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علم النفس العلمي وعلم النفس الفلسفي: ترجمة وتعليق

*Scientific Psychology and Philosophical Psychology: Translation and Commentary**

د. سفيان كروم: باحث مغربي، جامعة ابن زهر، أغادير، المغرب.

Dr. Soufiane Kerroum: Moroccan Researcher, Ibn zohr university, Agadir, Morocco.

Email: Skerroum02@gmail.com

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الملخّص:

هدف هذا البحث إلى دراسة التطور المفاهيمي والمنهجي لعلم النفس العلمي عبر مقارنة ثلاثة مؤلفات محورية صادرة بين عامي 1909 و1929، وتحليل انعكاس هذا التطور على العلاقة بين علم النفس العلمي وعلم النفس الفلسفي. أظهرت النتائج انتقال التركيز من الجدل النظري حول موضوع العلم ومنهجه إلى تطوير تقنيات تجريبية متخصصة ترتبط عضويًا بالمشكلات البحثية وتوجّه مسار النتائج. كما تم تحليل ثلاثة مجالات تطبيقية توضح هذه العلاقة: (1) الإدراك والتعلم، حيث برز نجاح منهج الجشطالت في الظواهر الإدراكية ومنهج الاختبارات في دراسة الذكاء، مع كشف التداخل بين العناصر النفسية والفسيولوجية بما يتوافق مع نظرية الهيولى والصورة؛ (2) النمو والنضج، حيث تم توضيح مفهوم النضج كعملية داخلية منظمة للتطور، وارتباطه بالتصور الفلسفي للصورة المحركة؛ (3) الأخلاق والسلوك، حيث بينت الدراسات الميدانية وجود حتمية جزئية للسلوك تنسجم مع مفهوم الإرادة الحرة. ويخلص البحث إلى أن علم النفس العلمي لم يبلور بعد نظامًا موحدًا بسبب حداثته وتعقيد موضوعه، في حين يسهم علم النفس الفلسفي في إضفاء الاتساق الفكري على نتائجه التجريبية.

الكلمات المفتاحية: علم النفس العلمي، علم النفس الفلسفي، الجشطالت، المنهج التجريبي.

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Abstract:

This study aimed to examine the conceptual and methodological development of scientific psychology through a comparison of three pivotal works published between 1909 and 1929, and to analyze how this development reflects on the relationship between scientific psychology and philosophical psychology. The findings indicated a shift from theoretical debates on the subject matter and methods of psychology to the development of specialized experimental techniques that are organically linked to research problems and guide the trajectory of results. Three applied domains illustrating this relationship are analyzed: (1) perception and learning, where the Gestalt approach proved successful in perceptual phenomena and the testing method in the study of intelligence, revealing the interplay between psychological and physiological elements in line with the hylomorphic theory; (2) growth and maturation, where maturation is explained as an internal, organized process of development, associated with the philosophical notion of the animating form; and (3) morality and behavior, where field studies demonstrated partial determinism of behavior consistent with the concept of free will. The study concludes that scientific psychology has yet to establish a unified system due to its relative youth and the complexity of its subject matter, while philosophical psychology contributes to providing intellectual coherence to its experimental findings.

Keywords: Scientific Psychology, Philosophical Psychology, Gestalt, Experimental Method.

Introduction:

We would like to compare three scientific psychology treatises of varying recency and highlight certain differences which, we believe, are quite significant. These differences revolve around discussions concerning the object and method of psychology, topics that often occupy the preliminary chapter of such works.

Let us begin with the oldest of the three, E. B. Titchener's Manual of Psychology, published in 1909[1].

In an extensive chapter of approximately fifty pages, the author—arguably the most faithful disciple of Wundt and a key figure in sustaining Wundtian doctrine in the United States—addresses the object, method, and central problem of psychology. According to Titchener, the object of psychology is human experience insofar as it is dependent on the subject, whereas physics considers the same experience as independent of the observer. The method of psychology, for Titchener, is introspection. Its task is threefold: analysis, synthesis, and explanation.

This introductory chapter remains within the realm of general theoretical discourse and offers no concrete descriptions of specific methodological procedures.

