

Contents lists available at [SciVerse ScienceDirect](#)

Studies in History and Philosophy of Biological and Biomedical Sciences

journal homepage: www.elsevier.com/locate/shpsc

Vygotsky's *Crisis*: Argument, context, relevance

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ARTICLE INFO

Article history:
Available online xxxx

Keywords:
Vygotsky
Crisis in psychology
Methodology of psychology
Marxism
Leon Trotsky

ABSTRACT

Vygotsky's *The Historical Significance of the Crisis in Psychology* (1926–1927) is an important text in the history and philosophy of psychology that has only become available to scholars in 1982 in Russian, and in 1997 in English. The goal of this paper is to introduce Vygotsky's conception of psychology to a wider audience.

I argue that Vygotsky's argument about the “crisis” in psychology and its resolution can be fully understood only in the context of his social and political thinking. Vygotsky shared the enthusiasm, widespread among Russian leftist intelligentsia in the 1920s, that Soviet society had launched an unprecedented social experiment: The socialist revolution opened the way for establishing social conditions that would let the individual flourish. For Vygotsky, this meant that “a new man” of the future would become “the first and only species in biology that would create itself.” He envisioned psychology as a science that would serve this humanist teleology.

I propose that *The Crisis* is relevant today insofar as it helps us define a fundamental problem: How can we systematically account for the development of knowledge in psychology? I evaluate how Vygotsky addresses this problem as a historian of the crisis.

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When citing this paper, please use the full journal title *Studies in History and Philosophy of Biological and Biomedical Sciences*

1. Introduction

Vygotsky wrote *The Historical Significance of the Crisis in Psychology* in 1926–1927 as a methodological foundation for an emerging research program. The seed that grew into this fruit was fertilized, however, during a crisis of a quite different sort—a medical crisis that necessitated a half-year hospitalization during which time it was not clear that the author would survive. While Vygotsky was suffering (between November 1925 and May 1926) from a serious tubercular episode, he immersed himself in reading contemporary psychology, and sometime during his hospital stay a sea change in his psychological and philosophical outlook took place. *The Crisis* prepared the ground for his systematic efforts to develop “cultural-historical” psychology—a body of theory and research that aimed to explain the cultural origins of higher mental processes.

Besides a personal sense of urgency, Vygotsky's *Crisis* bears the mark of surrounding social upheavals. It was written in the first decade after the Russian revolution. At that time, many Soviet intellectuals were convinced that the whole world was in crisis—that

capitalism would soon yield to the pressures of the world proletariat, and that societies and individuals had a chance of a new beginning. In *The Crisis*, Vygotsky discusses the state of psychology in terms suggestive of revolutionary change, using metaphors of liberation, birth, and violent intervention (e.g. “the liberation of what is capable of growing in science,” Vygotsky, 1997e, p. 335; “psychology is pregnant with a general discipline but has not yet delivered it,” *ibid.*, p. 237; “I venture... to cut the living tissue of psychology... into two heterogeneous bodies which grew together by mistake,” *ibid.*, p. 333, see also *ibid.*, pp. 323–324). In the beginning, he declares that specialized psychological disciplines have “obviously” (sic!) reached “a turning point” in their development, and that at this point normal science is “fruitless or even impossible” (1997e, p. 233). He proceeds to propose Marxist psychology as a solution to this predicament. Thus Vygotsky's thinking about psychology incorporates his Marxist understanding of history and his strong sense of himself as an agent of change (cf. 1997e, p. 336).

Vygotsky's keen awareness of history is manifest in the title of his treatise. The expression “the historical significance of the crisis”

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(*istoricheskoje znachenije krizisa*) itself has double significance. It can refer to the historically specific state of psychology in the West and Russia in the 1920s. It can also mean that the crisis possesses “historical significance” inasmuch as it offers a challenge to determine the future of psychology. The two aspects of Vygotsky’s understanding of history are connected. He was deeply committed to the historical situation and the society in which he lived, and his thinking about the future of psychology was bound up with his concern for the social demands of the fledgling Soviet society. What was desirable for Soviet psychology in the 1920s he saw as key for psychology as a whole.

In this paper, I (1) discuss the publication history, structure, and functions of the text (Section 2); (2) reconstruct Vygotsky’s argument about the crisis in psychology and consider some of its formal characteristics (Section 3); (3) clarify the connection between Vygotsky’s argument and the social setting in which he worked (Section 4); and, finally, (4) evaluate Vygotsky’s argument in the light of subsequent developments in psychology and propose its relevance to historians of science today.

2. The text

2.1. Publication

The Crisis remained unpublished until 1982, when it was included in Vygotsky’s *Collected Works* in Russian (Vol. 1, eds. A. R. Luria, M. G. Yaroshevsky, and A. V. Zaporozhets). In 1997 it was translated into English (by René van der Veer, in Vol. 3 of *The Collected Works of L. S. Vygotsky*—an edition that included some additional scholarly commentary, beyond the initial work of the Soviet editors).¹ The text still lacks a comprehensive scholarly apparatus of commentary and references, which would fully identify Vygotsky’s sources and clarify how his reasoning in *The Crisis* relates to his other works.² A number of scholars have recently addressed *The Crisis* (Kozulin, 1990; Packer, 2008; Rieber & Jeffrey, 1997; van der Veer & Valsiner, 1991; Veresov, 1999; Yaroshevsky, 1989, 2007), but the text has not yet been widely discussed by philosophers and historians of science outside of the former Soviet Union.

The reasons why Vygotsky did not publish *The Crisis* in his lifetime remain unclear. It is possible that he did not consider the text complete and worthy of publication. Publishing it might have caused complications of political character, for Vygotsky was polemical in critiquing many Soviet psychologists. Preparing *The Crisis* for publication might have taken time from more pressing projects. Vygotsky likely shared the manuscript with his students, who undoubtedly discussed the topic with him (Leontiev, 2000; Luria, 1932; Yaroshevsky, 2007; cf. Cole, 1997). After Vygotsky’s death in 1934, his work was banned by the Soviet authorities. Although it remained long unpublished, *The Crisis* proved to be an important text for the history of Soviet psychology. Through Vygotsky’s subsequent work and that of his students, the ideas of *The Crisis* exerted an influence on the direction that the discipline took in the Soviet Union (Yaroshevsky & Gurgenzidze, 1977). Yet these ideas have never been contested in an open forum by Vygotsky’s contemporaries.

