structure! Considering the enormous number of exact studies on the structure of animals we have already at our command, we firmly believe that from now on, the evolutionary study of behaviour will yield far more fruitful results for the guidance of human conduct than will further studies on morphology alone.<sup>4</sup>

It is clear that, as conceived by Watson, behaviourists worked on animal experimentation as a particular model intended to control and modify behaviour. They adopted the conceptions and methods of the natural sciences, inspired in a purely experimental and applied conception of human psychology. In this way, the behaviourist school (as well as the psychoanalytic) contributed to the separation from the European tradition in psychology, replacing the original objectives of studying mental phenomena with the aid of scientific methods, with the study of overt behaviour and psychiatric symptoms as means to control and modify them.<sup>5</sup>

According to Morgan, “In any meaningful sense substantially all American psychologists were behaviourists long before 1912” (Morgan 1930). The expansion of the behaviourist and psychoanalytic schools continued during the first half of the century. In addition, the two world wars severely disrupted the activities in European universities, especially in Germany. This chaotic panorama contributed to the rupture between 20<sup>th</sup> century psychology and its philosophical roots, and to the expansion of psychological behaviourism in America and around the world.

In response to the “naturalization” of psychology carried by the behaviourists studying animal behaviour, a movement grew within psychology that became known

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<sup>4</sup>All these quotes belong to Watson (1907), first published when he was an instructor in experimental psychology at the University of Chicago.

<sup>5</sup>See (Beorlegui 1987) for a description of the mixture of “psychologies” that flourished during the 20<sup>th</sup> century.

as “humanism”. The humanist psychologists tried to recover for psychology the specific human qualities or aspects of human cognition that originally interested experimental psychologists.<sup>6</sup>

Bobadilla criticizes humanism for being an eclectic movement, motivated by purely therapeutic and practical interests. He argues that humanistic psychologists have no clear philosophical foundations for their theories, they lack precision in their conceptualizations, and overall consistency in their theories and applications (Bobadilla 2011). Bobadilla says that humanists legitimately defended psychology’s concern with the subjective qualities of human beings. However, he says that they failed to provide a consistent and systematic account, providing instead a multiplicity of “psychologies” including psychoanalytic and self-psychology theories and methods, and personality theories.

According to Bunge and Ardila, in focusing on how to help people to live fulfilling lives, humanists became content with speculation and “armchair psychology”, and ignored the basic requirements to build systematic and reliable knowledge akin to rigorous enquiry (Bunge & Ardila 1987). On the opposite side, psychological behaviourism was concerned with making psychology’s knowledge reliable and systematic, according to scientific standards. So, whereas Bunge and Ardila celebrate the “scientific pedigree” of psychological behaviourism, Bobadilla rejects it for failing to address mental phenomena. These different positions illustrate different sides in the debate over psychology’s scientific status.

During this period, statistics became the main methodological support for psychology’s applications, featuring numerous measuring instruments. Psychology studied

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<sup>6</sup>See “Humanistic psychology” in (Colman 2009) and (Aanstoos 1930)

intelligence, personality, the unconscious, and behaviour from different and incompatible perspectives. Scholars such as Bobadilla and Bunge criticize this pluralism of theories in psychology. Bobadilla argues that such proliferation of “psychologies” has been fuelled by scientific and pragmatist conceptions of psychological phenomena. Following these conceptions, each different school of psychology tried to provide its own model of scientific psychology. Bobadilla describes this phenomenon as a process of *naturalization of psychology*. This process is characterized by him as applying methodologies from the natural sciences to every concept that seems useful in psychology. As a result, he laments, different models and concepts were eventually established as part of psychology’s domain in virtue of their applications, and despite their dubious soundness.

While psychology became a behavioural science in America after the two world wars, it was still a science of the psyche in Europe. Three influential psychological theories developed there during this time: Gestalt Theory, Piaget’s theory of human cognitive development, and Vygotsky’s theory of social development. These theories eventually made their way into American psychology as part of the *variété* of psychological theories, giving rise to the studies in developmental and social psychology (Allport 1985). However, since all these theories assumed the concept of mind as central for explaining individual behaviour, they had to wait to be welcomed by mainstream American psychologists until the “rediscovery of mind” took place among them.

## 1.4 “The Rediscovery of Mind”<sup>7</sup>

In the late 1950’s, psychological behaviourism’s supremacy came to an end with the emergence of cognitive science, and the subsequent development of neurotechnology. “Cognitive science” refers to a set of disciplines including artificial intelligence (A.I), linguistics, anthropology, philosophy, and neuroscience, which were concerned with the study of cognitive, higher-brain functions such as memory, learning, perception, thought, language, and intention. The possibility of creating intelligent machines, as suggested by A.I, opened a new panorama for investigating the mechanisms underlying human behaviour. The new psychology, inspired by the advances in artificial intelligence, was called “cognitive psychology” and assumed the existence of internal processes beyond intelligent performance, long denied or diminished by behaviourists.

Once again, Bobadilla and Bunge agree that, despite its new name and vocabulary, cognitive psychology was not a new psychology. According to Bobadilla, it was called “cognitive” because in the chaos, each “psychology” required a special identification, but it was actually the same old-time psychology, recovering its original field: the mental. However, whereas Bobadilla endorses cognitive psychology as providing the missing epistemic framework to pursue a basic (theoretical) scientific psychology, Bunge believes that cognitive psychology rests on faulty philosophical assumptions that are incompatible with a scientific framework.

According to Bobadilla, cognitive psychology came to the rescue of the original project of psychology as a scientific discipline concerned with the objective study of

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<sup>7</sup> Title borrowed from Searle (1992).

mental phenomena. It had no therapeutic purpose, contrary to most of the psychological schools that had proliferated in America, but only an epistemic one. But as much as Bobadilla and a number of scholars embraced the cognitive approach, Bunge and others see it as yet another failure to properly address the specific qualities of the human mind. For this reason, the “rediscovery of the mind” is not a culminating event to characterize the fragmentation of psychology during the past century. Rather, it is the starting point of a new period of search for an epistemic framework appropriate to psychology’s real object of study. This search still continues.

## **1.5 Bobadilla and Bunge on philosophy of psychology: Scientism vs. Anti-scientism**

This brief historical account shows some attempts made at creating a scientific psychology, as well as some of the conflicts posed by these initiatives. Some scholars, such as Bunge and Bobadilla, have understood these attempts as failures. Moreover, they claim that a rigorous analysis of the history of contemporary psychology suggests that, despite an apparent unity between the different sub-fields and research programs, there is a deeper fragmentation of the discipline. These scholars’ claims are based on their identification and examination of some of the relevant problems that psychology has faced during the past century. These problems can be summarized as follows:

1. Psychologists have struggled to identify the origin and nature of human cognition. As we have seen, while some scholars have stressed, implicitly or explicitly, the relevance of culture and “social reality” for the understanding of

human nature and the human psyche (Dilthey, Dewey, humanists), others have searched for a “naturalist” explanation, according to which human thought and behaviour is explained by its physical and/or biological constitution (psychoanalysis, psychological behaviourism, psychophysiology).

2. Psychologists have adopted a number of cultural concepts as “psychological” without clear justification. Theories and applications were developed based on these concepts, which lack either scientific validity or philosophical basis that nonetheless have become academically and socially incorporated. Examples of these psychological concepts are *intelligence*, *personality*, *neurosis*, and *abnormal behaviour*. There is no consensus over the meaning of any of these concepts and yet they are pivotal in the application of a number of psychotherapies, health diagnoses, and in educational and industrial settings.
3. Psychologists employ a statistical methodology that measures phenomena whose validity is questioned by scientific and rational standards. This practice is associated with a number of theories, methodologies, and applications.

According to Bunge and Bobadilla, these problems are associated with the lack of an explicit and all-encompassing philosophy of psychology. They are both concerned with providing an epistemology or theory of psychology as a scientific discipline. This task, as these scholars claim, seems to have been either avoided or misunderstood as the task of creating a different kind of psychology altogether. Instead, these two scholars agree on trying to find a set of philosophical principles regarding the nature of mind and some epistemic criteria regarding the nature of science and psychology’s enquiry. These principles should function as criteria to evaluate the existing theories, especially whether they can be considered scientific.

Bunge, a philosopher of science, has developed a comprehensive account of scientific knowledge, including psychology, with its specific issues. Bobadilla, on the other hand, as a psychologist and educator, is fundamentally concerned with the epistemology of psychology, from a historical (critical) perspective. Despite their different motivations and backgrounds, the two scholars describe contemporary psychology as fragmented in its knowledge, encompassing unrelated and at times incompatible views, and fundamentally lacking a clear set of commonly shared philosophical premises; that is, a philosophy of psychology. In consequence, these two scholars have provided their own philosophical analyses of the scientific status of psychology as well as different recommendations for fixing the current fragmentation of the discipline and building solid and systematic knowledge.

Let us consider now what is entailed in a so-called “philosophy of psychology”. It seems reasonable to expect from a philosophy of psychology a study of the subject matter of psychology, with a justified answer to the question: what does psychology study? In this respect, Bunge and Bobadilla present an epistemology, understood as a theory of knowledge and science, both general and specific to the area under scrutiny. Moreover, Bunge—explicitly—and Bobadilla—implicitly—share a deeper philosophical commitment towards the nature of reality. In this regard, both scholars can be identified with a realist and materialist conception of reality, according to which there is real knowledge, that we can gradually and partially obtain, and that everything that exists is made of matter or is in principle explicable in accordance with natural laws even if not entirely by physics (the study of matter). The materialist position can also be understood as the negative thesis that nothing exists in reality that is supernatural (i.e., independent from the laws of physics). Both scholars explicitly deny

the existence of spirits, souls, and of reality as understood by religion, spiritism, or mysticism. However, while they both concur regarding the nature of reality and the possibility of knowing it, they differ in their understanding of what mind, knowledge and science are. In consequence, they also present different conceptions of psychology as a scientific discipline.

Bunge claims that psychological theories fail to produce scientific knowledge because they are based on faulty philosophical assumptions. He says that these fundamental philosophical assumptions entail, explicitly or not, a conception of the human mind and of reality that is at odds with the philosophical principles assumed by scientific enquiry. These philosophical principles, he argues, must be correct; for science has produced the best, most reliable knowledge in human history: present and future (Bunge & Ardila 1987, Chapter 1). Therefore, for psychology to be a science, it has to adopt the scientific philosophical assumptions. Bunge's main thesis holds that everything that can be known can be known best by scientific means, and only science produces real knowledge, namely, objective knowledge of reality (Bunge & Ardila 1987, Chapter 1).

Bobadilla, on the other hand, believes that psychological theories fail to be scientific or objective and accurate because they lack an appropriate epistemology or philosophy of psychology. The reason for this, he argues, is that psychologists have tried to define the object of study of psychology (mind) and its aims as a scientific discipline, according to a faulty conception of human knowledge and science. He describes this faulty understanding of science and knowledge as scientistic. Bobadilla maintains that scientism entails a mistaken understanding of reality, and in particular of the object of study of psychology, because it rejects the *subjective* nature of

our knowledge of the world, which is observer-dependent or subjective. Therefore, scientism fails to properly identify the specific object and aims of psychology, and its need for appropriate, specific methods.

Bobadilla proposes to study psychological phenomena and human behaviour, understanding these as the product of the subject's cognitive processing of what in large part is culturally mediated information. According to this understanding, the psyche operates at a higher level, independently of its physical substrate, the brain. In contrast, Bunge considers the study of the neurological processes as pivotal for our understanding of human cognition and behaviour.

In my own view, both scholars provide a meaningful analysis of the history of psychology as a science, and correctly point out some of the psychologists' main problems (page 17). I also agree with them in that psychology is in need of a deep philosophical revision. However, I disagree with their arguments and solutions, which I believe and try to show are based on mistakes that are similar to those made in the "psychologies" that they both criticize. For instance, I will show that both scholars, in different ways, adopt a "reductive" view of the person's experience, which is not only central to properly understand and explain human cognition and behaviour but also to characterize human knowledge including science.

My proposal then is to examine Bunge's and Bobadilla's positions, presenting each scholar's philosophy of psychology in chapters 2 and 3 respectively. Then, I will compare Bunge and Bobadilla's views in chapter 4, pointing out some of their strengths and deficiencies. In conclusion, I will present my own view in chapter 5, which entails a theory of psychology based on the metaphysics of persons and their knowledge, including science.

## Chapter 2

# Bunge's philosophy of psychology

### 2.1 Introduction

In this chapter, I will describe Bunge's philosophy of psychology based on two of his numerous works on philosophy of science: *Philosophy of Psychology* (Bunge & Ardila 1987) and the most recent book *Matter and Mind* (Bunge 2010). These two books refer to Bunge's philosophy as a project for restoring the traditional unity of philosophy conceived as an elaborate worldview or as an encompassing theory of everything. For this, he develops a specific epistemology or philosophy of psychology as part of this process.

In *Matter and Mind* (Bunge 2010), Bunge says:

In my view, any philosophy worth its name is an explicit and well-organized worldview rather than a collection of spotty opinions on this and that. I expect philosophers to tell us something interesting about the world, as well as about our knowledge of it or our place in it. That is, a philosophy proper is organized around an ontology or metaphysics: a theory of change and invariance, space and time, cause and chance, body and mind, person and society, and so on. I submit that a philosophy without ontology is spineless, just

as it is confused without logic and semantics, headless without epistemology, and limbless without a practical philosophy. And a body of ideas lacking all five, as is the case with Wittgenstein’s aphorisms and Heidegger’s cryptic dicta, hardly qualifies as a philosophy (Bunge 2010, page 23).

Bunge’s philosophical contributions are numerous but most of his work is focused on epistemology or philosophy of science. According to his view, in all of the factual sciences—physics, chemistry, biology, psychology, sociology, and history—the real world or reality is conceived as composed of material entities, from elementary particles and photons to persons and social systems. He says that the concept of “entity” is overwhelmingly pervasive and, because of that, we tend to “reify”; that is, to refer to non-entities, such as processes, concepts, and words as “things”. However, says Bunge, real things or systems are material in more or less complex ways. We shall see how this idea is applied to his conception of psychology, but first we will look at his diagnosis of the discipline.

## **2.2 The problems with current psychology and the role of philosophy**

In (Bunge & Ardila 1987, chapter 2), Bunge and Ardila describe the domain of scientific psychology as divided into various competing schools and research programs. Bunge argues that these divisions originate in different philosophies of mind. Because of this, he says, theories in psychology respond to different assumptions and goals, and tend to ignore one another, using different methods, and frequently reaching mutually inconsistent conclusions.