[1] Titchener, E. B., (1909). A Text-Book of Psychology, New York, Macmillan. There exists a very useful French translation of this work: Titchener, E. B., (1922). Manuel de Psychologie (Trans. by H. Lesage), Paris, Alcan. Titchener remained faithful to the same theoretical positions until his death in 1927. In 1917, he had begun drafting a Systematic Psychology, of which only a few excerpts were published in article form. In 1929, the Prolegomena of this major work was published by one of his disciples, H. P. Weld—these were the only materials found among Titchener's papers after his death: Titchener, E. B., (1929). Systematic Psychology: Prolegomena, edited by H. P. Weld, New York, Macmillan.

The second treatise we wish to highlight dates from 1919: the well-known work of J. B. Watson[1].

Here again, an initial chapter addresses the problems and object of psychology, but it articulates a perspective that diverges radically from that of Titchener. For Watson, psychology is the science of behavior—that is, of the activity not of a specific organ or set of organs (which falls within the domain of physiology), but of the living organism as a whole. This psychology recognizes only stimuli and responses; it neither acknowledges nor accepts the existence of consciousness. Consequently, its method cannot be introspection but rather objective, external observation, akin to the methods employed in the natural sciences. Only under this condition, Watson argues, can psychology achieve true scientific status.

A second chapter, as extensive as the first, is devoted to the methods of this behavioral psychology. It provides detailed descriptions of a variety of procedures: observation with and without instrumental control, the method of conditioned reflexes, the method of verbal reactions, and the use of psychological tests.

In short, after discussing the method of psychology, Watson proceeds to describe several concrete and diverse experimental techniques.

In 1929, a comprehensive treatise on experimental psychology was published by a collective of 23 authors under the direction of C. Murchison.[2]

In this work, no preliminary chapter is devoted to the object, methods, or foundational problems of psychology. The various chapters address

[1] Watson, J. B., (1919). Psychology from the Standpoint of a Behaviorist, Philadelphia, Lippincott.

[2] Murchison, C. (Ed.), (1929). The Foundations of Experimental Psychology, Worcester-Massachusetts, Clark University Press. A second edition of this treatise appeared under the title: Murchison, C. (Ed.), (1934). A Handbook of General Experimental Psychology, Worcester, Massachusetts, Clark University Press.

specific domains such as sensation, emotion, learning, and so forth; they provide both detailed descriptions of experimental techniques and the results yielded by empirical research. Theoretical discussion is deemed unnecessary.

Another volume from the same series, the Manual of Child Psychology published in 1931[1], opens with a chapter on methods. The author, J. E. Anderson, asserts that any discussion of methodology ultimately reduces to a discussion of the specific techniques suitable for solving particular problems, as well as the criteria that a given scientific field gradually develops to evaluate the validity and reliability of its techniques.

These three works—published respectively in 1909, 1919, and 1929—are representative of a broader evolution in the conceptualization of experimental psychology. While this evolution is not universally mirrored in all contemporary treatises, it is nonetheless widespread. It reflects a waning interest in theoretical discussions concerning the object and method of psychology and, more broadly, in philosophical discourse regarding psychological systems. These changes coincide with the rapid development of increasingly sophisticated experimental techniques. The interest once directed toward methodological debate has been redirected toward the refinement and application of these techniques.

The historical trajectory of early 20th-century psychology reveals a marked methodological shift from philosophically framed inquiries toward increasingly procedural and technique-centered approaches.

1. From Philosophical Framing to Procedural Orientation:

The early Wundtian model positioned psychology as a descriptive science of subjective experience, emphasizing conceptual definitions and

[1] A Handbook of Child Psychology edited by C. MURCIHSON. Worcester, Mass., Clark University Press, 1931. Seconde edition revised, 1933.

theoretical preambles. Over the following decades, however, this framing progressively gave way to a focus on concrete research procedures, experimental design, and operational criteria. Psychology moved from being a "science of experience" to a "science of behavior" and eventually to a "multi-domain procedural science" where knowledge was primarily conveyed through data and techniques rather than through overarching conceptual statements[1].

2. Scientific and Technological Context:

This evolution coincided with advances in instrumentation and psychometric tools, which reduced the perceived urgency of protracted theoretical debates on the discipline's object. The pattern reflects what the history of science terms an instrumentalist phase, in which the perceived success of a discipline becomes closely tied to the productivity of its methods rather than to the coherence of its conceptual framework.