2.2. Structure and functions of the text

Vygotsky does not present his argument in a linear fashion. He starts by elaborating a solution to the crisis—a theory of “general

psychology,” which would provide a common conceptual and methodological basis for psychological research in specialized areas (Sections 1–9). Later in the text (in Sections 10–14), he focuses more closely on the diagnosis and treatment of the crisis. Here he identifies its main symptoms, defines its “proximate” and deeper causes, and outlines a course of action for overcoming it. In particular, he addresses the needs of Marxist psychologists who want to create a methodologically robust research program on the foundation of dialectical materialism.

Throughout the text, Vygotsky intersperses his discussion of the crisis and its solution with his more general reflections on the nature of scientific knowledge. For example, in Section 7 he discusses different types of scientific theories as methodological systems and different ways of synthesizing such systems. In Section 9, he develops his views on concept formation in the sciences. In Section 13, he discusses induction and analysis as methods of psychological research. In such theoretical digressions, Vygotsky explicates his philosophy of psychology and provides a normative standard against which he evaluates recent developments in the discipline. I cover such general views inasmuch as they help me reconstruct Vygotsky’s basic argument about the crisis.

Vygotsky pursues two main goals. First, he aims to clarify what is happening in contemporary psychology and what needs to be done. Second, he aims to explain how a body of knowledge in psychology—or, if we interpret it more broadly, in any social or human science—should be constructed. In presenting his argument, Vygotsky privileges the goal of exposition, rather than that of careful justification of his claims. He argues heavily on the offensive, criticizing many authors (especially idealist psychologists and sloppy Marxists), but builds a weaker defense. This style of argument can be explained by the fact that Vygotsky worked with a group of people who (at that time) deferred to his intellectual authority—most famously, A. R. Luria and A. N. Leontiev, with whom he later developed the cultural-historical research program. As a group leader, Vygotsky produced a methodological guide that could unify his followers and help them move forward.

3. Argument

3.1. Method and scope

Vygotsky characterizes his method of reasoning in *The Crisis* as an analysis of recent developments in psychology (1997e, pp. 236–237). He tries to show that most of his major claims follow from his examination of facts—of theories and research results published by Russian and Western psychologists.

He discusses the work of Freud, Adler, Jung, Kretschmer, Wertheimer, Koffka, Köhler, W. Stern, Münsterberg, the Würzburg psychologists, Wundt, Ebbinghaus, Groos, K. Bühler, Husserl, James, Thorndike, Titchener, J. B. Watson, S. Hall, Ribot, Pavlov, Bekhterev, V. A. Vagner, Vvedenskiy, Chelpanov, Lazurskiy, Blonskiy, Kornilov, and Spilrein. He pays great attention to other writings on the crisis, including those by Binswanger, Höffding, Dilthey, Rickert, Stumpf, Ivanovskiy, N. N. Lange, Zelenyi, Vishnevskiy, and Struminskiy. Vygotsky makes no reference to the texts of Willy, Kostyleff, Driesch, or Bühler on the crisis. These sources were most likely unavailable to him.

Vygotsky’s mode of engagement with the above authors is dialectical in a classical sense (perhaps as a result of his education

¹ In citing *The Crisis*, I follow van der Veer’s English translation (Vygotsky, 1997e) except for those instances when my own translation more exactly renders some nuance of meaning of the original. In the latter case, I cite a Russian edition of *The Crisis* (Vygotsky, 2006a).

² Substantial progress in this direction has recently been made by Zavershneva (2009), who did some close, philological work with the original manuscript of *The Crisis* from the Vygotsky family archive.

in law). He develops his ideas through recapitulation and refutation of those of others, and he tends to identify premises of his interlocutors and to reinforce or attack these premises.³

Vygotsky's reasoning is also influenced by Marxist dialectics (cf. van der Veer & Valsiner, 1991, pp. 391–393). He aspires to a “scientific” analysis of the crisis—a method inspired by historical materialism (1997e, p. 241, pp. 257–258). This method is based on the key premise of dialectical materialism that life, society, and science are governed by “objective laws,” amenable to discovery and analysis (1997e, pp. 244–245). Vygotsky emulates the method of *Das Kapital*, in which Marx analyses economic facts in order to abstract invariant forms and concepts of political economy (cf. Vygotsky, 1997e, p. 320, pp. 330–331).

Vygotsky advocates that historians of science examine episodes in the history of psychology as concrete cognitive “events” (1997e, pp. 236–237). They are cognitive insofar as psychologists try to generate knowledge about real phenomena. As events, such episodes have structure and can be understood in terms of causality, determined by factors internal and external to science. For Vygotsky, internal factors are most important. He advises that scientific practices be analyzed in relation to the real objects that they aim to explain: *How well* do scientific concepts and methods at a given historical period capture the complexity of real phenomena? Scientific facts—i.e. objects in the world as *we know them* at each historical stage of science—impose “objective demands” on the scientist, who wants to know more (1997e, p. 241, pp. 243–244). Irrespective of the whims of individuals, the course of science is determined by yesterday's successes and failures of learning. Therefore, Vygotsky believes, historical analysis can serve the ends of scientific methodology. Just as a politician can study the past in planning future action (we might think of Churchill), a historian of science can discover tendencies and lacunae in the development of knowledge, which can be used in planning further research (Vygotsky, 1997e, p. 237).

It remains a question how well Vygotsky abstracts objective tendencies in psychology from his analysis of specific developments in the discipline. In particular, it is difficult to evaluate how rigorously he examines the textual sources from which he gains his knowledge of contemporary psychology because he does not expose his reasoning from these sources carefully and systematically. Nor does he ever explain in detail his technique of textual analysis. Moreover, Vygotsky's historical analysis is haunted by circularity. He claims that he derives his theory of the crisis—his understanding of “general psychology”—from “facts” in the history of psychology. Yet he also claims that one can “objectively” understand these “facts” only from an advanced methodological perspective, having arrived at a theory of “general psychology” (1997e, p. 257). Vygotsky extensively reasons through examples of specific psychological theories, yet a deductive, normative streak in his reasoning remains prominent.

Vygotsky, himself fighting disease, describes contemporary psychology as a dying patient. From Spinoza he borrows the idea that a terminally ill man places all his hope in any remedy, however doubtful its effectiveness, since he has no hope otherwise (1997e, p. 246). Similarly, Vygotsky argues, psychology has been looking for a resolution of the crisis in all the wrong places. He aims to offer the only adequate, although quite radical, measure. In his argument, he moves from symptoms of the crisis to diagnosis, and finally to prognosis and treatment.