Bunge portrays the fragmentation of psychology in the following way:

psychology looks like a huge mural on a great many subjects painted in all colors either by an industrious schizophrenic or by an army of workers belonging to hundreds of disjoint crafts and rival schools. No pattern is to be seen. There is scientific psychology on the one hand and a large variety of nonscientific psychologies on the other. Within scientific psychology there are behaviourist and mentalist students, as well as biological, social, and even engineering orientations. Besides, there are the basic-applied, the animal-human, and the normal-abnormal divisions. And, whereas some psychologists specialize in emotion, others focus on cognition, language, mental retardation, or what have you. (Bunge 1980*b*, page 30)

This fragmentation, says Bunge, is not as evident as it used to be, nor is it associated with scholars' names, and the division into schools and their inconsistencies are purposely downplayed in academic teaching. But the fragmentation is there, and becomes apparent whenever we come close to any psychological issue. Bunge illustrates his point by referring to the concept *learning*, which is studied by physiologists, developmental psychologists, cognitive neuroscientists, behaviourists, and ethnologists, using different approaches without consensus over a conception of "learning". Bunge points out that these divisions are arbitrary because they do not respond to a specific subject of study, but to many. This means that most areas in psychology work in isolation, without consideration of, and overlap with, other areas of research.

According to Bunge, psychology's fragmentation has its roots in philosophy of mind, itself divided over what a mind is, how it relates to the body, and the nature of mental states and processes. He proposes a solution to psychology's problem: to endow it with the same unifying philosophical foundation of the more mature sciences such as physics, chemistry, and biochemistry. His choice is scientific materialism.

Given that the current fragmentation of psychology into warring schools and disjoint subfields hinders the advancement of our science, what can be done to overcome it? Because the fragmentation

into rival schools derives from rival philosophies, it can only be overcome by adopting a single underlying philosophy- preferably the one closest to the “scientific spirit”. And the fragmentation into disjoint subfields can be overcome by recalling at all times that a single protagonist plays all of the behavioural and mental roles, namely the nervous system. (Bunge 1980*b*, page 31)

By “single underlying philosophy”, Bunge refers to what he calls *scientific materialism*, which is the fusion of materialism with scientism<sup>1</sup>, or the thesis that whatever can be studied is best investigated using the scientific method (Bunge 1977, 1979, 1981, Bunge & Mahner 2004). Thus scientific materialism is a case of what Bunge refers to as “philosophical syncretism”, the attempt to reconcile different, even opposing, ideas and to integrate practices of various schools of thought.

Contemporary scientific materialism (CSM), as Bunge understands it, has five distinctive characteristics:

1. materialism: all that exists is material;
2. dynamism: every thing is changeable, and cooperation is just as important as conflict;
3. systemism (though not holism): CSM deals with systems;
4. emergentism: systems possess properties that their components lack;
5. scientism: philosophy must proceed in accordance with contemporary science, is critical and a work in progress rather than a finished product.(Bunge 2010, page 22)

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<sup>1</sup>Even though “scientism” is usually understood as a pejorative term to indicate a narrow understanding of science, Bunge insists that “scientism” is “scientific approach” (see page 39).

According to this, Bunge proposes a materialist conception of psychology based on an emergent thesis, in which mental processes are special kinds of brain processes. He says that the brain processes that control and perform mental functions and behaviour have properties that their components lack. They have emerged as the result of evolutionary and developmental processes, and they possess as such specific characteristics. However, before we say more about Bunge's philosophy of mind, we will look at his description of the relation between philosophy and psychology, as presented in the first chapter of (Bunge & Ardila 1987).

### **2.2.1 Why philosophy of psychology?**

In the first chapter of (Bunge & Ardila 1987), Bunge and Ardila say that philosophy influences psychology in two ways. First, philosophy provides psychology with hypotheses concerning the nature of mind and the appropriate way to study it. Second, philosophy provides psychology with general principles underlying scientific research in any field (I will deal with this in the next section).

The most common way of doing philosophy, says Bunge, is to reflect on some general problem, such as "What is the mind?", using a combination of common sense (also referred to as *folk psychology*), knowledge accumulated in the history of philosophy, and logic. This style, according to Bunge, has no appeal for scientists; and consequently, is of no use for psychologists. For scientists to find philosophy of use, it has to be "intelligible (if possible exact) and compatible with science" (Bunge & Ardila 1987, page 3). So, a philosophy of mind is futile, says Bunge, unless it makes use of contemporary science together with conceptual analysis.

The "common-sense philosophy", according to Bunge, has produced most of the

philosophical ground for non-scientific psychological theories; and this can be seen most clearly with an examination of the different theories of mind. Bunge classifies these different theories of mind into two main categories, according to whether they consider that mind and brain are somehow the same thing—a position called psychophysical monism—or different things—psychophysical dualism.

In Bunge’s opinion, these categories include many incompatible views; in particular, the monism/dualism camps do not line up with other classical dichotomies in philosophy, like materialism/idealism (Plato and Hegel were idealists, but the former was a dualist and the latter a monist), subjectivism/realism (Popper and Smart are realists, the former a dualist, the latter a monist), empiricism/rationalism (Ayer and Quine are empiricists, the former a dualist, the latter a monist). Yet another feature of these philosophies of mind is that they are not usually very precise or comprehensive, and thus they are prone to controversy of the form “in such an argument, scholars A and B disagree about what author C ‘really wanted to say’ ”. This is of course not the case for all of them. Bunge pitches here the philosophical position that he defends, namely emergentist materialism (together with psychobiology as its scientific companion). He contends that emergentist materialist theories are “fairly elaborate, include some mathematical models, and enjoy strong experimental support” (Bunge & Ardila 1987, page 10)..

Bunge claims that this conflicting panorama in the philosophy of mind is mirrored in the psychologists’ use of concepts with a deep philosophical tradition, like *consciousness*, without acknowledging that tradition (and its conflicts), and often holding philosophical views that are incompatible with their own psychological ideas. An example of this is the adoption of psychophysical dualism. Bunge says that this

view is so entrenched in thought and language that often monists, both idealists and materialists, use expressions imbued with dualism. For instance, “the neurophysiological *basis* of mind”, “*neural correlates* of mental functions”, “physiological *equivalents* of mental processes”, “brain systems *subserving* mental functions”, “*transformation* of neural activity into mental activity”, “*embodiments* of mind”, “neural *representation* (or *coding*) of mental processes”. In all of the above cases, the use of physical and mental terms implies psychophysical dualism. Psychobiological research, on the other hand, is by nature materialist, even if this is not usually explicit.

Bunge considers that the uncritical adoption of philosophical concepts and views is the consequence of a lack of reflection on known science. He says that these theories are rather uncritically acquired from teachers or colleagues, or—even worse—from “common-sense”, that is our ordinary, experiential knowledge of the world, which is characterized by Bunge as uncritical, unreliable, and incompatible with a scientific attitude.

The moral is clear: Bunge believes that philosophy inspires psychology either in a positive or a negative way, but in some way, nonetheless. When the mind is regarded as an immaterial entity, mentalist psychology results. This kind of psychology is exemplified by what Bunge refers to as “classical psychology”, which he considers motivated by philosophical idealism and spiritualism. Behaviourist psychology, says Bunge, was a reaction against mentalism and it evolved in close association with positivism, a variety of empiricist philosophy. According to Bunge, behaviourism shares with mentalism the same weakness: it pays no attention to the nervous system. In consequence, even though behaviourism attempts to explain behaviour, it only succeeds in describing it. Human behaviour cannot be understood without reference

to mental states, which for Bunge are brain states. Says Bunge:

Behaviorists reject the definition of psychology as the study of the mental, and like to be known as scientific students of animal and human behavior (Bunge & Ardila 1987, p. 51).

Finally, there is a biological psychology, says Bunge, which is different from both mentalism and psychological behaviourism, even though it is not entirely foreign to either. It shares with the former the idea that there are mental states, and with the latter the idea of conducting research in a scientific way. The biopsychological approach assumes that behaviour is the result of neural processes that can be triggered by external stimulation, and mental states are considered brain states of a special kind. This idea corresponds to the philosophical thesis that mental phenomena are emergent brain phenomena. This is a materialist thesis because it holds that mental states are not immaterial but physical, highly evolved brain states.

In Bunge's view, the mind emerges from physical processes in the body; there is no immaterial stuff that would be inaccessible to experimental observation and manipulation; and the mental may be investigated by both psychological and neurophysiological methods. Psychology is concerned with neurophysiological processes and how they are influenced by the social environment in which the individual develops. Neurobiology and psychology study the same thing: the brain; but psychology deals with a subgroup of the brain's capacities, those involved in cognition, emotion, and socialization in animals capable of learning.

Having identified its subject matter, let us see what Bunge has to say about how psychology should be pursued as a science.

## 2.2.2 Bunge's conception of psychology as a science

In chapter one of (Bunge & Ardila 1987), Bunge and Ardila defend the thesis that philosophy underlies any scientific undertaking. Scientific research, according to them, is always conducted under certain philosophical principles, although these principles may not be explicitly acknowledged by the researchers themselves. They consider a long list of these principles, including ontological, epistemological or methodological, and ethical principles (see the list A.1 in the Appendix).

In order to check whether the principles are in fact presupposed, Bunge and Ardila present an example of a scientist observing a monkey. The monkey is missing, so the scientist assumes that the monkey is hidden or that he has escaped, or that the scientist is hallucinating (all hypotheses consistent with the ontological principle). However, he does not think that the monkey has disintegrated or disappeared, and even if he does, he does not say so because his colleagues will believe that he is not familiar with the basic principle that matter is uncreated and indestructible.

Having solved the mystery of the hidden monkey, the scientist proceeds to study the monkey, observing his behaviour in order to find something new about the primate. Bunge says that this exemplifies the tacit trust of the scientist in the epistemological principle (we can get to know things by studying them). So, whatever his explicit philosophy, the scientist behaves as a realist and an empiricist, not as an idealist or a conventionalist. Finally, when he reports his observations, he will be careful to distinguish raw data, statistics construed out of them, and the interpretation of the outcomes, referring to the latter as a hypothesis. By doing all this, the scientist proceeds according to the methodological and moral principles of scientific research.

Bunge says that these principles are not studied in science but in philosophy. They

are used by most philosophers and applied to the practice of science; they are also analyzed, and systematized. He calls the collection of these principles “philosophical background”, “general outlook” or “worldview”. These principles, says Bunge, are not frequently apparent to scientists; however, they emerge from time to time, especially at critical points. He cites as examples the design of ambitious research programs, such as mapping the mind onto the brain, when building new theories (hypothetic-deductive systems), and when evaluating competing theories or research programs.

Bunge’s claim that scientific research involves these principles is not descriptive but normative. So he does not claim that, as a matter of fact, scientists follow these principles in a conscious way, but that a philosophical analysis of a piece of correct scientific research will show that those principles are at work, even if scientists are not aware of them.

Summing up, Bunge describes the relation between philosophy and psychology, and concludes that the problems of the nature of the mind and how to best study it are of interest to both disciplines. He argues that psychology is divided because of its underlying philosophies of mind—dualism, positivism<sup>2</sup>, and naturalism (materialism). In consequence, there are also different methodologies corresponding to different philosophies of mind (holism, reductionism, and systemism<sup>3</sup>), which has produced a broadening of problems and aims, and contributed to conceptual and theoretical fragmentation of psychology.

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<sup>2</sup>*Positivism* is the philosophy of science that considers that the only valid knowledge is scientific knowledge, and that this in turn is reduced to logical and mathematical treatment of empirical evidence.

<sup>3</sup> *Holism* follows the view that the mind—and all systems in nature, whether mental, biological, physical, etc.—are to be viewed as wholes, and not as aggregations of parts. *Reductionism* is roughly the opposite of holism: that all complex systems can be reduced to the interactions of their parts. *Systemism* is a concept championed by Bunge, that attempts to combine the holistic and reductionist approaches: they both have a place in the process of understanding the world.

Bunge says that even though we can distinguish between psychological phenomena (perception vs. imagery, awareness vs. consciousness, and so on), there is no clear criterion (*fundamentum divisionis*) allowing us to categorize the vast array of psychological phenomena in a clear-cut way. This is in part because all psychological phenomena are a mixture of a number of components or aspects: behavioural, sensory, affective, and cognitive. Sometimes, one of these components might prevail over the rest, but in other instances, such as sensorimotor activities, two or more components might be equally important. In sum, a rigorous psychologist will investigate the relevant psychological phenomena from different perspectives, using knowledge from different areas of psychology.

But psychologists too often adopt the perspective of one school as encompassing the whole psychological domain, and dismiss (most) other schools. More specifically, there are different conceptions of psychology with corresponding different epistemologies and methods. These differences in principles make most schools incompatible, and they will stay that way unless a single all-encompassing view of psychology is adopted by all.

According to Bunge, only such integration—based on the assumption that psychological processes involve neural, organic, and social factors—can yield a realistic, complete picture (description) of the phenomena involved, and a plausible, sound explanation in terms of the interactions between biological mechanisms and the subjective, socially-shaped mental states.

Psychology, then, should study its own problems but under the assumption that these phenomena are emergent from neurobiological processes, which “rewire” under the influence of other body systems (endocrine, for instance), and under the influence

of external stimuli (particularly social stimuli).

We will discuss the implications of Bunge’s philosophy in the last two chapters. Next, we will look in more detail at Bunge’s materialist scientism. The purpose of the next section is to identify central concepts in Bunge’s philosophy that are relevant to understanding his emergentist theory of mind, which I will summarize at the end of the chapter.

### **2.3 Bunge’s systemic philosophy: ontological and epistemological systemism and emergence**

There are a number of interrelated concepts throughout Bunge’s philosophy which are central to the understanding of his materialist conception of reality (ontology); and from which he derives his systemic methodology. In chapters 1 and 4 of *Matter and Mind* (Bunge 2010), Bunge develops his philosophical system—materialist scientism—according to which there is a bond between ontology and epistemology, and one of the central concepts to understand this bond is that of a “system”. Bunge says that the concept of “system” can be found as early as when Copernicus proposed that the planets were members of the solar system, and later when Harvey conjectured that the heart is the central component of the cardiovascular system. Nowadays, continues Bunge, all the sciences and technologies deal with a great variety of systems, from atoms to crystals, from cells to multi-cellular organisms, from material artifacts to social systems, to conceptual systems such as vector spaces, and semiotic systems such as languages.