3. The Influence of Positivism:

The methodological stance embodied in early behaviorism illustrates the imprint of logical positivism on the social and behavioral sciences: excluding constructs that cannot be directly observed and measured, and restricting inquiry to stimuli and responses. While this epistemological rupture eliminated introspection as a scientific tool, it also introduced new blind spots, notably the neglect of internal cognitive processes—an omission that cognitive psychology in the 1960s would later address.

[1] Danziger, K, (1980). Wundt's psychological experiment in the light of his philosophy of science, Psychological Research, pp. 109–112; Henriques, G, and Michalski, J, (2020), Defining behavior and its relationship to the science of psychology, Integrative Psychological and Behavioral Science, pp. 328–335.

4. Changing Role of Introductory Sections:

The transformation of introductory chapters—from extensive theoretical treatises to concise methodological notes or their complete omission—signals a change in the function of a work's opening. Instead of providing a philosophical scaffold, these sections became either technical summaries or were bypassed altogether in favor of direct presentation of empirical findings. This mirrors contemporary trends in applied research, where the theoretical backdrop is compressed to make space for methods and results.

5. The Reorientation Toward Technique:

This reallocation of intellectual attention did not settle the philosophical questions surrounding psychology's subject matter; rather, it shifted the center of gravity toward refining and applying techniques. This process exemplifies methodological technification, in which the pursuit of validity and reliability in measurement takes precedence over sustained theoretical reflection.

A technique can be understood as an evolved and refined method—one that has become precise, systematic, and rigorously controlled. Scientific progress, to a large extent, consists in the continual enhancement of such techniques and the invention of new ones.

Occasionally, a new problem is addressed using pre-existing techniques; at other times, a new discipline adopts experimental tools that had already been developed in another context—such was the case with Wundt's physiological psychology.

More commonly, however, problems, techniques, and scientific domains evolve together. A notable example is the field of child psychology.

Even among the earliest philosophers, we encounter occasional remarks concerning children. Such observations can be found in the works of Plato, Locke, and Rousseau. It was not until the 19th century, however,

that systematic observations emerged. Initially, this took the form of bibliographic methods: journals and diaries documenting continuous observations of children, often including rudimentary experimental trials.

At the end of the 19^{th} century, Stanley Hall popularized the use of questionnaires, a method aimed at uncovering the contents of the child's mind. Although now widely criticized, this approach significantly advanced the emerging science of child psychology, trained a large number of researchers, and laid the groundwork for future investigations. In 1894, Gilbert conducted systematic studies using tests on schoolchildren. This method soon gained considerable importance, primarily due to the success of Binet's research. Within this domain, highly refined techniques were developed—arguably the most sophisticated in all of scientific psychology.

The history of child psychology demonstrates that the development of research techniques emerges through a reciprocal interaction between the problems under investigation and the theoretical framework guiding inquiry. This aligns with Thomas Kuhn's epistemological model, which views scientific progress as the result of a triadic interdependence between problems, tools, and the governing paradigm. The shift from the scattered philosophical reflections of Plato, Locke, and Rousseau to the standardized questionnaires and intelligence tests of Stanley Hall and Binet shows the emergence of a new paradigm that established child psychology as an independent domain within the discipline[1].

From another perspective, Vygotsky's cultural-historical theory reveals that research tools are cultural mediators that shape the very nature of possible knowledge. Binet's intelligence tests, for instance, did not merely measure intellectual ability; they also reinforced the notion that intelligence

[1] Saleebey, D, (2005). A paradigm shift in developmental perspectives? The self in context, In Handbook of Community-Based Clinical Practice, pp. 46–51, Oxford-UK, Oxford University Press.

is a quantifiable construct, a view that subsequently influenced societal and educational conceptions of children's cognitive capacities[1].

Around 1913–1914, genuinely experimental research began to take form. Thorndike conducted a series of studies on learning, practice, and fatigue, while Watson carried out experiments on the responses of newborn infants and achieved conditioned reactions following Pavlovian principles.

Since then, experimental research on children has multiplied and diversified, employing test-based methodologies, physiological procedures, and cinematographic techniques—each becoming increasingly refined. Simultaneously, ever more precise research questions have been posed, and increasingly accurate results have been generated.