3.2. Symptoms

Vygotsky identifies the symptoms of the crisis by critically engaging with the opinions of his contemporaries (such as Chelpanov, J. B. Watson, Bekhterev, Allport, Portugalov, Kornilov, N. N. Lange, Ebbinghaus, Binswanger, Windelband, and V. A. Vagner). He determines what is right and valuable in these views and rejects the remainder. He is left with the following main symptoms:

- (1) *Fragmentation of knowledge*. Referencing Brentano's (1874) complaint that psychology was spilt into too many schools and approaches, Vygotsky concludes that the discipline has suffered from chronic divergence. There has been no unified basis for building scientific knowledge. Each psychologist has started from scratch, and has adopted a different set of concepts and principles (1997e, p. 295).
- (2) *Contention*. Major paradigms in psychology are fighting for primacy. This struggle reveals the objective need for a “general discipline” that would unify knowledge and coordinate research (1997e, pp. 295–296, p. 329).
- (3) *Methodological morass*. Psychologists often lack clarity about the ontological and epistemological foundations of their approach. Theories and research programs are inconsistent and eclectic, and lack solid methodologies. Psychologists suffer from philosophical “babyhood”—an attitude that some (e.g. the subjective empiricists) cultivate deliberately (1997e, pp. 298–300). Current psychological terminology is disordered and immature; it reflects the weak conceptual apparatus of psychologists (1997e, pp. 281–291).
- (4) *Normal science is stalled*, or unproductive, because researchers lack a robust theoretical and methodological foundation that would ensure the utility of their efforts (1997e, p. 295).
- (5) The crisis is ultimately *constructive*: It will free the best, most viable forces in psychology, thus allowing psychology to become a mature science with a unifying paradigm (1997e, p. 295).

3.3. Diagnosis

Vygotsky argues that those who see the resolution of the crisis in a synthesis of existing approaches try to treat the symptoms instead of the disease. They do not look deeply enough to question what factors account for the divergence of psychological approaches, and whether these approaches can be reconciled at all (1997e, p. 297). Vygotsky concludes that a synthesis of existing psychologies is impossible, since they rest on incompatible philosophies. These conflicting philosophies are essentially two: materialism and idealism.⁴ They give rise to two mutually exclusive kinds of science: materialist (or objectivist) psychology and idealist (or subjectivist) psychology (1997e, pp. 300–301).

To clarify the distinction between the two, Vygotsky considers the views of Münsterberg, Dilthey, Stout, Binswanger, Bleuler, and Stern, who also acknowledge the split of psychology into two camps, albeit in somewhat different terms. These authors agree that the two psychologies differ in their method of studying the psyche. One group, whom Vygotsky calls “the materialists,” is interested in explaining the psyche causally, as other natural phenomena are explained. The other groups, “the idealists,” is interested in “understanding” the psyche “intentionally, as

³ Even as a dialectician, Vygotsky privileges offense over defense. In his analysis, he is more interested in explaining his own views, rather than in justifying his interpretation of those of others. He also tends to treat psychological concepts and theories at a high level of abstraction (he admits it (1997e), p. 236). But he does not show how he arrives at his abstract interpretations.

⁴ Here Vygotsky adopts a line of reasoning, borrowed from Lenin (1909), according to which any intellectual position can be reduced to one of the two mutually exclusive sets of commitments, materialism or idealism (cf. van der Veer & Valsiner, 1991, p. 152). He seems to be unaware of the limitations of this approach.

spiritual activity, which is oriented towards a goal and exempt from all material connections” (1997e, p. 302). The former aim at intervention (1997e, pp. 305–306); the latter—at observation and empathy. Materialists and idealists (sometimes tacitly) hold different assumptions about the nature of mind. Vygotsky finds the fullest articulation of these assumptions in the work of Feuerbach and Husserl, respectively.

Feuerbach, in the words of Vygotsky, postulates that “consciousness and the brain are a product, a part of nature, which reflect the rest of nature” (1997e, p. 328). A natural object, including the mind, is not identical with the cognizing subject. Therefore, the mind can be objectively studied upon the model of the natural sciences. In contrast, Husserl believes that mental phenomena are fundamentally different from natural ones. In an act of consciousness, being and knowing are indivisible; the subject and the object of a psychological experience are inseparable. Thus we can only describe subjective psychological experiences, without explaining them (1997e, pp. 322–323). Materialist psychology proceeds by induction, objective analysis, and experiment (1997e, pp. 317–322). Idealist psychology proceeds by introspection (1997e, p. 317).

For Vygotsky, only materialist psychology can be scientific. By “science” he means a kind of inquiry that (1) rests on empirical data and (2) makes statements that can be falsified. In *Thought and Language* (2005a, p. 19) Vygotsky counts Lévy-Bruhl’s *Les fonctions mentales dans les sociétés inférieures*, Freud’s *Die Traumdeutung*, and Blondel’s *La conscience morbide* among the achievements of “scientific psychology.” All aim at a systematic explanation of empirical phenomena—an explanation that would capture their true nature and functioning. It is in this sense that we can speak of social and human sciences, such as history—a rigorous study of historical facts based on methods specific to the discipline.

Vygotsky deepens his diagnosis. He questions what is at the root of the split into materialist and idealist camps. As the proximate cause and “driving force” of the crisis, he identifies the rise of applied psychology (1997e, p. 305). He emphasizes that the needs of practice—of psychiatry, pedagogy, abnormal psychology, industrial psychology, criminology, penology, etc.—demand a system of positive knowledge that would explain how the individual functions in society.

Vygotsky considers knowledge from an ecological perspective: Knowledge is always knowledge for something. He believes that science exists to satisfy practical needs in the world. For Vygotsky, the advantage of materialist psychology—as opposed, for instance, to *verstehende Psychologie*, Husserl’s phenomenology, philosophical anthropology, metaphysics, and art—consists in its ability to help us manipulate (*upravlat’*) the world. In his view, scientific psychology possesses enormous social significance because it can develop techniques to help people better manage themselves and maximize their natural endowments in society. He calls psychotechnics (“a scientific theory which would lead to the subordination and mastery of the mind, to the artificial control of behavior”) a “revolutionary” advancement in psychology (1997e, p. 307). In his later work, Vygotsky further refines the idea of self-mastery as a scientific concept. It helps him explain how cultural tools, such as language and writing systems, aid the development of cognition and, broader, personality.

Vygotsky opposes introspective, idealist psychology in remarkably strong terms. Introspective psychology draws its material “from the narrow well of individual consciousness” (1997d [1925], p. 56) and is therefore ill-suited to deal with social tasks: “One cannot treat or cure relying on introspection”; “Husserl’s eidetic psychology, which is not interested in the truth of its claims, is not fit for the selection of tram-drivers” (1997e, p. 306). For Vygotsky, the goal of psychology is to produce knowledge that can be used in society—generalizations about human behavior, cognition, and personality that are based on, and confirmed by, empirical research; and that empower people.