Bunge argues that the concept of a system has become all-encompassing, as a result of which reality (the universe) is increasingly being understood as the system of

all systems. This is the central postulate of Bunge's philosophical *systemism* (Bunge 1979). This conception of a systemic reality and of systemic knowledge consequently entails *emergentism*, the thesis that every system has global or emergent properties that its components lack. In chapter 4 (Bunge 2010), Bunge explains the origin of this idea in connection with the history of science. He says that a number of discoveries and inventions that began during the 19th century contributed to the decline of the earlier scientific world view. Field physics, chemical synthesis, embryology, and biological evolution showed, among other discoveries, that matter, far from being a passive substance as had been previously thought, was capable of spontaneous self-organization.

Self-organization can be defined as the process in which different forms of global order or coordination occur as the result of the interactions between the components of a system. This process is not directed or controlled by any agent or subsystem inside or outside of the system; yet, the patterns exhibited during the process and the initial conditions may have been chosen or caused by an agent. Some typical examples are crystallization, the emergence of convection patterns in a liquid heated from below, swarming in groups of animals, and neural recognition of complex patterns. These systems, made of material substances, were first atomized and analyzed into their elementary components. New materials were even composed in the laboratory (like paper, plastics, and transuranians).

Scientists of the mid-twentieth century learned a number of things from these discoveries; for instance: that the elementary constituents of lead and DNA are the same, namely electrons and nucleons, as well as the gluons that keep the latter together; that platinum has only one electron more than iridium; that about 99% of our

genes are the same as those of the chimpanzees; that both New York and a primitive Amazonian village are occupied by members of the same biological species. Yet, he says, scientists also knew that these basic characteristics do not entail fundamental identities: platinum is not 77/78 parts iridium ; the reader is not 99% chimp, and the US Senate is not basically a primitive tribe's assembly of elders.

Bunge tries to teach us a philosophical (ontological and methodological) lesson with this brief piece of science history: the composition of material entities, though essential, is not everything there is. Structure and mechanism are equally important (see (Bunge 2003) for the composition-environment-structure-mechanism model of a system.) Therefore, concludes Bunge, “compositionism” (also identified with “naïve reductionism”), is too simplistic, which means that analysis or decomposition is always necessary but never sufficient to understand whole systems. In addition to identifying basic components of entities or systems of entities we must also find out the bonds keeping the parts together and explain the emergence of global properties: e.g, the hydrogen bonds between water molecules, and the psychological and economic bonds among the members of a financial group.

Moreover, Bunge says that the entities or systems that are relevant for an investigation must be placed in the appropriate context instead of being considered in isolation. He then presents some clear examples against “naïve-reductionist” approaches in science: atoms in the center of the Earth lose their outer electrons; neurons behave differently in different neuronal networks; and tyrannical bosses may behave tamely and lovingly at home. The methodological lesson, according to Bunge, is that every bottom-up analysis should be supplemented with a top-down analysis, because the whole constrains the parts in virtue of their interactions with other constituents of the

same system. Examples: the strains in a component of a metallic structure; or the anxiety in a member of a social system. We need to integrate both kinds of analyses to properly explain complex phenomena.

This understanding, explains Bunge, contradicts the principle of the physicalist (or vulgar-materialist) worldview, according to which the universe is laid out on a single level of physical things, about which physicists may eventually craft the theory of everything. The methodological counterpart—that is, the atomistic (reductionist) program of explaining the whole by its parts—fails every time the behaviour of the parts is strongly influenced by its position in the whole. Bunge exemplifies this reductionism with rational-choice theories used in social studies and economics, which have failed because they ignore that individual behaviour is influenced by macro-social circumstances (such as political and economic circumstances).

We can add other examples to depict the limitations of the atomistic or reductive approach; for instance, we can consider the advances in the nature-nurture debate in psychology (especially regarding language acquisition). These advances took place as more comprehensive theories and corresponding data from research in cognitive neurobiological and social development became available (Elman et al. 1996, Karmiloff-Smith 1992, Karmiloff-Smith et al. 1998, Lightfoot 1989, Neville 1991, Oates & Grayson 2004). This research has challenged nativist programs inspired by Chomsky’s theory of universal grammar, which argues that our language “structure” is innate. Nativist programs understood this thesis as a methodological project: to atomize language until its biological basis become available, as a means of explaining linguistic phenomena (Pinker 1994).

Bunge distinguishes his view, a systemic-emergent materialist conception of reality, from physicalism (or early, naïve materialism). According to Bunge’s characterization in chapter 5 (Bunge 2010), physicalism can be understood as idealizing the early scientific worldview and its accomplishments. The initial program of atomic physics since antiquity was clear: to account for macro phenomena—that is, things as they are perceived by subjects—in terms of imperceptible micro-phenomena. It just happens that the only domain in which emergence cannot be found, says Bunge, is that of classical mechanics, which deals only with bodies small and large (macro-phenomena). Classical mechanics overlooks micro-phenomena themselves, such as a collection of particles (water molecules for instance) which can re-organize themselves in different ways: as snowflakes, liquid drops, lakes, seas, or clouds. Each of these things has properties that the others lack.

In view of these—and other—limitations of a physicalist understanding of the nature of (material) reality, Bunge proposes to study interrelated levels of organization of matter, instead of attempting to reduce some macro-phenomena to micro-components (downward or micro-reduction), physicalist-style. Bunge argues that in the course of the last two centuries, chemistry, biology, and social science have found systems of millions of different kinds (of material composition), thus confirming the impossibility of crafting an all-fitting theory, as that envisioned by physicalists (reducing or atomizing all phenomena to their micro-physical components). Indeed, he says, we know about 200 different kinds of “elementary particles”; more than 100 different kinds of atoms; over two million kinds of molecules; hundreds of millions of biological species; and hundreds of kinds of social system. In other words, some collections of things, whether atoms, molecules, fibers, people, or what have you, may combine

into qualitatively different systems. Bunge then says: “this set of processes involving qualitative jumps, is what emergence in the ontological sense is all about” (Bunge 2010, page75). There also similar ideas in other scholars (Alexander 1920, Bedau & Humphreys 2007, Blitz 1992, Bunge 1969, 1979, 2003, Lewes 1874, Luisi 2006, Morgan 1933, Needham 1943, Sellars 1970, Wimsat 2007). Yet, the general notion of an integrative level, or level of organization, is rather recent (Bunge 1960, 1969, 1980*a*, Hartmann 1949, Novikoff 1945), and it needs further elaboration.

### 2.3.1 Levels

In chapter 4 of *Mind and Matter* (Bunge 2010), Bunge defines an *ontological level* as follows:

A structural level is a set of objects each of which possesses properties peculiar to them—such as, e.g., being able to metabolize, or to form social systems. However, this definition is defective because it is roughly the same as that of a species of things, such as a chemical or biological species. In both cases the concept in question is defined by a system of properties, that is, a set of interrelated properties. Let us aim for greater precision.(Bunge 2010, page89)

The concept of a level is associated with that of emergence in the following way:

For property P to be (ontologically) emergent, we should say that P emerges on level  $L_n$ , which suggests that P was not possessed by any entities on the preceding level  $L_{n-1}$ . For example, presumably the property of being valuable emerged along with the life level; and that of acting purposefully emerged along with the level composed of animals endowed with a prefrontal cortex—roughly mammals and birds. Notice the virtuous circle: the concept of emergence defines that of level, which in turn redefines the emergence concept.(Bunge 2010, page 90)

Some examples of physical levels are, according to Bunge, those of classons and quantons, small molecules, macromolecules, unicellular and multicellular organisms; the microsocial, and the macrosocial. He also adds more familiar examples of emergence and levels: bricks-wall-house-town, population-gang-firm-conglomerate, and letter-word-phrase-sentence-text. The higher levels are dependent upon the lower ones but they are not reducible to them in an ontological sense even if complex systems are shown to emerge from the interaction of their constituents. In short, any analysis of a system should produce an account of emergence; therefore, physicalism fails, because atomizing (reducing) systems to its components cannot explain the system with its emergent features.

According to Bunge's description, these ontological levels are organized by the ontological (material or physical) relation of precedence. Then, these levels are explained by means of epistemic levels, which are organized by the relation of reducibility, "as when physicists explain magnets in terms of the spin and the associated magnetism of their constituent atoms, and social scientists claim that all social facts emerge from individual actions" (Bunge 2010, page 91).

### **2.3.2 Bunge's Theory of Mind: Emergent, Systemic, and Science-Based**

Bunge's scientific materialism is a case of what he refers to as *philosophical syncretism*, that is, the attempt to integrate all knowledge into a single philosophical system. Contemporary scientific materialism (CSM), as Bunge understands it (see page 25), holds the materialist thesis: all existents are material. CSM is systemic

though not holistic; consequently, it is also emergentist, since systems possess properties that their components lack; and it is “scientific”, says Bunge, because it operates with the scientific worldview and methods <sup>4</sup>.

Bunge says that (higher level) cognition is the result of a biosocial process, since all humans learn from others, and from the common pool called “human knowledge”. He says that the “social embedding” of cognition is such that the isolated brain does not function normally, and it is likely to hallucinate. He supports his statements with the noteworthy experiments on sensory deprivation, conducted by Donald Hebb in 1951 (Hebb 1980), that have recently been used by the CIA on prisoners at Guantánamo. Cognition is a brain process strongly influenced by the environment. Consequently, Bunge proposes that epistemology needs to be socialized as well as naturalized; and he argues that scientific materialism encourages this development by postulating the existence of material systems (see below). Meanwhile, idealism and naturalism discourage it, because neither has a coherent explanation of how the artificial and the natural are integrated in a materialist conception of the world, that is consistent with the scientific view; realism and materialism need to go together to remain useful to science

According to this view, Bunge understands the brain as a complex biological system and what we call “mind” as an emergent physical sub-system in the brain. Bunge defines “system” as follows:

A *system* is a complex object whose parts or components are held together by bonds of some kind. These bonds are logical in the case of a conceptual system, such as a theory; they are material in the case of a concrete system, such as an atom, cell, immune system, family, or hospital. The collection of all such relations among a

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<sup>4</sup>As mentioned earlier in the footnote to page 25, Bunge is unapologetically scientific.

system's constituents is its structure (or organization, or architecture) (Bunge 2004, p. 188).

What are material systems?

Depending on the system's constituents and the bonds among them, a concrete or material system may belong in either of the following levels: physical, chemical, biological, social, and technological. The semiotic systems, such as texts and diagrams, are hybrid, for they are composed of material signs or signals, some of which convey semantic meanings to their potential users (Bunge 2004, p. 188).

Ontological emergence conceives of entities as systems, so understood. That is, without postulating a systemic understanding of reality, we cannot explain emergent phenomena. Bunge's ontological postulation according to which reality is composed of systems, also comes with a corresponding methodology to study the contents of the reality so conceived. From what has been said so far, it seems clear that a reductionist or atomist approach cannot fully explain the composition of entities understood as systems; and therefore, it cannot provide a scientific account of ontological emergence. This explains why we need psychology on top of neurobiology: to understand higher level processes that involve cognition and that are largely dependant on social factors.

According to Bunge, systemism is the methodological alternative to both reductionism and holism. This is the approach adopted by most scholars who attempt to explain the formation, maintenance, repair, or dismantling of any complex thing of any kind. The reason for this is, according to Bunge, that systemism is as inclusive as holism, but unlike the latter, it incorporates the analysis of the system into its constituents, hence rejecting the intuitionist epistemology inherent in holism (Bunge 2004, pp. 190-191). Bunge refers here to holistic approaches in science, which are difficult to define, since they are used to study "complex entities or systems" (in

ecology, biology, neuroscience, and psychology, for instance) when it is assumed that some systems are “wholes” (in virtue of their specific emergent qualities) that cannot be understood by analyzing their material composition, and therefore it might be assumed that there is a “self-organizing principle”. Even though Bunge does not explain what he specifically means by “epistemological intuition”, I understand that he rejects any “intuitive” premise for being, because such premise might imply that there is “non-natural” or “non-physical” explanations for the systems’ organization and functioning, which in Bunge’s materialist conception of science is unacceptable.

In sum, according to Bunge’s systemic and science-based philosophy of mind, psychology should be based in the following basic philosophical understanding of the mind/brain:

1. Mind (brain) is causal: mental processes influence brain processes and occasionally produce structural changes. Also, mental processes affect and are affected by other regulatory systems of the body, such as the immune system and the endocrine system.
2. Every mental capacity is the result of a brain subsystem. However, because the various subsystems are structurally connected, no mental “faculty” is separated from the rest. For instance, cognition is not independent of motivation and vice versa.
3. Mental processes are strongly influenced by the subjects’ social environment and they contribute to shaping the latter as well via behaviour and language.
4. Psychological phenomena are objective phenomena: they occur in a person’s brain, and so their existence is independent of the person studying them, who

can nevertheless come to know some of them partially and gradually.

In regard to this last claim, Bunge says that the fact that something exists when experienced by a subject only poses a problem if “reality” is defined as the totality of whatever exists independently of any subjects. But this definition, to our dismay, leaves us, subjects, out of reality. On top of that, it makes subjective experiences unreal, and therefore not an apt subject for science to study. Whereas these consequences seem highly disturbing, it seems much more reasonable to drop the equation of “reality” with “independent of the subject’s experiences”.

There are, according to Bunge, two typical ways in which subjective experiences can be included in the world or reality. One way is to regard the mental as immaterial, and add it to the external world (dualism). This proposal does not deny the knowledge of the natural sciences, but it implies that the mind is something unnatural, thus psychology cannot be a science similar to the other sciences or benefiting from them. However, notes Bunge, there is also plenty of evidence that this is not the case, most of which comes from neuropsychology and experimental psychology. The second way is to understand “reality” as “materiality” and to understand the mental as a collection of processes in an organism (materialism). Mental phenomena, so understood, are then suitable for scientific enquiry. Once psychologists adopt this view, says Bunge, psychology should slowly evolve into a mature science, dropping along the way any remnants of philosophical dualism.