There is a deep interconnection between scientific problems, techniques, and results. The broad and vague questions characteristic of the early stages of psychological inquiry were typically accompanied by rudimentary methods and imprecise findings. As research questions become more narrowly defined, they require more sophisticated techniques, and the resulting data become more detailed and reliable.

A technique should not be judged in absolute terms, but rather in relation to the specific problem at hand: Is it capable of solving the problem? Is it currently the most effective method available?

Moreover, a problem truly becomes a scientific problem only when it is accompanied by a technique capable of addressing it. In fact, the technique itself helps to define and delimit the problem. One cannot accurately assess the significance or value of a given result without knowing the technique by which it was obtained.

[1] Kozulin, A, (2003). Psychological Tools and Mediated Learning, in Vygotsky's Educational Theory in Cultural Context, pp. 15–38, Cambridge, UK, Cambridge University Press.

Theoretical discussions about methodology, when divorced from specific problems and concrete findings, are largely fruitless—or, more precisely, they should be limited to one general and negative claim: no technique, whether introspective or objective, should be excluded if it is capable of solving a scientific problem.

Equally unproductive are general theoretical discussions about the object of psychology. This object must be conceived broadly enough so as not to exclude any valid findings. Psychology studies psychic life, with this term understood in its broadest possible sense.

As for the criteria used to evaluate techniques and their results, these evolve concurrently with the development of techniques and empirical research. They involve a critical examination of those techniques, taking into account both their intrinsic characteristics and the results they have already produced. A test scale, for example, should be evaluated in light of the principles of mental measurement, statistical methodology, and findings from both experimental and individual psychology.

The author underscores that the technique is a constitutive element that determines the very contours and boundaries of problem. The results, therefore, cannot be evaluated or even understood apart from the context of the instrument through which they were produced. This position finds solid grounding in contemporary epistemology—particularly in John Dewey's conception of the scientific process as an interconnected cycle of problem definition, hypothesis formulation, and the development of tools necessary for testing those hypotheses. In this view, the tool actively shapes the problem and directs inquiry toward a specific epistemic horizon[1].

[1] Maduabuchi, R. O., and Anowai, E. (2018). John Dewey's instrumentalism and techno-scientific development: Its implications to man and society, Open Journal of Philosophy, 8 (5), pp. 550–556.

Furthermore, the text's call not to exclude any technique capable of resolving a scientific problem—whether introspective or objective—aligns with what is known in methodology as pragmatic instrumentalism, which holds that the validity of a research tool should be judged by its ability to generate reliable and verifiable knowledge, rather than by its adherence to a particular methodological doctrine[1].

With regard to the evaluation of techniques, the text points to a dual criterion: examining the intrinsic properties of the tool itself and weighing them against the actual results it has produced. This can relates to the principle of empirical validity in psychometrics. The case of the intelligence test, for example, illustrates that its adequacy cannot be measured solely by its conformity to the principles of psychometric and statistical rigor but also by its capacity to yield results consistent with both experimental research and individual psychological assessment.

This development of science—intimately bound to the progress of technical methods—is, by its very nature, irregular. It does not follow any pre-established logical framework but often depends on the chance discovery of a successful experimental technique. A fruitful discovery opens up new avenues of research, attracts investigators, and fosters significant advances in a particular domain, while others may remain stagnant.

These reflections on technique bring us back to a conclusion drawn in a previous study[2]: there exists in psychology no generally acceptable scientific system, and, at least for the present, such a system does not appear possible. This conclusion was grounded in the history of

[1] Foster, C. (2024). Methodological pragmatism in educational research: From qualitative–quantitative to exploratory–confirmatory distinctions, International Journal of Research & Method in Education, 47 (1), pp. 4–19.

[2] A. FAUVILLE. Is Scientific Psychology Systematic? Neo-Scholastic Review of Philosophy, 1939 (Vol. 42), pp. 572–584.

psychological systems and in the inherent challenges of experimental practice.

There may, however, be an even deeper reason behind the difficulty of constructing a unified system in psychology—one that lies in the very nature of the human being, which is the object of philosophical inquiry. Examining this issue leads us to consider the relationship between scientific psychology and philosophical psychology.