Vygotsky admits that the real successes of applied psychology in his time have been limited, but “its methodological meaning is enormous”:

“Method” means “way,” we view it as a means of knowledge acquisition. But in all its points the way is determined by the goal to which it leads. That is why practice reforms the whole methodology of the science. (1997e, p. 306)

Along with Münsterberg, Vygotsky concludes that psychological science will be causal, empirical, comparative, experimental, and will rely on physiological data (2006c, p. 307).⁵

3.4. Prognosis and treatment

3.4.1. “A bloody operation”

Vygotsky intended to elaborate the basic concepts and principles of the new paradigm of scientific psychology (1997e, p. 314, p. 333; cf. p. 323), yet this part of the treatise has never been written. In the existing text, Vygotsky discusses the resolution of the crisis in a general form, as a set of preliminary tasks for psychologists to accomplish.

The first task, Vygotsky insists, is to finalize the split between idealism and materialism in psychology. He claims that although these tendencies pull the discipline in opposite directions, individual psychologists are not necessarily aware of the conflicting principles they hold. Thus Vygotsky discusses cases such as Münsterberg and Stern, who, he believes, mix materialist and idealist views in a single approach. In these cases “it is only the surgeon’s knife which can save the situation” (1997e, p. 324). For Vygotsky, one can integrate psychological knowledge and conduct socially useful research only on the materialist foundation. Other, non-scientific approaches to mental phenomena will become the province of the arts and the humanities (1997e, p. 326, p. 336, pp. 341–342).

It is noteworthy *how* Vygotsky argues against the introspectionists. He does not deny the usefulness of introspection *per se*. In other writings of the period, he draws on introspective discoveries of James and the Würzburg school as positive knowledge and uses them in his own argument (e.g. 1997a [1925]). In *The Crisis*, he claims that “the problem of self-observation is a problem of technique and not of principle. . . . We must use it to the extent that it is useful. . . .” (1997e, pp. 272–273). As a materialist, he adds that introspective processes need to be explained objectively, as “one of psychology’s particular problems” (1997e, p. 273). In other words, psychologists must account for why psychological processes appear to an introspective observer in a particular way.

⁵ Vygotsky changed some details of his diagnosis over the years. In “Preface to Lazursky” (1997d [1925]), he claims that the crisis has arisen *within* the camp of idealist psychologists (subjective introspectionists) because they have realized the need for “more firm, stable and scientifically reliable foundations and sources of knowledge” (p. 56). In *Thought and Language* (2005a [1934]), he identifies the cause of the crisis as a “sharp contradiction” between “the factual material” of psychology (i.e. empirical observations) and its “theoretical constructions,” or “methodological foundations”—such as those of Lévy-Bruhl, Freud, and Blondel, who build theory in the old-fashioned style of idealistic, “metaphysical,” “ad hoc,” “pre-scientific” thinking (p. 21). Thus contemporary psychology “makes one step forward in collecting factual material and two steps backward in its theoretical interpretation and exposition” (p. 21). In *The Teaching about Emotions* (1984 [1931–1933]), Vygotsky traces the origins of the bifurcation of psychology to Cartesian dualism. He concludes that the crisis, understood as a split between materialist and idealist approaches, can be resolved only by solving the psychophysical problem.

Vygotsky objects to introspection as the primary tool of psychological research because it necessarily limits one's access to the psyche. Introspection cannot access unconscious phenomena; it fails to "directly perceive [our acts of] thinking [and] comparison" (Vygotsky refers to the Würzburg school experiments) (1997e, p. 324); it leads to the atomization of knowledge; and it does not reveal psychological phenomena in development (1997d [1925]). One can account for the continuity of mental life only by means of causal explanations (1997e, p. 326). Vygotsky agrees with the introspectionists that understanding "the life of the soul" is a worthy—indeed a "natural"—goal. Yet, he claims, other goals can be achieved only through "unnatural" means (Vygotsky 1997e, p. 307, qtd. Münsterberg, 1920, p. ix). For example, if children are not taught to read and write through artfully contrived techniques, they remain illiterate. Any discipline that aims at the modification of human behavior is "unnatural" in the same way that medicine is "unnatural"—yet medicine saves lives.

The next task for the psychology of the future is to construct a viable methodology—an internally consistent network of concepts, principles, methods, and goals that specify how psychological knowledge is to be produced. Vygotsky envisions psychology as a *sui generis* natural science that occupies a position between biology and sociology. He stresses that psychology is a *natural* science insofar as it deals with real objects—as opposed to formal sciences, such as mathematics (1997e, pp. 328–329).

The proper object of psychological science, for Vygotsky, is mind in the social context. Therefore, he insists that materialist psychology explain the individual and the social as "two aspects of a single science" (1997e, p. 237). He transforms Marx's sociological dictum that humans are products of social relations into a challenge for psychology to explain how exactly the individual develops in society and culture. Thus he avoids the split between individual and social psychology that has fractured Western psychology from its beginnings to the present.

Vygotsky offers guidelines for creating a methodology for scientific psychology. First, he lays out some formal principles of "general psychology"—a master discipline that will integrate psychological knowledge and coordinate research. Second, he identifies a problem of method for materialist psychology. Third, he notes specific challenges relevant for Marxist psychologists in Russia.

3.4.2. General science

By "general science" Vygotsky means a super-ordinate discipline that functions as a conceptual and methodological basis for several areas of specialized research. Vygotsky opposes the idea of a formal (content-free) theoretical psychology that was advanced by Binswanger (1922). On Vygotsky's view, a super-ordinate discipline must generalize from the empirical findings of the sub-disciplines. A general science unifies knowledge; develops basic concepts, methods and principles; correlates and systematizes the data of specialized fields; formulates questions; sets goals; and defines the place of the given branch of knowledge in the larger system of human knowledge (1997e, p. 233, p. 236). Because general science involves a high degree of reflection on, and planning, how knowledge is produced, Vygotsky also refers to it as a "methodology." A general science, or methodology, equilibrates concepts developed in the sub-disciplines. It creates a shared conceptual framework that provides a coherent way of explaining data.

Vygotsky illustrates how a general science works by using the example of biology. In the seventeenth century, Buffon and Linné developed two approaches to the study of animals: one focused on the description of animals and of their way of life, the other—on their classification. With time, these fields became more differentiated and complex; they started to converge and to compete for primacy. In *Philosophie zoologique* (1809) Lamarck integrated the

knowledge attained by these disciplines in a framework of a higher order—"general biology," which was further developed by Darwin (1997e, pp. 296–297, p. 247). The new discipline focused on the properties common to all living things. It extended the bounds of knowledge attained by the special disciplines through the application of higher-level concepts (e.g. "the organism, the evolution of species, natural selection, life") to individual research results (1997e, p. 247). Vygotsky believes that psychology needs a similar conceptual framework.