## Chapter 3

# Bobadilla's philosophy of psychology

### 3.1 Introduction

In this chapter I will introduce Dante Bobadilla's views on the epistemology of psychology. His views are opposed to Bunge's in two ways. First, Bobadilla proposes to re-conceive science, which Bunge considers the paradigm of knowledge. Second, Bobadilla favors a comprehensive understanding of psychology, according to which knowledge in psychology should be pursued without the limitations of the natural science's scope and methodology. I will refer in this chapter to one of the scholar's articles (Bobadilla 2005), which is written in Spanish. Bobadilla (Bobadilla 2013) has read this chapter and made several suggestions to guarantee that what I expressed here agrees with his views.

I chose Bobadilla for two main reasons. First, because he presents an understanding of psychology that differs from mainstream North-American psychology and philosophy of mind. The North-American view of psychology and philosophy is largely analytic and naturalist, mostly concerned with the analysis of specific problems and concepts, inside a naturalist framework. In a naturalist framework, investigation

must proceed in accordance with the methodology of the natural sciences. Bobadilla, instead, studies psychology's philosophical foundations from a broader philosophical perspective, in which the scientific framework is considered as constraining rather than directing philosophical enquiry. Second, Bunge—among other scholars—maintains that philosophy of science or epistemology is best done by those who know the discipline under study from within (Bunge 1980*b*, chapter1). So, following this idea, I searched for a psychologist's philosophy, and discovered Bobadilla's work. Finally, Bobadilla's view represents contemporary conceptions of psychology in the Spanish-American intellectual community, which deserve to be known and translated to enrich scholarly discussion.

### **3.2 The problems of psychology**

According to Bobadilla, psychology is different from the natural sciences in that whereas the latter study physical reality, psychology studies reality as humans conceive it. Therefore, psychology's domain of study is not the "natural world" of objective facts that occur independently from human existence. Psychology's domain is the human subject. The main characteristic of human subjects is that they experience mental phenomena and act upon them. The ultimate goal of psychology, then, is to understand the totality of mental phenomena that guide our behaviour and that allow our species to survive and to flourish. Psychology, then, is concerned with mental states, processes, and interactions; all of which are mental phenomena.

In Bobadilla's view, some mental phenomena have an observable manifestation, such as behaviour, including language. Yet, some mental phenomena such as learning and memory cannot be observed or conceived as scientific (measurable) variables

without oversimplifying what they really are. These mental phenomena are immersed in a complex net of human interactions, mental processes and contents. In other words, human thought and behaviour are caused by a combination of states and processes that cannot be entirely decomposed and properly identified with our current conceptual and scientific tools.

Bobadilla understands *psychological or mental phenomena*, such as thought and behaviour, to be phenomena of such complexity that they cannot be properly studied by the means employed in the natural sciences. The complexity to which Bobadilla refers is given by the combination of “natural phenomena” with the individual and global socio-cultural events that took place during human history. Therefore, since science has been traditionally conceived as the study of the natural world, those disciplines concerned with the different aspects of human lives—insofar as these are conceived as “non-natural”—have struggled to maintain their status as legitimate domains of study. What is more, scholars interested in social phenomena thought that the only way to obtain genuine knowledge of them was by studying them scientifically. In this conception, humans are conceived of as yet another natural phenomenon, subject to the same physical laws as other natural entities.

Bobadilla describes the move of the social sciences towards their naturalization as “*scientistic*”. By adopting the paradigm of the natural sciences, scholars concerned with the human sciences fail to acknowledge the distinctive qualities that separate humans from other animal species; namely, our complex cognitive structure, our culture, and the resulting behaviour. Bobadilla argues that, unlike other species, we act according to what we believe to be the case, and in consequence of the conceptions that we form. Bobadilla says that the human experience of reality cannot be reduced

to the same “*reality*” that science tries to explain. For us, he argues, reality is what we can grasp with our senses and cognitive processes, which develop and function together with physiological and cultural processes.

Bobadilla maintains that scientifically inclined psychologists have become obsessed with “objectivity” and with being able to observe and measure everything. They are under the impression, he says, that by doing this, they can produce genuine knowledge. However, aiming at the scientific standards of knowledge forces psychology to leave aside the most important features of human lives, which are individual and cultural meanings, and the complex cognitive processes by which the subject interacts with its social and natural environment.

Bobadilla claims that subjective phenomena, which are exclusive to human subjects and the way in which they live, have been excluded from scientific investigation for being incompatible with the conception of reality as ontologically objective. However, says Bobadilla, for psychology to be considered a scientific discipline, it is necessary to resist this form of *naturalism*, which is inadequate to deal with the complexity of human psychology.

Bobadilla’s argument entails dropping the naturalist conception of the world according to which everything that exists is ontologically objective and developing a new epistemology for psychology. He argues that naturalism fails to provide a guideline to investigate real, mental phenomena. According to Bobadilla, the origin of this mistaken naturalism is the failure to acknowledge the centrality of human subjective knowledge. We have developed science, he says, a sophisticated *cognitive* device, to help us to understand and to adapt to nature. Therefore, science has been understood as an “image of the world” or a “model of reality”. This model of reality, however,

was erroneously conceived as a representation of what exists outside of the subject's consciousness. Consequently, the subject's mental life, without which we could conduct no enquiry—even scientific ones—has been left out. As a result, we have been presented with a challenge: to create a model of reality to help us to know the world, and which includes the mind and enquiry itself. The question then is: can we know ourselves using the same framework and methods that scientists have been using to know the world beyond ourselves? While Bunge says “of course!” Bobadilla says “no way!”

### **3.3 Understanding the nature of scientific knowledge and psychology**

Bobadilla presents a conception of scientific knowledge that befriends psychological problems and makes it possible to include psychology in the framework of science, just so long as science is properly understood. He first reviews the history of science, as a prelude to his discussions of philosophy of science and psychology. According to him, these two domains are closely related because they are both concerned with the nature of human knowledge. He says that in the 20<sup>th</sup> century, scientific knowledge is understood as the knowledge gained through the application of the *scientific method*, characterized by systematic observation and experimentation.

Bobadilla describes early 20th century's epistemologists (philosophers of science) as embracing scientism. He claims that, under the influence of these epistemologists, social scientists tried to adopt their epistemic “prescriptions”. These epistemic guidelines, however, were not designed to study “objects” that only exist as features of the subject's experience, such as societies, culture, institutions, political systems.

In other words, the social “scientists” failed to address the phenomena that they were interested in: mind or observer-dependent phenomena—those features of reality that do not exist without humans and their mental lives.

Scientific naturalism, says Bobadilla, carries with it a paradox, because it denies the source of its existence and success. This is a translation of Bobadilla’s words:

The search for scientific knowledge has never been pursued without recourse to the imagination and creativity of the researchers who conceive the appropriate experiments and direct the investigation towards its goal, making all the necessary modifications during the whole process. It has been a mistake to give all the credit to the instrumental apparatus surrounding the experiment, leaving aside the role of the active minds working with these instruments in inventive ways in order to attain trustworthy results. (Bobadilla 2005, page 35)

Similar observations can be found in the work of another Latin-American scholar, the psychiatrist Carlos Velasco Suárez (Velasco Suárez 2003, 2010). Velasco Suárez identifies the importance of the changes brought by modern physics and modern science and technology in general to our understanding of human knowledge and therefore of psychology as a science concerned with human experience and cognition (Velasco Suárez 2003). Velasco Suárez states what Bobadilla merely suggests, which is the emergence of a new, more accurate, conception of objectivity: “a scientific objectivity which includes the subjective” (page 22). Both Velasco Suárez and Bobadilla acknowledge that we are entering a new era regarding the conception of human experience and knowledge. In this era, according to Velasco Suárez, we are discovering with increasing clarity “the objectivity of the subjective and the subjectivity of the objective” (page 23). Using this expression, Velasco Suárez is alluding to the centrality of the human experience—both objective and subjective—for our understanding

of scientific knowledge as a special case of human knowledge.

The idea of reconciling objective and subjective phenomena within a scientific framework is not exclusive of these Latin-American scholars. There is a long tradition among European philosophers in the domain of phenomenology of investigating the links between so-called *subjective and objective data*. Best known are the works of Brentano (Brentano 1874), and other European scholars inspired by him, such as Edith Stein (Stein 1964). Finally, the idea of a science that combines subjective or first-person data and objective or third-person data has also become known among North-American scholars through David Chalmers and his research program on the science of consciousness (Chalmers 2004). We can see all of these works as attempts at demystifying the scientific view, and giving proper recognition to first-person data in the accomplishment of knowledge of the world and ourselves.

Bobadilla uses an example to “demystify” the way in which science proceeds, trying to stress the role of “peripheral”, subjective and/or social, phenomena in scientific advances. Scientists, he says, often have to appeal to “facts” that they cannot observe but that need to be assumed in order to provide an explanatory theory. For instance, when in 1865 Mendel began his studies on the biological inheritance of features of a generation of plants from their predecessors, he described the mechanism of inheritance without recourse to direct observations by postulating “elements” that would explain the observations. These “elements” of the biological inheritance were (dimly) observed half a century later, and they were finally understood in 1953. However, Mendel’s investigation, published in 1866, raised no questions regarding its “scientific” status.

What would have happened if Mendel’s work would have been questioned as

“pseudoscientific” on the grounds that it appeals to the existence of some “elements” that cannot be observed? Maybe, suggests Bobadilla, biology would have suffered psychology’s fate. Namely, many versions of biology would have been developed, which instead of investigating the origin of life, would have dogmatically changed the object of study according to what can be observed, and would have considered as knowledge only what comes from within their paradigm.

This example is intended to show that explanatory theories can be scientific even if they refer to “factors” that cannot be observed. These theories can be confirmed with observations in the future. In addition, Bobadilla says that even if we know that our assumptions cannot be corroborated, as in the case of the postulations regarding black holes, theories cannot be disregarded just for being tentative. To evaluate the theory, he argues, we appeal to “triangulation criteria” , which include scientific consensus, contrasting with other sound theories, and scholarly discussion.

Bobadilla points out that the scientific developments that took place during the 20<sup>th</sup> century challenged the assumptions of the first theories from the philosophy of science. In the middle of this century, concepts such as *probability*, *complexity*, and *chaos* became part of the scientific vocabulary. Science is no longer grounded on the assumptions of an implicit order in objective reality, and it no longer conceives of causal determinism or predictive power as means for confirming scientific theories. Bobadilla argues that this change in the scientific conception of reality has been so dramatic that we are still trying to understand it. In view of this panorama, says Bobadilla, we need to build a philosophy of scientific knowledge specifically designed for psychology: an epistemology of psychology. This philosophy entails assuming a domain of study as the result of our particular interests and not as the result of

something that we find “given” in the observable world.

Epistemology, in Bobadilla’s view, justifies the existence of the chosen domain and guides enquiry by serving as a referential framework for all theoretical and applied research. In his understanding, the epistemic framework is not as much determined by methodological rules but by the topics and problems that researchers find interesting and deserving of their time and resources. According to this, the domain of psychology has been determined by our historical interest in the human subject understood as a distinctive species. From a modern point of view, we understand the interest of psychology’s enquiry as corresponding to the cognitive nature of the thoughts with which humans guide their actions.

According to Bobadilla’s conception of the domain of psychology, the kind of scientific explanation that best suits its objects of study and its problems has to be dictated by an epistemology that assumes the specific interests or problems of psychology as given in history. Historically, scholars have been concerned with human thought and its products: human creations, human arts and techniques, social and political systems. Therefore, psychology’s epistemology will be different from that designed for the objective or *observer-independent* objects of study, because it deals with the subject’s experience, or subjective reality, with objects that are mind-dependent. In other words: psychology studies reality as it is perceived by the subject.

Bobadilla believes that now is the time to recognize this understanding of psychology, for the natural sciences have reached unexpected results regarding the assumptions about objective reality, and so scholars no longer have a narrow understanding of how science proceeds. In consequence, today we do not know, for instance, if string

theory belongs to the domain of physics or philosophy. Bobadilla says that the complex scenario that we find in physics can be compared to psychology's situation in that our conception of an exclusively objective reality has no longer the relevance that it used to have for our search for knowledge, as we find aspects of reality that cannot be measured or experimentally manipulated. In view of these changes, claims Bobadilla, psychologists need to turn to philosophy, in the same way that many physicists have done, to better understand their specific domain and its limitations.

Bobadilla suggests that psychology might be the most difficult science because it is concerned with natural and cultural aspects of human life. He says that humans have a dual constitution, which is the result of the brain's evolution, developing the structures that endow humans with a logical cognitive capacity. These cognitive structures allow subjects to perceive and operate in accordance to cognitive information. Psychology, then, needs to explain the dynamic of the mental processes that allow information processing. This is psychology's main goal, and the framework for orienting all psychological investigations. Bobadilla holds this principle as the first step in producing an epistemology of psychology, which will guarantee psychology's scientific character that had been lost during the 20<sup>th</sup> century's fragmentation of the field into "pseudoscientific psychologies".

### **3.3.1 Psychology's field**

Having established the kind of science that psychology is, Bobadilla proceeds to argue in its favor. He holds that the subject matter of psychology refers to those aspects that constitute what can be called "human nature." The idea of *human nature* designates the set of qualities specific of the human species, and the capacities

that allow humans to build their own material and conceptual structures to improve their lives, overcoming some of nature's constraints. These aspects or qualities reside in the human's *psychic structure* or *psyche*. In Bobadilla's understanding, the psyche refers to higher functions of the brain's structure (see section 3.4).

According to the psychologist, there are at least three central arguments to sustain this understanding of psychology. The first argument is based on the etymological meaning of the word "psychology", which is "the study of the psyche". Aristotle, in *De Anima*, says that the "anima" is the cause of behaviour in animals. But, in the case of humans, this "anima" is the "psyche" (Aristotle 1981). He then describes the "psyche" as the human intellect and other cognitive aspects (i.e., perception, memory, etc).

Bobadilla says that since Aristotle, scholars have tried to explain how humans have accomplished a qualitative leap over the other animals, becoming capable of realizing complex mental operations, producing music, art, and sophisticated artifacts. Another central question is how human behaviour is guided by certain beliefs and ways of reasoning that are learned from the culture. This process, explains Bobadilla, requires the subject to be able to process information from the culture. In this process also the cognitive structures keep developing, allowing more complex ways of reasoning.