Let us examine the key characteristics of two major contemporary psychological systems.

Gestalt psychology (or the psychology of form) emphasizes the unified nature of psychological phenomena. Each phenomenon is conceived as a structure or an organized whole, akin to a melody or a perceived figure. There are no true “elements” in isolation, only forms. Even the simplest perceptual experience is already a Gestalt—a figure emerging from a background. These structural or figural properties are naturally drawn from perception itself and were first identified through observation and experimental studies in the field of perception. Subsequent attempts have been made to identify them within other psychic phenomena and even within biological and physical processes. However, they continue to bear the imprint of their perceptual origins and can only be fully understood through a return to perceptual experience.

Gestalt psychology achieves its most significant success in the domain of perception. It highlights the distinctly psychic nature of this fundamental function, and it is on the basis of this insight that it structures its experimental inquiries.

Fauville reveals the non-linear nature of scientific development, showing that it often hinges on the fortuitous discovery of a successful experimental technique—a notion consonant with Thomas Kuhn’s account of paradigm shifts, which abruptly redirect the trajectory of scientific fields.

The absence of a unified scientific framework in psychology appears deeply rooted in the specificity of its subject matter: the human being, whose complexity and multifaceted nature confer on psychological phenomena a multiplicity of dimensions that resist containment within a single theoretical system[1].

From this perspective, the relationship between scientific and philosophical psychology becomes pivotal. Gestalt psychology, for instance, exemplifies an approach that draws on the philosophical premise of conceiving psychological phenomena as organized wholes, translating this insight into precise experimental programs that achieved notable success in the domain of visual perception. This case illustrates how philosophical hypotheses can generate effective research tools, while also exposing the limits of such hypotheses when applied beyond their original context[2].

This interplay between theoretical framework, technical instrumentation, and applied domain demonstrates that psychological methods remain conditioned by the circumstances of their genesis. Efforts to generalize them to other areas may naturally encounter resistance, reinforcing the text's underlying contention that the search for a unified psychological system is of limited utility. Instead, it calls for recognizing the plurality of models and their potential complementarity within the bounds set by their respective theoretical frameworks and technical means.

In contrast, the method of testing has proven particularly effective in the study of intelligence. It allows for the measurement of intelligence with both reliability and precision, revealing its normal distribution, its quantitative character, and—if one may say so—its atomistic nature.

[1] See: McLeod, S. (2023). Thomas Kuhn: Paradigm Shift, Simply Psychology. Link: https://www.simplypsychology.org/kuhn-paradigm.html .

[2] Forti, B. (2015). What are the limits of Gestalt theory?, Gestalt Theory, 37 (2), pp. 162–165.

In brief, the system that emphasizes the conscious aspects of psychic phenomena finds its greatest success in studying lower-level functions such as perception, whereas the system that emphasizes the quantitative and atomistic nature of the mind is particularly effective when applied to higher-level intellectual functions.

Multiple theoretical frameworks—often in opposition—have successfully explored the phenomenon of learning in its broadest sense. Gestalt theory interprets learning as a process of reorganizing perceptual configurations and relies on intuition—that is, on inherently psychic concepts.

Pavlov's research on conditioned reflexes led to the formulation of physiological laws that extend to higher forms of human learning.

Thorndike's theory invokes the factor of belongingness, which presupposes a conscious association, and the law of effect, whose operation may occur unconsciously.

In short, these experimental studies reveal that the learning process involves both clearly psychic elements and purely physiological characteristics.

This intimate coexistence of seemingly opposing properties is a direct consequence of the complexity of the human being. Its deeper significance becomes apparent when the general findings of experimental research are compared with the philosophical doctrine of hylomorphism. According to this doctrine, the intellect—which is the principle of intellectual cognition—is the form of a material body, and together they constitute a single substance endowed with multiple faculties, intimately united by the unity of the subject and bound by relationships of dependence and mutual interaction. Observation and experimentation can access the activities of this unified and complex substance: in the lower activities, they must detect traces of

the mind; in the higher activities, they must identify material and quantitative features.