For Vygotsky, a general discipline starts with two basic structural elements: "the grounding concept" and "the explanatory principle." "The grounding concept" defines the object of study and thereby delimits the field of inquiry. It results from "the primary act of abstraction," when one identifies the properties common to all phenomena under analysis (e.g. what counts as a "fact" of psychological science). "The explanatory principle" spells out (deciphers, *rasshifrovyyaet*) the causal dependency between the objects of investigation (2006a, p. 51; cf. 1997e, p. 240). It explains how pieces of knowledge fit together.

The grounding concept partly determines the explanatory principle. For example, Freud's grounding concept of the "unconscious" contains the seed of the principle of "sexuality," which explains many aspects of human behavior. Pavlov bases his system on the grounding concept of "the conditioned reflex," which determines the explanatory principle: The conditioned reflex allows animals and humans to transform what is innate into personal experience. A particular grounding concept and explanatory principle determine the identity of a particular psychological paradigm. In *Pedagogical Psychology* (2005b [1926]), Vygotsky himself attempted to sketch a unified model of psychological knowledge based on the grounding concept of "the conditioned reflex," a concept he borrowed from Pavlov and Bekhterev and suited to his ends. As the explanatory principle, he posited the adaptive function of the conditioned reflex: The conditioned reflex enables humans to adapt to the environment (which includes both natural and socio-cultural elements).

These examples illustrate the core structure of a methodology of psychological science, as Vygotsky conceives it in *The Crisis*. Those who want to build such a methodology have to practice a special kind of scientific reasoning. They have to work in between low-level research and high-level speculation. Vygotsky defines methodology as a mid-level theory—"a system of mediating, concrete concepts, adjusted to the scale of the given science" (2006a, p. 172). To reach this level, psychologists have to rise above their laboratory routine, while philosophers have to descend from the height of abstraction. Whoever fails to attain this middle level—and, in Vygotsky's opinion, all too many psychologists of his generation do—"will inevitably jump over his horse while trying to sit on it" (1997e, p. 329).

Vygotsky stresses that general psychology is primary to concrete research, because one can ask productive research questions only from the perspective of a coherent general theory:

A correct statement of the question is no less a matter of scientific creativity and investigation than a correct answer—and it is much more crucial. The vast majority of contemporary psychological investigations write out the last decimal point with great care and precision in answer to a question that is stated fundamentally incorrectly. (1997e, p. 258; Vygotsky approvingly cites similar judgments by Münsterberg and Lipps; *ibid.*, p. 258)

As an example, Vygotsky notes that numerous shortcomings of child psychology in his time stem from the absence of a general theory that would develop the concept of childhood, the "conception of development," and the "research goal, i.e.,...state the

problem of child behavior and personality”—in the context of the higher-order concepts and goals of a general psychology (1997e, p. 271).

3.4.3. Method, tools, and concepts

For Vygotsky, the success of psychology wholly depends on how well its practitioners understand the nature of reasoning with scientific concepts, which determines all scientific practices. Vygotsky stresses that concepts do not replicate, or represent as images, portions of lived experience. Rather, they isolate and abstract salient features of an object and thereby make it available for systematic study. Vygotsky argues against the then contemporary “dogma” that “immediate experience... [is] the single source and natural boundary of scientific knowledge” (1997e, p. 272). He picks up on Max Planck’s call to liberate physics from “the human eye” by replacing it completely with scientific apparatuses, because modern physics overwhelmingly deals with objects directly inaccessible to the senses. Just as physics, psychology attempts to explain objects that are not readily observable, such as unconscious processes or developmental changes. Vygotsky stresses, “[f]or psychology the need to fundamentally transcend the boundaries of immediate experience is a matter of life and death” (1997e, p. 274).

According to Vygotsky, psychology needs (1) to separate basic psychological concepts from sensory perceptions, i.e. develop strictly scientific concepts (1997e, p. 273); and (2) to create specifically psychological apparatuses and methods for studying psychological objects indirectly but reliably. Vygotsky believes that “the indirect method” in psychology should be built along the same principles as methods of history, geology, and philology. None of these disciplines has immediate access to its object: history to past events, geology to the formation of terrestrial structures, and philology to ancient languages as living modes of expression. But practitioners of these sciences study these objects quite successfully by means of systematic analysis of “traces”—historical documents and artifacts in history, exposed structures in geology, texts and inscriptions in philology. Through indirect observation and analysis we can offer more powerful explanations of objects. “We do not share the ant’s immediate experience of chemical beams” (an example from Engels), nor do we possess the immediate experience of the French revolution that an eye witness would have had, but “we know the nature of these beams better than ants do” and we have a better understanding of the French Revolution than would be possible without historical distance (Vygotsky, 1997e, p. 274, pp. 271–272). Similarly, Vygotsky argues, we can acquire a better understanding of childhood than a child has.⁶

3.4.4. Challenges for Marxist psychology

Vygotsky’s prescriptions apply to all kinds of psychology that aspire to be scientific. He notes that actual methodologies will take different forms in different countries, since societies impose different practical demands on researchers (1997e, p. 332). He predicts that in the Soviet Union scientific psychology will be based on Marxist philosophy. Vygotsky genuinely embraced Marxism intellectually and carefully studied “the classics,” and he consequently found the work of many Soviet psychologists unsatisfactory from a Marxist perspective. He articulates the following “to do list” for Marxist psychologists.

(1) Marxist psychologists should clarify their relationship with Marxism. They should focus on *the problems* that Marx and Engels addressed and on their *methods of reasoning*, rather than the doctrines arrived at by these methods (1997e, p. 313, pp. 331–332). Psychology needs a “formula” that can guide research (1997e, p.

313)—that can enable scientists to *discover* dialectical principles in nature, as opposed to imposing them top-down (Engels qtd. 1997e, p. 330). Vygotsky stresses that Marx and Engels do not offer such a formula, because they do not address strictly psychological knowledge. Yet they do offer a productive method of constructing a scientific hypothesis, which can be adapted to the needs of particular disciplines (Vygotsky, 1997e, p. 331). Vygotsky admonishes that psychologists should not attempt to extract a psychology from the repository of general truths given by *dialectical* materialism. Instead, he claims, they should focus on *historical* materialism as a model of reasoning. The goal of psychology is to create its own *Das Kapital*—“a theory of psychological materialism” (Vygotsky, 1997e, p. 331).