The psyche, says Bobadilla, is what constitutes human's specific nature. The Greeks already understood the psyche as what in current terms we might call the cognitive system and its complex interaction with the rest of the world (see also (Beorlegui 1987) for this same argument). The point of this first argument is to show that when the Greeks talk about psychology as the study of the psyche they

already conceive psychology as concerned with the structure of the psyche or the intellect, or the cognitive abilities, where “cognition” is understood in a broad sense as tacit and/or representational, rational, and operative, and not only as a form of computation. This psyche is understood as the product of biological and cultural factors, from which the specific conditions in humans arise.

The second argument to sustain the proposed understanding of psychology is based on the historical contributions that have built knowledge of the psychological domain. Since Aristotle, there have been studies that investigate the higher cognitive functions of humans from different perspectives: philosophy of knowledge, ethics, literature, philosophy of man. These studies have focused on different aspects of the psyche: moral, intellectual, affective, and cultural; depending on the epochs, authors, and schools of thought. Yet, these works assume, more or less explicitly, the conception of a domain of knowledge about the specific human qualities that allow us to know and to act in the world in the way we do. Bobadilla argues that this continuity across time and cultures in the work of scholars legitimizes the adoption of this traditional scope regarding psychology’s subject matter: the psyche.

According to this tradition, psychology investigates psychological phenomena. Psychological phenomena, according to Bobadilla, can be defined as conscious brain states and processes in human subjects mediated by culture. Bobadilla emphasizes the role of culture in evolution as well as in individual development. According to him, the study of our culture provides the necessary material for understanding how the human mind works; namely, why humans think and act in the ways they do, and how. Psychology then attempts to understand and explain the nature of these phenomena: how thought, representations, and other conscious processes occur.

Bobadilla's third argument in favor of his understanding of psychology is academic consensus. Very few scholars, he maintains, could deny nowadays that psychology's object of study is the cognitive and emotional aspects of human individuals, including their biological and cultural components. Evidence of this consensus can be found in books, articles, in the description of the university programs around the world, as well as in current psychology textbooks. Indeed, psychology textbooks present in their tables of contents, without exception, themes that correspond to this understanding. Psychology textbooks normally cite, for instance, among the themes of psychology: thought, decision making, learning, emotion, attributions, social behaviour, brain structure and functions, human development, and abnormal behaviour<sup>1</sup>.

### **3.4 An integrative framework to study psychological phenomena**

Bobadilla argues that human experience is "re-created" in every generation and every individual. We cannot be content with a psychology that only describes generalities, without reference to the variability that characterizes the human species. It is a dynamic reality that encompasses the totality of collective interpretations that are based on cultural structures that give them coherence. These structures are the systems of cultural rationality, which allow us to understand the homogeneous and general characteristics that exist in complex human reality, beyond the individual differences.

The study of these phenomena, says Bobadilla, entails the study of basic mental

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<sup>1</sup>I must say that having looked by myself at over 40 academic programs in psychology in universities all around the world, Bobadilla's statement seems accurate.

operations. These are at first investigated and understood in terms of the physical and biological characteristics of the brain. However, the brain functions with such complexity and specialization that some of its higher functions need to be studied separately, attending to their unique and complex characteristics. Psychology is concerned with these complex states and processes produced by the brain, that are identified as the “psychic structure” or “psyche”.

Bobadilla argues that the kind of activity that characterizes the psyche can be identified with the kind of activity that characterizes the “Internet”. To understand the internet and to be able to use it, there is no need to understand anything about electronics or computer networks. The internet, physically, consists of nothing other than electric and/or light impulses travelling through cables and switches. However, these impulses have a meaning beyond their physical reality, according to a *protocol*. In the same way, mental contents have a meaning beyond their physical substrate—the neurons. Psychology tries to understand these mental contents and their meanings. We can think of the psyche in the same way in which we think about the internet. In the case of the internet, its design recognizes several levels of protocol, each based on the previous one, collectively named *TCP/IP*. A typical organization of these levels is as follows:

1. the *physical layer*, where one considers the concrete signals that travel through the cables;
2. the *data link layer*, which defines how the electrical signals are interpreted as numbers;
3. the *network layer*, where the data transmitted is grouped in “packets”;

4. the *transport layer*, where the focus is on just transmitting data from one device to another (i.e., formatting the data in packets and using the previous layer to send it).
5. the *session layer*, where data is organized in such a way that sessions (i.e., medium and long term connections) between devices are established and maintained;
6. the *presentation layer*, where data from the application layer is processed (e.g. encryption) and fed to lower level layer;
7. the *application layer*, where programs communicate between computers; the most obvious example these days would be a browser getting a web page from a server.

Bobadilla's analogy is meant to show us how we can approach mental processes. The first six levels correspond to different physical levels of organization in the brain that are necessary for the highest level to develop. However, once this last level is working, its functioning is independent of its physical substrate. Just as we do not need to understand how the Internet works to be able to access its contents (a social network, for instance), we do not need to understand how the brain works to access its mental contents, such as the information involved in human interactions.

We can think of Bobadilla's analogy in the following way: if we ask "what is a social network?" and a computer scientist explains to us the TCP/IP stack, would that be the kind of answer that we are looking for? This could be considered a "scientific" answer, but it would not tell us what a social network is in the following sense: how it is possible for people to interact in the ways they do using a virtual structure

with its specific characteristics, the motivations, the advantages and limitations, the moral aspects, and many other questions regarding psychological, social, and cultural aspects of the phenomenon. From this point of view, a “social network” would be the object of study of social or cultural sciences, including psychology, with its specific focus on the individual.

Bobadilla tries to show that the object of psychology is the human mind immersed in a social context in which individuals are related by a complex system of symbols, which is the product of the interactions among conscious individuals. Bobadilla asks: where and how are these systems realized and what are their dynamics? How are culture and civilization possible? How is the “virtual reality” of consciousness possible? How is knowledge possible, and how is it produced, transformed and recovered? These, the scholar claims, are some of the questions that psychology faces as a science of the human mind.

Psychology as a science of the human mind must operate with a psychological perspective. Bobadilla explains that a psychological perspective assumes that humans are fundamentally defined and understood as cognitive beings. He then adds that we can study humans from a naturalist perspective, but this study will be a “zoology” or an “ethology” or a “biology”, but not a psychology. Bobadilla holds that humans, unlike other species, are not wholly described by reference to their genetic make up, but mostly by reference to their cognitive information and cognitive make up.

In Bobadilla’s view, then, psychology aims at explaining behaviour as the product of the human individual information processing that derives from cultural rationality, and from the type of information that is processed. This approach, says the scholar, is coherent with psychology’s focus on individual subjects; because one of

the most salient characteristics of humans is the variations in behaviour that we find individually in the species.

Humans are still part of nature, says Bobadilla, and that is why we can and must study ourselves with the means of the natural sciences. However, the domain that psychology is mainly concerned with is not this biological one, but the one characterized by the qualitative leap between humans and other species. Namely, the domain of psychology's study corresponds to the individual and culturally endowed "cognitive programs" with which human agents function and guide their actions.

I have no doubt that the mind works with an organic basis, just I have no doubt that this PC works with an electric current. However, just like I can't know how the internet works by looking at the electric circuitry of the PC, I can't know how the mind works by looking at the neurobiological circuitry neither. This is because in each case there are two different levels of integration. In the TCP/IP stack, each [higher] level has an independent integration, and the top level of this stack no longer depends on its [original] physical substrate. That is, to understand how this top level (the level in which the internet exists) works, it does not matter by which physical means my PC's programs are interconnected with other computers' programs so I can browse the internet using my PC. The same happens with the mind. (Bobadilla 2013)<sup>2</sup>

Summing up, Bobadilla bases his understanding of psychological investigation on his own background as a psychologist. Reflecting on his practice makes evident to him the relevance of a symbolic, culturally influenced reality, experienced by the subject. According to Bobadilla, the subject directs her thoughts and actions in accordance to this reality. Therefore, the psychologist's job is to interpret the subject's behaviour and verbal communications in order to "re-construct" the person's complex, dynamic, and subjective reality. This understanding of psychology is radically

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<sup>2</sup>This my translation from Bobadilla's personal communication.

different from that of Bunge, most notably in the relevance that Bobadilla grants to the subject's experience, which Bunge completely disregards as a valuable source of scientific knowledge. Bobadilla also understands the psyche as a cognitive structure, that manipulates symbolic information, and incorporates the culture's values. Therefore, understanding these symbolic contents is essential to the activity of the psychologist as a theorist, as well as in psychology's practice.

## Chapter 4

# Bunge and Bobadilla's views on psychology: A comparison

In this chapter, I will compare Bunge and Bobadilla's positions with regard to the following:

- psychology's "fragmentation"
- psychology's object of study
- psychology's status as a scientific discipline
- the nature of scientific knowledge

The purpose of this comparison is to provide a philosophy of psychology that addresses all of these issues. In section 4.1, I will compare the scholars' views on each issue in the order presented above. I will begin by comparing their explanations of psychology's historical and current divisions. Then, I will compare their conceptions of psychology's object of study or subject matter. In section 4.2 I will elaborate on the scholars' conception of mind; and I will try to show that the source of their

disagreements can be found in their adoption of different theories of mind. By doing this, Bunge's and Bobadilla's philosophical positions and arguments will become clearer, as will their strengths and shortcomings. Finally, this analysis should help us to better understand the two scholars' differences regarding the remaining issues: psychology's scientific status and the nature of science, also included in section 4.2.

#### **4.1 The “Fragmentation” of psychology**

Bunge and Bobadilla agree that psychology is fragmented into rival schools and disjoint subfields. Both understand this fragmentation and its consequences as posing the problem of establishing some epistemological criteria to evaluate which theories and research programs can be considered legitimate psychological knowledge. Bunge and Bobadilla agree that psychology has essentially become an applied discipline, oriented towards different applications without a common philosophical ground. Both Bunge and Bobadilla believe that once the subject of psychology is rightfully conceived and epistemically framed, psychology can operate with as much rigor as the natural sciences. Therefore, both scholars propose basic epistemological criteria, to evaluate the existing psychological theories. Moreover, both scholars believe that some psychological models make valuable contributions to the field, despite their individual shortcomings, and inconsistencies.

The kind of inconsistencies that Bunge and Bobadilla refer to are illustrated by the different assumptions and corresponding approaches from three prominent models of human psychology: psychological behaviourism, psychoanalysis, and humanistic psychology. Psychoanalytic scholars consider human behaviour to be deterministic, responding to the non-rational forces of unconscious states, instincts, and biological

drives. Therefore, psychoanalysts do not believe in free will, the subject's autonomy to rationally choose. On the other hand, humanistic psychologists base their theorizing on the assumption that persons have a unique constitution endowing them with free will. Moreover, because of their free-will, persons are non-suitable objects for scientific investigation. Finally, Watson's methodological behaviourism is proposed as the objective (scientific) study of human and animal behaviour without postulating internal mental states.

In view of the inconsistencies among theories in psychology, Bunge and Bobadilla agree that psychology should be an "uncompromising" or independent science. They also criticize psychologists for the careless application of statistical procedures and psychometrics.

Bunge and Bobadilla present similar views regarding the misapplication of these methodological devices, according to which statistics and psychometrics have been used without clear epistemic criteria to validate them. Hence, these testing and analytical devices are prone to be manipulated according to individual bias, and to become ideological tools. Bunge and Bobadilla argue that they can be used to justify what otherwise would be considered unjustifiable on scientific or rational grounds. The two scholars argue that psychological applications should be oriented by and based upon rigorous theoretical research; that is, by scientific hypotheses (empirically testable) based on philosophical assumptions established upon the aims of the scientists and by rational inquiry.

According to the above views, Bunge and Bobadilla share a similar understanding of the scientific method as including:

- (1) Philosophical foundations, which are claims that are assumed in order to conduct research in a certain area, which include defining the subject of study and proposing theses about it in agreement with the postulates of general science, together with some methodological guidelines (epistemology);
- (2) Theoretical work, which entails devising hypotheses that derive from a combination of the epistemic guidelines, together with some other information of diverse nature, based on a combination of observations, claims, and insights from other research programs, which also include the selection of the means by which the hypothesis would be tested, and the interpretation of the results;
- (3) The empirical work, in which tests, experiments, quantitative data analysis, and modelling, among many other scientific devices, are applied.

In this common understanding of science, scientific research presupposes (is based on) philosophical inquiry. Then, since these two scholars claim that there are divisions in psychology in the form of methodological and conceptual problems, psychology's fragmentation can be understood as the result of the adoption of different philosophical assumptions. If this understanding of psychology's divisions as the result of philosophical conflict is correct, then the two scholars should be able to provide an explanation of this conflict, including the identification of the different philosophical positions adopted by psychologists. Bunge does so by showing how specific models of psychology imply certain philosophical claims about the nature of mind and reality (cfr. Section 2.2). He also specifies his own philosophical commitments (a theory of mind and reality), which underlie his understanding of psychology as a scientific activity.

Bunge argues that, since psychology is fragmented because of the adoption of different and incompatible philosophies of mind, its field of study can only be unified by adopting a single philosophical position. He proposes scientific materialism. In Bunge's view, scientific materialism provides the best hypothesis for scientifically explaining how psychological phenomena are possible, because it is consistent with the scientific conception of reality (see Appendix). In particular, he adopts the scientific materialist conception of reality according to which everything that exists is made of matter (physical), and can be explained by scientific laws. This ontology is coherent with scientific realism, according to which we can know reality. Moreover, Bunge claims that, unlike other philosophies, scientific materialism provides a plausible explanation for the findings that suggest that mental (cognitive) brain processes are emergent phenomena produced by the brain's self-organizing processes (explained in Section 2.3).

On the contrary, Bobadilla argues that it is precisely the adoption of the paradigm of the natural sciences that has caused psychology's fragmentation. This naturalistic understanding of psychology rejects philosophical work and the idea of the human mind as socially and culturally shaped. Instead, some contemporary schools in psychology, such as behaviorist psychology, psychoanalytic and abnormal psychology, and physiological psychology, among others, adopt a scientific conception of mind and reality. This philosophical attitude entails that the way of knowing that characterizes the natural sciences is the only one that deserves to be called *episteme*—genuine knowledge. Therefore, psychology must work with the same scientific paradigm to produce legitimate knowledge.