The text brings to light a central issue in experimental psychology: methodological efficacy cannot be measured by a single criterion, but rather by the degree to which a method is suited to the nature of the functions under study. The success of intelligence testing, for instance, is attributable to its embodiment of an epistemological conception of intelligence as a phenomenon divisible into analyzable statistical components. In contrast, methods oriented toward conscious processes derive their strength from their consonance with the holistic nature of perceptual functions. This methodological divergence raises a contemporary question in the philosophy of psychological science: Is it possible to devise a hybrid research methodology capable of combining quantitative rigor with the capacity to apprehend the structural totality of psychological phenomena[1]?

In the domain of learning theories, it is noteworthy that each theoretical framework—whether Gestaltist, behaviorist, or associationist—succeeds in explaining certain aspects of the phenomenon while leaving others unaccounted for. This pattern shows the inherent limitations of any single-perspective approach. Here, a recent research direction in the cognitive sciences—known as multi-level integration—seeks to merge findings from neuroscience, psychometrics, and cognitive modeling into a single framework. This approach aims to conceptualize learning as the interplay between fine-grained physiological processes and dynamic patterns of perceptual organization[2].

[1] Uher, J, (2018), Quantitative data from rating scales: An epistemological and methodological enquiry, Frontiers in Psychology, 9 (2599), pp. 1–25.

[2] Forstmann, B. U, and Turner, B. M, (2024), An Introduction to Model-Based Cognitive Neuroscience, pp. 211–239, Cham-Switzerland, Springer.

Furthermore, the text's linkage between empirical findings and the hylomorphic doctrine opens a path for renewing discussions about the potential of classical philosophical models to illuminate contemporary research results. The notion of the "unity of the psychophysical substance" may today find a concrete counterpart in concepts such as embodied cognition, which holds that higher mental capacities are inseparable from bodily structure and material interaction with the environment. From this standpoint, the study of learning, perception, or intelligence is necessarily conditioned by the dialectical interdependence between biological constitution and psychological organization—an interdependence that serves as a foundational principle for the very design of research instruments.

This perspective reveals the mistake made by those who attempt to fit the findings of experimental psychology into the traditional framework of faculties. These faculties result from a metaphysical analysis, whereas experimentation can only engage with complex functions.

Scientific psychology has also shed light on the existence of multiple individual differences. The outcomes of psychometric assessments suggest a normal distribution, reflecting the influence of numerous independent factors that combine randomly.

It is not only individual psychic traits that vary, but also the interrelations between them. There are no fixed relationships, only correlations of varying degrees of strength.

Individual psychology identifies numerous hereditary and environmental factors as the sources of these variations. Yet these influences do not entirely determine personality, which, in most cases, is harmoniously adapted. The impact of hereditary and external factors is moderated by internal forces that integrate them into a coherent developmental process.

This development may be described as a succession of increasingly complex structures. Continuous evolution leads to ever-changing, yet consistently harmonious outcomes.

This process of development is observed in its reactions. Here as well, increasingly complex patterns of responses form a consistent sequence. This phenomenon has been illuminated through the study of embryonic reactions and early behavioral responses in infants during the first months of life. In some insects, internal development alone gives rise to highly complex instinctive reactions, which are neither the product of imitation nor of learning.

The text raises a profound issue that goes beyond a simple critique of the traditional notion of "faculties of the soul", hinting instead at a methodological clash between classical metaphysical analysis and the experimental approach grounded in the observation of complex functions. This opens the door to a discussion of the epistemological foundations of psychology: should it remain faithful to earlier philosophical models, or does its empirical nature compel it to sever ties with inherited conceptual frameworks that lack experimental proof[1]?

The reference to the normal distribution of individual differences also introduces new questions regarding the statistical interpretation of human behavior. In recent decades, this conception has been challenged in light of research highlighting the heterogeneity of distributions in certain traits (such as emotional intelligence or cognitive flexibility), prompting the question of whether an overreliance on the normal distribution model

[1] Gobar, A. (1968). Epistemological framework of psychology, In Philosophic Foundations of Genetic Psychology and Gestalt Psychology, pp. 242-249, New York-USA, Springer.

obscures the understanding of rare or unconventional cognitive and emotional structures[1].

Moreover, the denial of fixed relationships between psychological traits invites a reconsideration of psychometric projects that aim to establish stable indicators of personality or intelligence. In light of modern Network Theories of Personality, traits can be understood as variable nodes within a dynamic network, where the strength of interconnections is context-dependent—shaped by social and cultural influences—rather than fixed statistical constants.