(2) Marxist psychologists should construct a *grounding concept* of their methodology. They need to conceptualize (i.e. define hypothetically) the relationship between the mind and the body (1997e, p. 314). The grounding concept of a materialist paradigm must isolate a property common to both. As a prerequisite, Marxist psychologists must clarify their philosophical assumptions, i.e. sort out the distinctions between (a) materialism (Feuerbach) and idealism (Husserl); and (b) ontology (body and mind) and epistemology (subject and object).

Since Marxists aim to study mental phenomena objectively, i.e. independently of the subject’s cognition, they need to define the place of subjective experience in scientific psychology. Vygotsky claims that the subjective is “an illusion”—a combination of at least two objective processes, just as a reflection of a table in a mirror depends on the existence of a physical table and on the laws of catoptrics (1997e, pp. 327–328). Psychology should study those objective processes that enable reflection of life in subjective experience. It should exclude subjective experience as a source of scientific knowledge, because introspection does not tell us anything about the material, causal processes that drive the psyche. Following Pavlov, Vygotsky asserts:

If in psychology appearance and being were the same, then *everybody would be a scientist-psychologist* and science would be impossible. Only registration would be possible. But, obviously, it is *one thing* to live, to experience, and *another* to analyze. (1997e, p. 325)

As a potential grounding concept of Marxist psychology, Vygotsky considers “reaction”—a core concept of the “reactology” that had been developed by Kornilov, the head of the Moscow Institute of Psychology, under whose formal supervision Vygotsky worked from 1924. “Reaction” was a concept broader and (so it seemed) more fruitful for psychological research than the more narrow, neurophysiological concept of reflex. Elsewhere Vygotsky (1928) criticizes Kornilov for failing to define precisely a psychologically relevant reaction (as opposed to, for instance, an inflammation in the body). Yet in *The Crisis* he approves of Kornilov’s “general plan” (1997e, p. 332).

(3) Vygotsky does not clearly state what explanatory principle should complement “reaction.” He considers it a task for psychologists to explain what causal relations exist between psychological behavior and the environment. To discover these relations, he suggests that psychologists should employ “the inductive-analytical method” upon the model of Pavlov and Marx (1997e, pp. 318–320). This method consists in identifying an object in reality (e.g. salivation in dogs) that corresponds to an appropriate unit of analysis (e.g. the conditioned reflex). The detailed empirical study of such an object reveals functional relations between its constituents. Moreover, these relations will obtain for a broad range of

⁶ Vygotsky’s later work provides examples of more concrete applications of these general ideas. See, e.g., R. E. Levina’s (2001 [1968]) description of Vygotsky’s experiments on egocentric speech in children, as well as Vygotsky’s own interpretation of these experiments in *Thought in Language* (2005a [1934]).

equivalent objects. Psychologists have not yet found such a unit—“the cell of psychology”—that would disclose “the mechanism of one reaction” and thus provide “the key” to psychology as a whole (1997e, p. 320).

4. Context

Vygotsky's argument about the crisis was not just a speculative exercise in philosophy and history of science. It was a form of action in response to specific social conditions in the Soviet Union in the 1920s. This context is important because it provides the exigency for Vygotsky's argument. It also helps to explain his uncompromising, and sometimes rather unsubtle, position against “the idealists.” Notably, Vygotsky started his own intellectual career as an idealist, who, *inter alia*, was fascinated by the problem of action in Shakespeare's *Hamlet* (1971 [1915–1925]).⁷ In *The Crisis*, in contrast, he criticizes such thinkers as Dilthey who envision psychology as “Shakespeare in concepts” (1997e, p. 307). What can account for this change of perspective?

In this section, I put Vygotsky's argument about psychology in the context of his social and political thinking. He saw psychology not only as a cognitive, but also an ethical project. At the time of writing *The Crisis*, he was optimistic about the prospects of Soviet society and of Soviet science.⁸ He was committed to the cause of social improvement, and he saw psychology as a means to this end. Below I attempt to clarify the deeper social agenda that determined Vygotsky's vision for scientific psychology. I focus on what choices he had made in his professional career (Section 4.1) and on what social and political views he had held, as much as we can glean them from his writings of the period (Section 4.2). In particular, I discuss his references to the ideology of social renewal in *The Crisis* and in *Pedagogical Psychology* (2005b [1926]), a work that contains close textual similarities to the conclusion of *The Crisis*.

4.1. A psychologist engagé (1919–1927)

Vygotsky's professional activities in the years preceding *The Crisis* reveal his commitment to a socially relevant psychology. His ideas about the discipline evolved in the context of vigorous pedagogical, cultural, and administrative activities—in 1919–1924 in his hometown of Gomel and since 1924 in Moscow.⁹

Ravished by wars, the Soviet Union faced the task of building an economy, which depended on a qualified and motivated population. The Revolution brought social liberation to numerous Russian peasants, who streamed to towns in order to learn skills—including pedagogical skills, so that they could return to spread literacy in the villages. Many came to the newly established Normal College in Gomel, where Vygotsky was teaching and where he started to do research in psychology. There, in daily interaction with students and teachers, he developed a sense of psychology as an instrument for social change.

When he moved to Moscow, Vygotsky committed himself to another social cause—the education of abnormal children, with whom he had probably first started working in Gomel (Luria, 1982, p. 26). As a consequence of the civil war, epidemics, and starvation, Russia counted an unprecedented seven million homeless

orphans and many children with special needs (Ball, 1993, p. 229). In 1924, Vygotsky was appointed Director of the Abnormal Childhood Section of the Children's Social Security Department (a division of the People's Commissariat of Education). In this position, he worked with abnormal children, developed techniques for teaching them, and organized research and pedagogical activities that would help integrate them into society. According to M.G. Yaroshevsky (2007), Vygotsky personally observed and assessed hundreds of children, and he led extremely popular clinical analyses of children in the Experimental Institute of Defectology (Vygotskaya & Lifanova, 1996).

In 1925, Vygotsky represented the USSR at the International Conference on the Education of the Deaf in London. In 1925–1926, he founded a research laboratory of abnormal childhood—later the Moscow Institute of Defectology, which he headed until his death. Vygotsky's view was that organic defects amounted to social abnormalities, since they affected how the child was treated in, and related to, society. Vygotsky believed that only in a socialist society could problems of abnormal childhood be solved.

Vygotsky's exasperation with idealist psychology resulted in part from the dramatic discrepancy between practical life and academic psychology that he witnessed in the first years after the Revolution. While society was desperately trying to develop an infrastructure to meet basic human needs, introspectionist psychologists, he felt, were contemplating their private experiences. Vygotsky insisted that psychological knowledge be connected to life. Teaching a deaf child to communicate was an impetus that drove him personally and that he also perceived as “the main driving force” of the crisis in the discipline (1997e, p. 305).