Bobadilla claims that psychology, by following this conception, has lost its conceptual basis and incipient epistemic framework during the 20<sup>th</sup> century. Psychologists have abandoned the capital of philosophical knowledge built during centuries by our reflections upon the human mind, its features, and its creations. Bobadilla says that some scientific psychologists despise “folk psychology” because it is not scientific. They tried to turn psychology into a natural science (psychological behaviourism, psychophysics, neuroscience). Other scholars, in order to protect the traditional socio-cultural understanding of the psyche, opted to give psychology the role of an applied discipline (educational, industrial, forensic, and therapeutic psychology). In both cases, maintains Bobadilla, psychology lost its philosophical and conceptual capital, in order to become useful, whether as a natural science or applied practice.

Bobadilla believes that the advent of the cognitive sciences provided the epistemic framework that psychology needs. He thinks that a cognitive approach recovers the original concern of psychology with the subject’s mental states and their contents. In his view, the true subject of psychological enquiry is cognition. Thus, cognitive psychology attempts to provide explanations of the subject’s cognitive processes and contents as products of the socio-cultural reality in which the person is immersed.

Cognition is understood by Bobadilla as something immaterial (like a computer program) made possible by something material (brain). The material substrate, in this view, is useless to the psychologist for understanding the (immaterial) cognitive “programs” that determine human behaviour just as the hardware of a digital computer alone does not explain the processes of a computer. The psychologist tries to understand the contents of those programs in order to answer the question: Why do

we think in the way we do? For this, he says, we need to look not at our biological makeup but at the complex interrelations among humans, and what we learn from them, and assimilate as part of our cognitive system by which we understand reality and act on it (Bobadilla 2005).

Most scholars agree that it is unlikely that mental representations have a physical correlate; that is, one specific physical organization for each specific representation, such as a memory (...) To study the mind without reference to its neuronal correlations does not make me a metaphysicist, just as studying the Internet without reference to the ‘packet-switched network’ does not make me an spiritist (Bobadilla 2013)<sup>1</sup>

Bunge criticizes cognitive psychology as an inadequate psychological approach due to its detachment from biology. Yet, Bunge’s criticisms are directed towards the classical cognitive view in which the analogy between the computer’s information processing was used as a strong model of human information-processing, which has been widely criticized and replaced by the “embodied cognition” models, according to which “Cognition is embodied when it is deeply dependent upon features of the physical body of an agent, that is, when aspects of the agent’s body beyond the brain play a significant causal or physically constitutive role in cognitive processing.” (Wilson & Foglia 2011)

The embodied cognition model has been adopted in research programs such as cognitive neuropsychology, developmental neuropsychology, and social cognition. All of these research areas developed during the 90’s (Gomila & Calvo 2008), and even though some scholars have challenged this model, it has shown to be a fruitful and promising research area. In any case, Bunge believes that psychology’s theories should

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<sup>1</sup>My translation from personal communication.

be judged according to their consistency with biology in general, and neuroscience in particular, because these are the areas in psychology that have accomplished the most reliable and scientific knowledge.

To summarize, even though Bunge and Bobadilla present very different conceptions of the nature of psychology's subject matter, the approaches favored by Bunge and Bobadilla can be identified with neuropsychology and cognitive psychology, respectively. These two approaches have become increasingly integrated into one approach: cognitive neuroscience. Cognitive neuroscience investigates the relation between the brain's structure and function and specific psychological processes: cognitive, affective, and psychosocial. This research program employs, among other methods, mathematical modelling, brain imaging techniques, and methods from neuropsychology.

According to this portrait, cognitive neuroscience seems to meet Bunge's epistemic/ scientific demands (see table A.1 in the Appendix). However, in Bobadilla's view, psychology's epistemology must entail a philosophical account of the *mind*, what psychology studies. Bobadilla says that psychology is mainly concerned with the qualitative leap between humans and the rest of the animal species, according to which humans are capable of deliberative, rational, selective response to the environment, and do not merely act by instinct. Humans, he says, are guided by their *individual and culturally endowed* cognitive programs.

Bobadilla's socio-cultural or "humanist" understanding of psychological phenomena can be found in what Bunge refers to as *mentalist psychology*. The "mentalist" or "humanist" view can be understood as conceiving the psyche and everything "mental" as multi-faceted, socially-shaped, intentional, subjective, experiential, and with

causal power over the physical. Although Bobadilla does not identify himself with any philosophical position regarding the nature of mind, he is very likely a *psychophysical dualist* (see page 27) with regard to his conception of mind and reality, for he insists in that the mind has its own laws, different from those of the physical world (see, for instance, page 60). Bunge, on the other hand, claims that science in general and scientific psychology (i.e., neuropsychology) in particular, assume explicitly or implicitly a materialist conception of mind and reality or *psychophysical monism*. The central thesis in the materialist philosophy of mind, according to Bunge, is the *identity theory* (or, more properly, the *identity hypothesis*), according to which all mental events are brain events.

These philosophical positions represent the fundamental disagreement between Bunge and Bobadilla. Bobadilla understands mental phenomena as part of an undeniable “subjective reality” that is different from the “objective reality” postulated in the natural sciences. Bobadilla argues that the study of psychology yields legitimate knowledge because it refers to real phenomena, and science must systematically study all of reality, not just “objective reality”. Therefore for psychology to be recognized as a proper science or *episteme*, the scientific paradigm must be revised, acknowledging mind-dependent phenomena as part of the reality that we wish to know.

Bunge, on the other hand, understands mental phenomena as referring to specific brain functions, and reality as being entirely material and scientifically knowable, regardless of how human subjects experience it. Therefore, for psychology to be a science, it has to fit the paradigm of the existing sciences, which assume that reality is entirely objective, and it must study the material “substrate” of cognition, which determines human experience and behaviour.

To better understand each of the scholars' philosophical views, and to be able to point out their strengths and shortcomings, it will help to consider Searle's philosophical analysis of the contemporary theories of mind.

## **4.2 Bunge and Bobadilla's philosophies of mind**

Searle (2004) provides an analysis of modern philosophy of mind. He addresses the elements of the philosophical discussion regarding the nature of mind that make it difficult to correctly approach the study of mental phenomena, and he provides a diagnosis of what is wrong with the available theories regarding the nature of mind. I will leave aside Searle's particular objections against each theory of mind, and I will focus on Searle's meta-theoretical analysis so as to better understand Bobadilla and Bunge's positions on the nature of mind and psychology's study. According to Searle, the fundamental mistaken assumption in the dualist and materialist accounts of the mind-body problem is to presuppose that "mind" and "body", in their ordinary sense, name mutually exclusive ontological categories. Consequently, what is considered to be mental cannot be physical, and vice versa.

Dualists, such as Bobadilla, believe in the reality and irreducibility of consciousness. Materialists, such as Bunge, argue that this thesis must be rejected, because of our accepted scientific naturalist conception of the universe. Searle tries to show that both dualism and materialism are mistaken. According to him, both sides have been committing the mistake of assuming (not necessarily explicitly) that if something is mental it has certain non-physical features: it is subjective, it has first-person ontology, it is qualitative, it is intentional, it has no spatial extension and location, it is

epiphenomenal, and it cannot be explained by physical processes. Whereas, if something is physical, it is objective, it has third-person ontology, it is not intentional, it has a specifiable (measurable) extension and location, it is causal, and it can be explained by physical processes.

Searle points out that according to our existing knowledge about conscious mental states, such states are spatially located in the brain; they are caused by brain processes, and can have a causal role as well, like any other higher-level feature of a physical system. The fundamental nature of mental processes consists in the fact that they are conscious, subjective, qualitative, first-personal, and intentional; yet, what we know about the brain structure does not include any of these features except for the first: we know that the brain produces our conscious states, but we do not know *how* it produces mental states. However, we seem to have reasons to believe that both—mental states and brain states—cause our cognition and behaviour. Namely, the action of raising my leg involves *my intention* to raise it, which is a mentalist causal explanation, for it explains the effect (the leg moving) as caused by a mental state (the conscious decision to move the leg), which can be stated simply by saying that my (conscious) decision to move my leg actually caused my leg to go up. We call this explanation “mental”, an explanation of mental causation. On the other hand, I also know that I move my leg because there is something going on in the brain: neurons firing in the motor cortex, neurotransmitters being secreted at some axons’ end terminals, ion channels’ stimulation, and so on, which also explains why my leg goes up. We call this explanation “neurological”. So, according to Searle, we have two explanations for the same event: moving the leg.

The dual explanation of behaviour presented above poses, according to Searle

(2004, p. 206), the following problem: there is an explanation of an action that refers to mental states as its cause, and at the same time there is an explanation of the bodily event in terms of chemistry and physiology of the body. This is an example of the problem of over-determination. There is also another problem: If there really are mental states that cause behaviour, how can a mental state that is immaterial (i.e. “decision-making”) cause something that is material (body movements)?

Searle’s answer to these problems is as follows: there is a level of description of brain processes in which they are “pure” biological processes, and there is another level of description of brain processes in which they produce conscious states, and once these conscious states are produced, they operate in a way that cannot be totally explained by the neurobiological phenomena involved. Materialists and dualists understand this rather simple explanation as implying that mental phenomena are some kind of “unnatural” entities or properties that exist “over and above” the brain in which they are somehow physically realized. But this is a mistake, because the conscious mental states are not a separate thing from the brain in which they take place; mental states are states *of* the brain (Searle 2004).

A committed materialist might still object that Searle’s explanation is not consistent with our scientific worldview. That is, the explanation of observable, physical behaviour in “mentalist” terms, such as “intention” cannot be treated scientifically, since science works with entities that are empirically measurable. I assume that Searle would say that, although this objection does pose a real problem—namely to devise reliable means to test psychological theories—this does not rule out the possibility. Even though he does not provide specific epistemological criteria to answer this question, he does present a theory of mind according to which a scientific psychology is

possible in principle. He refers to this theory as *biological naturalism*.

According to this theory, Searle would defend a mentalist psychology, a science of mental phenomena, which is also materialist because the phenomena that correspond to the level of description of psychological phenomena can also be explained from a neurological perspective: neurons firing in the motor cortex, acetylcholine being released at the axon end, the stimulation of motor neurons, etc. These two perspectives then do not exclude one another; rather, they employ different but complementary levels of description: descriptions at the mental level refer to the subject's point of view from his experience, while descriptions at the physical level refer to the objective world. In this picture, then, "intentionality" is a higher-level feature of the brain system, just as solidity is a higher-level feature of the micro-elements that constitute a table. And so there is no apparent inconsistency between the two levels of description, because they both belong to the same and unique causal system.

Searle acknowledges that this analogy is not completely accurate because it raises another central issue in the philosophy of mind: the problem of the irreducibility of the mental. The problem with the analogy is that, whereas solidity can be ontologically reduced to molecular processes, "intentionality" cannot be reduced to neuronal processes. A complete causal explanation of solidity can be given in terms of molecular behaviour which allows us to say that solidity is nothing but some type of microphysical event. An ontological reduction follows the causal reduction of a certain feature of the object. In this case, the surface features—how solid objects feel, that they resist pressure, etc.—are not considered as essential to solidity. So solidity can also be described in terms of the micro causes of the surface features.

However, what happens if we try to explain mental processes in the same way in

which we explain physical processes such as solidity? For instance, we could explain what causes pain in terms of what is going on at the neuronal level; yet we would still require some conceptual apparatus to refer to the first person, subjective, qualitative features of what we call “pain”, just as we still need some terms to refer to the surface features of solidity. Nonetheless, in the case of mental phenomena such as pain, the causal reduction does not properly allow us to perform an ontological reduction. Indeed, to examine conscious mental states is to examine states that are subjective or observer-dependent, and because of this we could not ontologically reduce consciousness to its observer-independent causal basis—the brain—for our knowledge of brain processes and mechanisms cannot fully explain these phenomena. To explain these phenomena, we need the subject’s point of view.

Searle wants us to see that, to understand these facts, we need to get rid of the inadequate categories and vocabulary that have been inherited from the Cartesian tradition. For instance, something may look and feel solid to me due to its and my physical makeup. However, the looking and the feeling themselves, due to their subjective ontology cannot, we are told, be part of the objective physical world of objects and brain processes. What forces this view upon us is the traditional philosophical vocabulary that understands the categories of mental and physical as mutually exclusive. We need to see past these categories to understand that conscious mental phenomena are emergent, albeit subjective, brain states.

According to Searle’s account, then, we can explain why Bunge and Bobadilla’s philosophical views both seem too extreme in their commitments to “objective/natural reality” (materialism) and “cultural/human reality” (dualism) respectively. These two positions suffer from the problems that Searle identifies in the theories of mind,

and therefore they cannot reconcile the different perspectives that can be adopted to study the same complex phenomenon: the psyche. This can explain, on the one hand, the rejection of neuropsychology and biology by Bobadilla: he argues that these are irrelevant for the work of the psychologist, who attempts to explain what happens at the “intentional and observable level” in Searle’s terms (see page 51). On the other hand, Bunge seems to ignore the relevance of trying to understand the mental concepts from the perspective of the subject who experiences them, and he excessively stresses the role of explanations in psychoneural terms.

Bunge emphasizes a naturalist understanding of psychological phenomena and Bobadilla emphasizes a cultural one. This is manifest also in their different understanding of emergence when explaining the causal relations between mental processes and the brain. While Bunge understands emergence as a physical property of the brain, Bobadilla understands the term as referring to complex interactions among persons and cultural evolution. Bunge, however, admits that the mental cannot be physically or even biologically reduced to its parts because many mental phenomena are “socially-dependent”. Because of this, he considers psychology an interdisciplinary science, which has its own perspective but it largely depends on the scientific concepts and methods of the other scientific domains, especially the most mature natural sciences.

Bunge believes that psychology should adopt the epistemology of the natural sciences. Bobadilla argues that psychology needs to develop its own epistemology to guide its activity, according to its specific requirements. Bobadilla stresses the importance of developing an epistemic framework that, contrary to that of the natural

sciences, includes features of the world that are observer-dependent or that have “first-person ontology”, that is, they only exist as experienced by a human agent.

Bobadilla agrees with Searle in that it is not possible to properly understand the difference between natural and social sciences without the distinction between observer-dependent and observer-independent phenomena. On the other hand, Bunge considers that the social sciences must function according to the principles of the natural sciences (see table A.1), to evolve towards more elaborate and accurate models of different aspects of reality, where reality is understood as observer-independent. According to this, it seems that in Bunge’s view, our ordinary knowledge of the world, which we trust for it seems to suffice for most of our ordinary undertakings, is at odds with scientific knowledge. However, we can ask Bunge: where does the idea that what we perceive is really outside of us come from, if not from our ordinary knowledge or experience? What about the idea that things (that we perceive with our senses) are material? Where does that idea come from? What about the idea that collecting observations about the same event and analyzing them can provide us with some new knowledge or confirm what we previously thought? If these ideas do not come from the accumulation of ordinary experiences where else do they come from?