From a developmental perspective, the reference to the interplay between genetic and environmental factors and internal organizing forces points toward a view akin to Developmental Self-Organization. This view is supported by developmental neuroscience research showing that the brain actively constructs its own functional patterns in response to them.

Finally, the comparison between the evolution of the living organism and the evolution of its response patterns—alongside examples drawn from instinctive insect behavior—invites a debate on the dialectic between the innate and the acquired. In light of recent findings on Prenatal Learning and Early Sensory Priming, the question can be reframed to explore the boundaries between what is purely innate and what is biologically predisposed to receive learning[2].

These findings have led psychologists to formulate the concept of maturation. Growth is a unified evolutionary process that is influenced from

[1] Murray, C. and Herrnstein, R., J. (1994). The Bell Curve: Intelligence and Class Structure in American Life, "Cognitive Class and Education", pp. 35–70, New York–USA, Free Press.

[2] Partanen, E., and Virtala, P. (2017). The Cambridge Encyclopedia of Child Development, "Prenatal Sensory Development", pp. 231–241, Cambridge–UK, Cambridge University Press.

the outset by multiple hereditary factors whose effects persist throughout the entire course of development, even as they are continuously modified by the organism's overall evolution. This growth is also subject to external influences and adapts to specific environmental conditions through learning. Yet the primary role is played by internal factors, which organize all these influences, draw from them a harmonious totality at each stage, and preserve the unity of the developmental trajectory. These internal influences are what we refer to as maturation.

The notion of maturation is both useful and indeed essential in psychology, but it is not without a certain conceptual obscurity. It can be clarified by the philosophical conception of the animated form—an internal, non-extended principle of determination and immanent activity that organizes matter and governs its movements.

This second example illustrates how the relationship between scientific psychology and philosophical psychology ought to be understood.

Scientific research proceeds independently of philosophy and leads to partial systematizations and the development of necessary operational concepts. Philosophical work, likewise conducted independently of experimental studies, results in conceptions which, when compared with the general findings of science, help to clarify them—to render them more intellectually satisfying and coherent for the human mind.

We would like to point out, in a different domain of psychological research, a third example of the relationship between scientific and philosophical psychology—namely, in the area of morality. There are two principal sources of empirical data in this field: studies of Juvenile Delinquents and studies of the formation of moral habits.

Research conducted on thousands of delinquent children, primarily through statistical and clinical methods, has identified a wide range of factors influencing behavior—hereditary, physical, psychological, and

environmental—with the latter likely playing the most significant role. Yet none of these influences can be considered strictly deterministic. In each individual case, one does not find a single causal influence but rather a constellation of multiple factors, each with varying degrees of significance and forming a unique configuration.

In recent years, moral habits have become the subject of fruitful research. It has been observed that schoolchildren possess stable and highly specific moral habits. These habits depend on multiple factors, both internal and external; the significance of each factor varies depending on the particular habit in question, and none exhibits a direct or intimate correlation with actual behavior. Not only is no single factor coercive, but even a comprehensive understanding of these influences does not allow for the prediction of individual behavior—that is, it remains impossible to determine in advance which moral habits an individual possesses. The constellation of influencing factors is therefore not deterministic.

These two lines of research converge toward the concept of partial determinism in behavior.

This conclusion is clarified through the philosophical notion of free will—a will that determines itself, yet remains a human faculty subject to organic influences and operating within time, in concert with acquired moral habits.

In summary, scientific psychology cannot integrate the entirety of its findings into a unified theoretical system. Neither its object nor its method can be precisely defined. What proves useful, instead, is the study of specialized techniques, developed alongside the emergence of specific problems.

This non-systematic character likely reflects the relative youth of psychological science. Yet the delayed development of the discipline also

corresponds to the inherent difficulty of experimentation and measurement in this field, as well as the complexity of its subject matter.

This complexity acquires deeper significance when examined in light of the central theses of philosophical psychology. Philosophical and scientific psychologies evolve independently of one another, yet the general findings of scientific psychology gain clarity and become more intellectually satisfying when interpreted through the lens of philosophical doctrine.

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