4.2. Vygotsky and Soviet ideology

In his interpretation of Marxism, Vygotsky rejects biological and social determinism (unlike the Soviet ideologues). He believes that humans possess freedom, which he understands as the psychological power to change the world and oneself (cf. Vygotsky, 2006b [1931], pp. 323–342). Marx and Engels express this idea of freedom by stressing that humans create tools, social relations, and their own consciousness; they can fathom the laws of historical development and rationally transform society. In a similar spirit, Russian nineteenth-century progressive thinkers had tended to associate political liberation with the rise of “the new man” (cf. Yaroshevsky, 2007, p. 5).

In the end of *The Crisis*, Vygotsky appeals to the quest for self-creation as the ultimate rationale for scientific psychology:

Our science could not and cannot develop in the old society. We cannot master the truth about personality and personality itself so long as mankind has not mastered the truth about society and society itself. In contrast, in the new society our science will take a central place in life. “The leap from the kingdom of necessity into the kingdom of freedom”¹⁰ inevitably puts the question of the mastery of our own being, of its subjection to the self, on the agenda. In this sense Pavlov is right when he calls our science the last science about man himself. It will indeed be the last science in the historical or prehistorical period of mankind. The new society will create the new man. When one mentions the remolding of

⁷ *Hamlet* held Vygotsky's attention for all of his adult life. He took a copy of the play to the hospital where he would die from tuberculosis in June of 1934 (Vygotskaya & Lifanova, 1996). Possibly, for Vygotsky choosing a practice-oriented psychology was a deeply personal response to the problem of action that he found expressed in *Hamlet*.

⁸ *The Crisis* was written at the time when Soviet society enjoyed relative pluralism and economic prosperity (which resulted from the New Economic Policy, 1921–1929, that allowed small private enterprise). Intellectual discussion and scientific inquiry flourished, until in the late 1920s and early 1930s the sciences became increasingly subjected to central control, politicization, and repression (Petrovsky, 2007; Yaroshevsky, 1992, 1994).

⁹ For a full account of Vygotsky's biography see Vygotskaya & Lifanova, 1996, whom I follow here, as well as Dobkin (qtd. Levitin, 1990), Kozulin (1990), van der Veer & Valsiner, 1991 and Yaroshevsky (1989), Yaroshevsky (2007).

¹⁰ Here Vygotsky quotes Engels' famous expression from *Anti-Dühring* (1978 [1878]), p. 264. Trotsky mentions this expression in “Revolutionary and Socialist Art” (2005 [1924]), ideas from which Vygotsky evokes in this passage.

man as an indisputable trait of the new mankind and the artificial creation of a new biological type, then this will be the only and first species in biology that will create itself. . . (1997e, p. 342)

Vygotsky concludes his other major works of the period, *Psychology of Art* (1925) and *Pedagogical Psychology* (1926), with similar appeals to social ideals, which exhibit clear textual parallels to the passage above. In *Pedagogical Psychology*, this appeal takes the form of a direct, lengthy quotation from Trotsky's "Revolutionary and Socialist Art" (2005 [1924]). In the passage Vygotsky quotes, Trotsky declares that in the socialist society of the future.

Humankind, the frozen *homo sapiens*, will again pass into a radical reworking and will become, at its own hands, an object of the most complicated methods of artificial selection and psychophysical training. . .

Man will set himself the goal to master his own feelings, to elevate his instincts to the height of consciousness, to make them transparent, to stretch the nerve wires into the hidden and the unconscious, and thereby elevate himself to a new level—so as to create a "higher" socio-biological type, if you will, of a superman. (qtd. Vygotsky, 2005b, pp. 398–399)

This quotation, openly attributed to Trotsky, remains one of the most explicit testimonies of Vygotsky's political views, which he avoided expressing in his later writings (Davydov, 2005a, p. 654). He had good reason for reticence: *Pedagogical Psychology* was banned shortly after its publication (the ban was lifted only in the late 1980s, and the book was republished only in 1991; see Davydov, 2005b; Vygotskaya & Lifanova, 1996, p. 96; cf. Kurek, 2004).

We may never know the actual role that Trotsky played in the genesis of Vygotsky's ideas, but we can make a few plausible conjectures. Vygotsky may have been attracted to Trotsky because of his interest in art and theatre. In *Pedagogical Psychology*, Vygotsky quotes Trotsky in support of an idea that is crucial to his own conception of development—that life should be creative throughout, and that the creative energy that fuels any human activity is the same energy that fuels art. Both Vygotsky and Trotsky anticipate that the boundary between different kinds of production—technology, psychotechnics, pedagogy, art, everyday living, etc.—will be blurred as man attains the optimal social conditions that will fully liberate his potential for cultivating the environment and himself.

Yet, for all the resonances between the two texts, we hardly have enough ground to claim a deep affinity between the authors.¹¹ Vygotsky and Trotsky belong to the same ideological culture, rooted in the romanticism of the early Revolution, which gave birth to a common rhetoric, aesthetic, and social views. It is also important to consider the genre of the text in which Vygotsky quotes Trotsky. *Pedagogical Psychology*—initially a course of lectures—was addressed to the distinctive audience of young Soviet teachers, who worked under enormously difficult conditions (Vygotskaya & Lifanova, 1996). Their work depended on enthusiasm, and it is not surprising that in addressing this audience Vygotsky turns to Trotsky, one of the most prominent rhetors of his time.

Trotsky's "Revolutionary and Socialist Art" is a blatantly rhetorical work. Trotsky hardly ever gives reasons for why the future society will develop according to his predictions. Instead, he presents cascades of promises that amplify the vision of the future and make it more enticing. He declares that in the future "an average human type will rise to the level of Aristotle, Goethe, and Marx. Over this mountain range higher peaks will tower" (2005, p. 300). Never does he question what may warrant such a transformation.

Trotsky belongs to the tradition of utopian, mythological thinking that has been an integral part of Russian political history (cf. Livshin, 2004, p. 4, pp. 45–46). In contrast, Vygotsky is interested in explaining in scientific terms on what grounds progress in human nature and society is possible. Much of his work after 1927 addresses this problem.

The fact that Vygotsky echoes Trotsky's language in *The Crisis*—a serious and technical text, designed as a manifesto for psychologists—underscores his earnest faith in socialist ideals.¹² He insists that psychology explain the psyche in materialist, causal terms because only this kind of explanation can empower societies to improve the lives of concrete groups of people—children, abnormal individuals, workers, teachers, authors, artists, filmmakers, and criminals. Vygotsky acknowledges the idealists' worthy aspirations—to "defend the independence of the spirit" (dukha, 2006a, p. 154). Yet, firmly grounded in his specific historical situation, he concludes that more mundane humanistic goals—such as spreading literacy to the villages—are primary.