Bunge prescribes a scientific psychology where the principles of scientific research are in accordance to an observer-independent reality. However, Bobadilla suggests that all sciences seem to be advancing towards a new “scientific framework” in which a mind-dependent conception of our knowledge is assumed, and that this understanding of our knowledge as always mediated and produced by our subjective experience entails a more accurate understanding of science than the one proposed by Bunge.

Bobadilla also acknowledges the much wider domain of philosophy and human knowledge as a legitimate source of knowledge. He sees the need to better understand human knowledge, in particular the scientific kind, using the tools of philosophy, whereas Bunge believes that it is philosophy and common knowledge that are in need of improvement by scientific laws and knowledge.

Bunge's scientism can be criticized for its reductionism; namely, for implying that all individual and social processes are reducible to certain kind of explanations that ignore the role of the person's intentions, and the different and meaningful roles and values of the relations between persons, of their institutions and practices, of societies and cultures. Bobadilla, on the other hand, presents a reductionist account as well, in implying that all individual and social processes can be studied and understood with a mentalist approach, by investigating mental phenomena with no connections with the natural sciences or the person's body and brain. Clearly, the two scholars suffer from Searle's conceptual dualism. They both got something right about psychology's subject matter but only a part of it. However, unless we can identify the whole object of study of psychology, we cannot propose a unifying philosophical ground. So, Bunge and Bobadilla fail in this regard.

## Chapter 5

# A unifying metaphysics for psychology

### 5.1 Fragmentation of mind and psychology

I have examined Bunge's and Bobadilla's positions, presenting each scholar's philosophy of psychology in chapters 2 and 3, respectively. Then, I compared Bunge and Bobadilla's views in chapter 4, pointing out some of their strengths and deficiencies. Now, I will present my own views, including a theory of psychology based on the metaphysics of persons and their knowledge, science included.

As we have seen in the previous chapters, Bunge and Bobadilla claim and lament that there is a deep theoretical and methodological fragmentation of psychology as an academic discipline. According to these scholars, psychology's fragmentation is due to the lack of an explicit and all-encompassing philosophy of psychology. I agree with this assessment and with their suggestion that psychology is in need of a deep philosophical revision.

The two scholars each present an epistemology or theory of psychology as a scientific discipline. They identify a set of philosophical principles with respect to the

nature of mind and some epistemic criteria vis-à-vis the nature of science and psychology's enquiry. These principles, they argue, should function as criteria to evaluate the existing theories, especially with regard to the question of whether they can be considered scientific.

I will argue that the two conceptions of psychology proposed by Bunge and Bobadilla, while very different, are both *partial*. This means that they identify one part of psychology as the whole. Each scholar identifies a single feature of psychology as the sole object of its enquiries, while leaving out others. For this reason, neither Bobadilla's nor Bunge's epistemological guidelines can serve to unify psychological theories. I will develop this argument in this section, before introducing my own views in the next.

Bunge develops a philosophy of scientific psychology based on scientific materialism. According to scientific materialism, psychology should be concerned with "naturalist" explanations of the human psyche, according to which human thought and behaviour are explained by their physical and/or biological constitution (page 25). Bunge claims that scientific materialism (SM) should be the unifying philosophical ground of psychology aimed at overcoming the current state of fragmentation.

Contrary to Bunge's idea, I argue that SM is overly reductive and partial, rather than an all-encompassing view because Bunge idealizes what science is, ignoring subjectivity and the value and roles of human knowledge beyond science. These aspects are not only central to properly understand and explain human cognition and behaviour but also to characterize human knowledge—including science.

There is no textbook-like, crystalline purity to scientific investigations. Rather, its methods and procedures are shot through with

knowledge and abilities that are beneath the notice of science (Szabados & Campbell 2013, page151).

We have to conclude, then, that Bunge's conception of science is simplistic. He thinks that science is something that it is not. The adoption of SM disallows (while presupposing) all valuable psychological knowledge originating from persons' experiences and from other scholars' theories because they are not advanced in accordance to a reductive conception of the nature of science and of scientific methodology. If we were to adopt Bunge's position, we would be forced to disregard several characteristics of persons' lives that we want to understand: those that pertain to the person's experiences, or to the first-person point of view.

Bobadilla proposes a more inclusive philosophy of scientific psychology in which scientific activity is concerned with both the objective and subjective aspects of human experience. In order to overcome fragmentation, Bobadilla proposes a "cognitive psychology" as the foundation for theorizing and for searching for appropriate methods to study the psyche (page 56). In this view, the psyche is understood as a cognitive structure that manipulates symbolic information and incorporates cultural concepts and values. Understanding these symbolic contents is essential to both psychology's theory and practice. In Bobadilla's view, meaning becomes the central notion in psychology. For this reason, psychology needs to look for its theoretical foundation in association with the *cognitive disciplines*: linguistics, anthropology, philosophy, artificial intelligence, and neuroscience. These are all relevant to psychology as long as they have something to say about how human beings represent, process, and transform information.

Bobadilla, however, also presents a partial understanding of psychology. He

views the person's subjective experience from a purely cognitive perspective, with no connection with the person's body or the rest of the material world (section 3.4). Bobadilla gives no relevance to the physical aspects of the person's life for the understanding of the human psyche, as though psychology could be a "stand alone" or "Cartesian" subject. Therefore, whereas Bunge fails to account for the subjective or mind-dependent features of the psyche, Bobadilla fails to account for the objective connections between psychological phenomena and the rest of the natural world and mind-independent phenomena (section 4.2). These scholars' views cannot help us to reconcile psychological theories. They force us to choose among available theories in psychology and to disregard others. It is thus clear that psychology's unity cannot come from adopting either Bunge's or Bobadilla's epistemological guidelines.

Bunge's and Bobadilla's diagnoses of a fragmented psychology seem correct. Psychology is fragmented by defective theories, incompatible theories, and competing theories. However, these scholars think that the way to avoid the inconsistencies and contradictions of psychology's fragments is by adopting one or some of these fragments only. Bunge wants to keep those theories and research programmes that proceed according to (his understanding) of scientific materialism. Bobadilla wants to separate psychology from any naturalist understanding of human beings in order to construct a discipline that focuses on the *psyche*, understood as a feature unique to human beings and unlike other natural phenomena. Clearly, these scholars' epistemological programs are not actually intended to integrate available theories but to provide some criteria to decide which are worth keeping around. In other words, if we follow either Bunge's or Bobadilla's advice, we will get rid of inconsistencies and disputes among theories but at the price of unduly limiting psychology by removing

parts of it. Both scholars do what they criticize others for doing: they impose their own epistemic criteria, and reject any theories and knowledge that do not fit those criteria.

Looking at Bunge's or Bobadilla's failure, we have to ask: Is there a solution to psychology's fragmentation? Do we have to accept that psychology must proceed fragmented as it is? Or is it possible to propose more inclusive, unifying criteria? I propose that we need criteria, indeed, to evaluate theories; but these criteria should be deeper than the ones proposed by these scholars, and they should not be reduced to some epistemic guidelines. It has to be coherent with a metaphysics of persons, of action, and knowledge.

## **5.2 How to resolve psychology's fragmentation**

I think that Bunge's and Bobadilla's theories both have something true to say about persons' lives. However, from Bunge and Bobadilla's respective positions, the different theories in psychology appear to be irrevocably separated because there is no common ground upon which to unite them. There are only co-existing "psychologies" with different perspectives and methodologies. There are, moreover, two overarching conceptions, represented by these two scholars' views, according to which psychology should be exclusively concerned with biological or cultural aspects of persons' lives. I propose that the unification of psychological theories requires a metaphysics, an agreement over basic facts about *persons and the world they inhabit*. Identifying this common ground is the solution for unifying psychological knowledge. And the common ground is this: all the different psychological theories ultimately refer to

some aspects of a single underlying unity: the lives of persons<sup>1</sup>. This is psychology's philosophical touchstone.

Therefore, I propose that we start with what we know about persons and their lives; with what persons do. Persons act and think. Next, we ask the question: What is the right methodology to study acting, thinking persons? How do we study conscious, rational, affective agents? The answer to this is: by using all approaches that work, including science, introspection, "folk-psychology", common sense, logic, and "know-how".

We reflect upon our knowledge of the world and ourselves, accepting as real what we apprehend via our senses and our intellect. Accepting the reality of these things involves accepting that we acquire objective information from the world. Meaning develops from this causal and informational relation in which we stand to the world. Since meaning is, at least initially and partially, the result of our objective relation with the world, it can help us to orient our actions and search for further knowledge (Yepes Stork & Aranguren Echeverría 1999). In other words, we create our culture implementing our disposition to give meanings (to name and to conceptualize) and we reason and act according to these meanings, which could not be of use for acting in the world if they were not at least partially informed by our -objective- relation with it. In fact, there was a time when this basic picture of the world and ourselves in it—that we exist in this world and that we properly reason about it—was not under question, but was instead the foundation of philosophy and science.

The unquestionable character of this picture of our relation with the world in which we live and act becomes evident in that no psychological theory or research project that attempts to understand the human psyche, brain or cognitive processes

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<sup>1</sup>Similar ideas can be found in (Martin 2010)

can operate without assuming these facts. While making no commitment to this metaphysics explicitly, all of psychology's schools accept it in practice, and they cannot deny it (see page 87). If we persons do not act based on objective information, we could not form beliefs that can successfully assist us in our acting in the world. Without the ability to manipulate information about the world, we could not develop and revise our beliefs, nor correct our mistakes, nor form theories based on studies of animals or persons. How could we improve our knowledge, to act as we intend to act, or to cause the changes we desire in the world with our actions unless we are fully integrated with the world? Therefore, whether psychology is pursued under a naturalist perspective such as Bunge's, a humanist perspective such as Bobadilla's, or any other perspective, these are all pertinent to psychology's historical pursuit; as long as they are understood as partial views of the whole picture of persons-living-in-the-world.

Contemporary schools of psychology emerged at a time when this basic picture of the world was outmoded. On the one hand, we find attempts at doing scientific, naturalist psychology in which brains, minds, cognition, and behaviour are just discrete objects to be studied. On the other hand, humanistic psychology embraces the perspective of Dilthey's *Geisteswissenschaft* or similar views (page 12) opposed to a naturalist psychology. Mind-independent and mind-dependent phenomena, which are integrated in our experience, in our relation with the world, have been dissected to be studied. The metaphysics of psychology, of persons acting in the world, is no longer psychology's touchstone. Bunge and Bobadilla react against this tendency towards disjointed research and practices in psychology. However, these scholars present narrow views of psychological phenomena themselves. They choose parts of the whole

picture of persons' lives (e.g., nervous system, cognition-as-a-stand-alone computational system) and develop an epistemology in which these restrictive assumptions work as the basis. Nevertheless, the foundation of psychology's epistemic guidelines needs to acknowledge the whole picture of a person's life, acknowledging its complexity, without limiting its study to only some aspects.

According to this picture, there is no *a priori* opposition between scientifically oriented and mentalistic psychological theories, methods, and approaches. They are all united by a single goal: understanding persons' lives. Once this metaphysics of persons' lives becomes explicit, we can better understand the variety of methods and approaches that we find in psychology, which corresponds to the complexity of its object of study rightfully conceived, from a holistic perspective, including all the aspects of persons' lives and not just some parts of this complex structure, such as brains, observable behaviour, introspection, or rationality.

### **5.3 Philosophy of psychology: what for?**

The philosophical analysis of the different domains of knowledge is indeed crucial in the evolution of human thought and the sciences. However, this is so if this philosophy is understood in its broader sense, as a philosophy of knowledge *tout court*, and not just as a philosophy of scientific knowledge. It has been proposed that this division in the understanding of philosophy corresponds to the difference between European or Continental philosophy, especially phenomenology, and Anglo-American philosophy, especially analytic philosophy (Beorlegui 1987, Tarnas 1991).

In my view, Anglo-American philosophy of mind and psychology reflect most vividly the division among scholars dealing with the problems of mind. The division,

also manifest in Bunge and Bobadilla, is the result of failing to reconcile what Searle refers to as “the basic facts.” These basic facts include, on the one hand, the existence of “mindless, meaningless, unfree, nonrational, brute physical particles”, which are the objects of concern of the natural sciences; and, on the other, our everyday conception of ourselves as “conscious, intentional, rational, social, institutional, speech-act performing, ethical and free-will possessing agents” (Searle 2001, p.5), which are the object of concern of the human sciences and philosophy.

One of philosophy’s tasks is to do justice to both the ontologically objective and the ontologically subjective. Being able to reconcile the former with the latter without illegitimately trying to reduce or eliminate any of the basic facts is the job of the philosopher, who watches over the investigation so that the fruits of this labor are, as Plato says, *episteme* or knowledge, as opposed to *doxa*, mere opinion that traps us in the web of appearances. In order to avoid the latter, psychology needs a common ground: the metaphysics of persons’ lives.

While psychology can certainly proceed without metaphysics, it cannot answer the question “Is this psychology?” without it. Once we try to justify our psychological statements as such, we are both admitting and using some features of persons’ nature that we cannot deny without incoherence. This is the unifying, common ground that we cannot deny: we know that we are conscious, intentional, affective, rational, social, ethical, and free-will possessing agents. We can operate as we do, being the kind of agents that we are, in virtue of our ability to operate using information about the world, based on our experiences and information previously processed and stored.

Historically, persons have inherited knowledge from previous generations, and added to it; and they have tried to better understand this knowledge. Philosophy

developed from this corpus of knowledge in the effort of questioning and reasoning about this knowledge, in search of greater understanding. What are the basic terms and relations of thought, and how is/should “higher thought” be related to its bases? Metaphysics is considered the first philosophy because it deals with the deepest questions that our reason asks: What is thought? What are objects? What is causation? What is perception? And so on. It is called first philosophy not because there are other philosophies but because metaphysics constitutes the philosophical outlook over our entire corpus of knowledge.

This basic corpus of knowledge has been organized around thoughts and terms without which we cannot conceive persons thinking and acting. These become metaphysical tools, allowing us to review actions and thoughts and to correct them. They are presupposed in our language, and by applying them (i.e., self-consciousness and rationality) to our theories and discussions we can analyze, explain, and justify. Psychology needs philosophy in order to stay honest to its roots. Psychology studies what and who we are, and it cannot do so without acknowledging the features of persons and the knowledge they entail. The point is that only by making explicit a metaphysics of persons, knowledge, the world, and their connections, can we actually develop a sound criterion for judging our psychological theories. The criterion of adequacy for any psychological theory is/should be that it is consistent with this metaphysics.

This criterion of adequacy requires examining the most basic characteristics of persons, and these can be identified only by examining our thoughts and actions. This might sound like a circular argument; but it is not, if we begin by recognizing that we already have some basic knowledge —common sense, “folk-psychology”, and

conceptual and rational tools to begin with—, which we do not need to question but to explain. This is the point of departure; and the most basic foundation for our further psychological enquiries: psychology's metaphysics.

The criterion of adequacy will work like this:  $x$ —where  $x$  is a concept, statement, a theory, a model, or a principle—must be consistent with the metaphysics of persons-in-the-world, where persons are informationally and causally connected to the world in such ways that they can successfully act and know the difference between success and failure, action and befalling, and so on. If  $x$  is not consistent with this picture, then  $x$  fails the adequacy test and it is not a part of psychology. Conversely, if  $x$  is consistent with this basic characterization of what we know about ourselves,  $x$  can remain as a legitimate part of psychological research.

This criterion allows us to review all available theories, and to keep and further develop what can be of use for knowing more about ourselves, our relations and ways of thinking and acting. This criterion can be applied to anything from an isolated concept to an entire research project or area of study. It is not as narrow as Bunge's or Bobadilla's, or too broad as a criterion that would admit all the theories as they currently stand without revision. Most importantly, it is a criterion that we cannot question without doubting our entire knowledge and worldview, and therefore without being inconsistent. A theory is inconsistent if it denies or questions what we know about persons: that persons are conscious, that they act, perceive, have goals, affect, and rationality.

This picture, however, seems incomplete. Once we start talking about persons and their lives, we realize that one more essential feature of persons is their capacity to think about themselves and to consider themselves as individuals and different from

other persons. This is a complex phenomenon, which moves us from the question of what we are to that of who we are: from our personal nature to our personal identity. According to this, psychology's historical endeavor must be understood as an attempt to answer two fundamental questions: *what* are we and *who* are we? Without reference to the ways in which we conceive and understand ourselves, others, and our actions, we cannot provide a complete picture of persons' lives; we cannot understand why persons like and dislike different things, why we create poetry, science, and why we have developed different societies, institutions, and so on.

In sum, what I propose for current psychology is a unifying principle: to incorporate this basic conception of how persons are fully integrated in the world, and how their specific characteristics as persons, many of which resist explanation by means of scientific reductionism, are essential to persons' nature, the ability to act in the world. The metaphysics proposed here is the ground of unification that Bunge and Bobadilla fail to provide. They do not present a basic understanding of how persons exist and act in the world. They do not recognize all the basic aspects of a unified theory of persons understood as fully integrated with the world, as conscious, rational, affective, and intentional agents. Only by looking at this basic picture can we fully understand the whole, historical endeavour of psychology, which is to understand persons in the world.

#### **5.4 A pluralistic view for psychology based on the metaphysics of persons' lives**

According to the basic picture of persons and their knowledge presented above, we do not want to disregard any knowledge that pertains to persons and their lives.

Biology, anthropology, politics, and education can each teach us something about human psychology, about what and who we are. In the same way, we assume that all schools in psychology can teach us something; yet, none of them can rightfully claim to provide a complete understanding of human psychology. For this reason, the “fragmentation” of psychology is not necessarily a vice in this view, as long as each fragment of the whole domain is connected or “connectable” to the basic metaphysics of persons.

The advantage to psychological investigation of adopting this metaphysics of persons is that we do not need to disregard the body of psychological knowledge already built. We can revise our available theories looking for ways in which they connect with the metaphysics of persons’ lives. This task entails looking for ways of connecting the fragments of knowledge from the different schools with what we know about ourselves, which is the fruit of our experiences, of common sense built on human history’s experiences, and “folk psychology”, understood as our insightful knowledge of ourselves and others. These ways of knowing are relevant to psychology because they are presupposed in our everyday life; we use them to understand each other and to act in the world.

Therefore, we can study psychology adopting different perspectives, wherever we find persons thinking and acting and otherwise living. So, whereas fragmentation of theories without common ground takes away psychology’s credibility, reduces its efficacy in a number of ways, and is altogether untenable on rational grounds, pluralism and specialization with a common philosophical ground guaranties the unity of purpose and of knowledge. This approach encourages interdisciplinary work, cooperation, and critical revision, ensuring some conceptual background to work with,

and rational boundaries as guidelines to avoid biases, and to achieve reliability and intellectual fruitfulness.

This is my proposal for unifying psychology, which itself should be understood as part of a coherent conception of human knowledge in which mind-dependent and mind-independent phenomena cannot be reconciled without reference to what links them both: persons and their actual, experiential knowledge of the world. An epistemology of psychology needs to be grounded in this metaphysics in order to provide a clear conceptualization of what the mind of a person is and how it can best be studied.

## **5.5 The relevance of personhood for a philosophical psychology**

The concept of a person, if taken for deep analysis, brings us to consider the concept of reality, nature, or the world; and the relation between persons and the world (Coval & Campbell 2010, page 12). Now, when considering this relation, we find that we need to make some assumptions, without which we cannot go any further in our analysis. We need to admit some basic knowledge regarding (1) the world, (2) ourselves, (3) our knowledge of them both. To begin with, we cannot deny the existence of any of these elements without presupposing them.

Questioning what we know to be true about these basic notions will guide us towards some knowledge of the nature of persons that our activities presuppose. This metaphysics will help us to unify the different perspectives in psychology (and the other human sciences) as part of the same endeavour. This common endeavour is to better understand ourselves and our relations with the world and others. This basic

view will make explicit what we already *know* about ourselves and our relations with others, and what we need to admit in order to be able to do any kind of rigorous and meaningful inquiry.

This metaphysics of persons' lives is the basis of all rational and scientific endeavor that aims at understanding and explaining human cognition and behaviour, human thought and action; what makes the life of a person possible. This includes relations between persons and the world, relations with others, persons' actions and thoughts, values, motivations, and purposes. Therefore, I propose that psychology's object of study is not just thought, not just computation, behaviour and/or action, but the person, understood as *unitas multiplex*<sup>2</sup>.

In this view, the person is not merely an idea or a concept or a biological or physical structure, or an object of scientific study. The person transcends all of these categories. It is a real being which becomes knowable through our own *personal* experience, which includes the objective and subjective "basic facts". Then, the task of a "scientific" psychology or any kind of psychological theory is not to disregard common sense, folk-psychology, and practical knowledge as improper matters for scientific research, but to take up the challenge to find ways of integrating them into its own theories<sup>3</sup>.

To study persons, according to this conception, we need to define a set of problems to be studied as a specific approach to understand more about the complexity of persons and their lives. But, for this specific approach or research program to actually work, it must presuppose all the aspects of the subject's experience, the physical

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<sup>2</sup>Originally developed by Stern (1917), *unitas multiplex* is a complex, structured, dynamic unity. For contemporary views on Stern's concept see (Lamiell 2010, Tisaw 2010)

<sup>3</sup> Searle (2007) and Chalmers (1999) make a similar point. Both philosophers propose to expand science to include the subjective.

composition (body and brain chemistry and structure), and the socio-cultural environment, even if they are not explicitly accounted for by the specific approach used as a research methodology.

In conclusion, what I propose is that for psychology to achieve its historical purpose of understanding and explaining human thought and action, a positivist, narrow, scientific conception, such as Bunge's view, will not do. Psychology cannot be an empirical science, as traditionally conceived. Psychology needs all the tools of thought that we have developed, including philosophy, our historical reflection of rational and common sense knowledge—what we know to be true by our own experience—and critical, systematic and rational enquiry.

Bobadilla, unlike Bunge, acknowledges the transcendence of human knowledge, and the need to change the mistaken tendency in psychological theories towards reducing human knowledge. This kind of “scientific” reduction can only be accomplished at a price that we should not be willing to pay, because it ignores the complex relations that need to be acknowledged to understand persons. I stand with Bobadilla and others in defense of a comprehensive psychology, but unlike Bobadilla, I defend a plurality of approaches legitimated by a common metaphysics, different from Bunge's and Bobadilla's. This plurality is justified by the unity of purpose, and by a common basic understanding of persons' lives. Finally, this unifying approach carries with it implications regarding our conceptions of human knowledge in general, and of scientific and academic disciplines in particular. I have tried to make it evident that there is no rupture between ordinary knowledge and scientific and academic knowledge, as Bunge suggests. All forms of human knowledge are shot through with the variety and richness of persons' experiences, common-sense knowledge, and countless human

abilities.

Science is enriching. But bedazzled by its success, we are blind to its limitations [...] The remedy for such impoverishing scientism is to recognize that the scientifically “disregarded” are no less real for being left out of scientific accounts. Moreover, there is more to knowledge than what is produced by applications of the scientific method. To think otherwise is to minimize or ignore tacit knowledge, the know-how learned at one’s parents’ knees, in coping with the everyday, in apprenticing, in ordinary skills, in knowing how to act, how to conduct oneself, how to be tactful, and so on. (Szabados & Campbell 2013, p.150).

So, we no longer have to choose between a comprehensive and a scientific psychology.

We have found a way to integrate both, via the metaphysics of persons in the world.

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# Appendix

From (Bunge & Ardila 1987):

**Table A.1:** A sample of philosophical principles involved, usually in a tacit manner, in scientific research, both basic and applied, as well as in its planning and evaluation.

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*Ontological (metaphysical) principles: On the World*

- O1 The world exists on its own (i.e., whether or not there are inquirers).
- O2 The world is composed exclusively of things (concrete objects).
- O3 Forms are properties of things (not self-existing ideas).
- O4 Things group into systems: everything is either a system or a component of one.
- O5 Every thing, except the universe, interacts with other things in some respects and is isolated from other things in other respects.
- O6 Every thing changes.
- O7 Nothing comes out of nothing and no thing reduces to nothingness.
- O8 Every thing abides by laws (there are coincidences, but not miracles).
- O9 There are several kinds of law: causal, stochastic, and mixed; same-level (e.g. biological), cross-level (e.g. biosocial), etc.
- O10 There are several levels of organization: physical, chemical, biological, social, and technological.
- O11 All systems, except the universe, receive external inputs and are selective.
- O12 In every system there is spontaneous (uncaused) activity of some kind.
- O13 Every system has some properties (called ‘emergent’) that its components lack.
- O14 Every emergent property appears at some stage in the assembly of a system.
- O15 Every system belongs to some evolutionary lineage.
- O16 Every system, except the universe, originates by assembly.
- O17 The components of social systems are biological, chemical, and physical: those of chemical systems are chemical or physical; and those of physical systems are physical.
- O18 Every system, except the universe, is a subsystem of some other system.
- O19 The more complex a system, the more numerous the states in the process of its assembly.

O20 The more complex a system, the more numerous its modes of breakdown.

*Descriptive epistemological principles: On human knowledge of the world*

- E1 We can get to know the world (reality), although only partially, imperfectly, and gradually.
- E2 Every cognitive act is a process in the nervous system of some animal.
- E3 Humans can only know objects of two kinds: material entities (concrete things) and conceptual objects (concepts, propositions, and theories).
- E4 An animal can know a thing only if the two can be linked by signals that the former can detect and decode.
- E5 No inquiry starts from complete ignorance. We must know something before we can formulate a problem and investigate it.
- E6 Every cognitive operation is potentially subject to error, but every error is corrigible.
- E7 There are several ways of knowing: by perceiving, conceiving, and acting: and these various modes combine in many an investigation.
- E8 All human inquiry is done in society, and therefore in cooperation and competition with others.
- E9 Knowledge can be of particulars or of patterns.
- E10 Every theory, when enriched with data and subsidiary hypotheses, can help describe and predict, but only mechanistic theories can explain.

*Normative epistemological principles: On the conduct of scientific inquiry*

- E11 Start your inquiry by choosing an open problem.
- E12 Formulate your problem clearly: unearth (or widen or restrict) its context, presuppositions, and data.
- E13 Do not mistake problems of being for problems of knowledge, or conversely (e.g. do not try to define causality in terms of predictability, and do not believe that facts alter when seen through alternative conceptual frameworks).
- E14 Do not let the available techniques dictate all your problems: if necessary try new techniques or even whole new approaches.
- E15 Plan the investigation into your problem—but be ready to change your plan, and even your problem, as often as necessary.
- E16 Whenever possible handle your problem scientifically (i.e., armed with scientific knowledge and scientific methods, and aiming at a scientific or technological goal).
- E17 Do not tolerate obscurity of fuzziness except at the beginning: try and exactify very key concept and proposition.
- E18 Do not commit yourself before checking: first get to know, then believe—and doubt.
- E19 Revise periodically your most cherished beliefs: you are bound to find fault with some of them—and with luck you may even start a conceptual revolution.
- E20 Check (for clarity, cogency, and effectiveness) all your methodological rules.

*Moral precepts: On the right scientific conduct*

- M1 Be truthful.

- M2 Do not skirt research problems for fear of the powers that be.
  - M3 Regard all data, theories, and methods as fallible, and regard only research as sacred.
  - M4 Correct everything corrigible, particularly your own errors.
  - M5 Do not disregard superstition and pseudoscience: expose and fight them.
  - M6 Do not hoard knowledge: share it.
  - M7 Give credit where credit is due.
  - M8 Disregard arguments from authority and *ad hominem*.
  - M9 Cherish intellectual freedom and be prepared to fight for it.
  - M10 Be modest: know your limitations, but do not be humble; do not bow before authority or tradition.
  - M11 Do not use prestige gained in advancing knowledge to underwrite unjust causes.
  - M12 Be of service to coworkers, students, and the scientific community at large.
  - M13 Shun ideology in basic science, but declare it in technology.
  - M14 Refuse to use knowledge for purposes of destruction or oppression.
  - M15 Do not boast of special (in particular paranormal) cognitive powers.
  - M16 Try to justify all your claims.
  - M17 Keep your independence of judgement and, if necessary, swim against the stream.
  - M18 Tolerate serious research on problems or with methods you dislike.
  - M19 Be intolerant with regard to organized obscurantism.
  - M20 Keep constant moral watch on your own actions and even on your own moral principles.
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