Besides practical necessity, Vygotsky is driven by revolutionary romanticism, which promises universal human flourishing in the end. Within this context, he does not see materialist psychology as a reductionist endeavor, but as an immensely ambitious, painstaking process of explaining the most complex in the human being. He admits that this process will take extremely long time and a concerted effort of many researchers, because the mind is "the most complicated of all things in the world and least accessible to investigation" (1997e, p. 328).

5. Relevance

History has put Vygotsky's predictions about the future of psychology into perspective. He underestimated the importance of humanistic approaches to psychology—in particular, to psychotherapy, a form of applied psychology, which Vygotsky acclaimed in *The Crisis*. In his discussion of applied psychology, he did not consider psychotherapy in any detail. (He must have known this practice at least from psychoanalysis; "psychiatry," for Vygotsky, dealt with severe pathologies.) He might have associated the need for psychotherapy with bourgeois society, where individuals were alienated from the social order, as Marxists believed, and thus were more prone to suffer from conflicts with societal norms. Whatever political changes have occurred on the map of Europe, today psychotherapy forms a stable component of healthcare in Western countries, and it constitutes one of the most important contributions of psychology to society.

Despite Vygotsky's criticism of humanistic approaches, psychotherapists of various orientations have widely acknowledged the importance of empathetic understanding in the patient-therapist relationship (e.g. Sue & Sue, 2008). Some strands of psychotherapy, such as Rogerian and phenomenological approaches, stress empathetic understanding as the primary condition of treatment (Cooper, O'Hara, Schmid, & Wyatt, 2007; Owen, 2007).

Vygotsky failed to address a related issue: How can psychology account for the experiences of a unique individual as opposed to generic descriptions of human cognition, behavior, and development? Vygotsky's student Luria acknowledged the importance of this distinction. After Windelband, he termed it "idiographic" and "nomothetic" approaches to psychology (Cole, Levitin, & Luria, 2006, p. 23).

Vygotsky astutely observed that psychology in his time faced the challenge of reconciling the psychology of the individual and

¹¹ Cf. Yaroshevsky (1993) denies a close intellectual connection between Vygotsky and Trotsky in his polemical response to Etkind (1993), who argues that Vygotsky was strongly influenced by Trotsky's work in this period. For more on Vygotsky's social views at the time of writing *The Crisis*, see Zavershneva (2009).

¹² For other evidence of Vygotsky's political views in this period, see Zavershneva (2010, p. 24).

social psychology. This challenge is still with us. The two fields remain separate in mainstream academic practice. Today, increasingly more psychologists are interested in bridging this divide, and many seek inspiration and guidance in Vygotsky's cultural-historical theory (e.g. Cole, 1996; Frawley, 1997; cf. studies of distributed cognition, represented e.g. in Salomon, 1993).

Vygotsky's views on "general psychology" as a solution to the crisis deserve special consideration. He was right in predicting that mainstream research in psychology would develop along the lines of the natural sciences (see Section 3.3). However, he was wrong in insisting that genuine progress in psychological science can be achieved only if the discipline adopts a single top-down paradigm. Contrary to Vygotsky's predictions, no such paradigm has ever emerged.

Although Vygotsky overestimated the importance of central planning, he did raise a problem that is highly important for contemporary psychology, or, more broadly, for any discipline concerned with positive knowledge. It is a problem of the *integration* of knowledge—of how specific results of specialized disciplines can be synthesized in a common framework. Today many psychologists (e.g. Sternberg, 2004; Yurevich, 2009) express a concern, not dissimilar from Brentano's, that psychological research has split into many specialized fields. Moreover, the work done in psychology is rapidly augmented by the research in the other cognitive sciences and the neurosciences. There is every reason to believe that specialization of research will only increase with time. Yet the achievements made in various sub-fields of psychology and in related disciplines increasingly pertain to one another. Already in the 1920s, Vygotsky acknowledged the gravity of the problem. We may apply to himself the characterization that he applied to Freud: He may have answered the question wrongly, but he asked it correctly (1997e, p. 266). How do we understand the integration of knowledge in psychology? In practice, how do we build integrative frameworks?

A detailed discussion of this issue is due elsewhere. Here I would like to emphasize that in *The Crisis* Vygotsky pioneered a rigorous methodological reflection on the development of knowledge in the discipline. *The Crisis* can inspire and stimulate those who are interested in addressing this issue today. I propose that we can begin profiting from Vygotsky's reflection by evaluating his own practice as a historian of knowledge in psychology.

One of the central challenges that Vygotsky faces in *The Crisis* is the challenge of *understanding* the recent advances in the discipline (1997e, pp. 236–237). However, he puts more effort into building a large-scale theoretical account of how knowledge in psychology develops and should develop rather than into a close, methodical analysis of the actual theories and research.¹³ Here he can be criticized on two distinct counts. First, he does not develop his conceptual tools of analysis with sufficient precision. For example, his distinction between "materialist" and "idealist" psychologies—although it allows him to identify some deep premises in other psychologists' thinking—does not allow him to represent conceptual structures in their work with any subtlety. Similarly, his distinction between "the grounding concept" and "the explanatory principle" is insufficiently detailed (and hardly adequately defined) to facilitate any thorough analysis.

Second, Vygotsky tends to favor theory over analysis proper. On the most general level, he delivers four theses on the problem of the development of knowledge. (1) He maintains that knowledge inherently tends towards integration (1997e, p. 240). (2) He emphasizes that scientific knowledge is systemic (i.e. scientific discoveries are embedded in frameworks of concepts, assumptions,

methods, and research goals) (e.g. 1997e, p. 259). (3) He stresses the importance of analyzing systems of knowledge. He claims that any attempt at integration should start with a close methodological analysis of conceptual frameworks in order to determine if different concepts and research results are compatible (1997e, pp. 264–267). (4) Vygotsky believes that the integration of knowledge depends on the scientists' ability to construct effective higher-level concepts (1997e, p. 247; cf. *ibid.*, p. 329; 2006a, p. 172). These ideas are interesting and important, but how are they related to the actual practices of psychologists?

Although Vygotsky *illustrates* each of the above theses with examples from the history of psychology and other disciplines, he hardly adduces enough empirical evidence to *justify* these theses. Given that he stresses the importance of analyzing systems of knowledge, it is remarkable that he does not sufficiently *present* his own analysis of other psychologists' work in his text (see Section 3.1). Vygotsky's theory of the development of knowledge in psychology does not constitute a bona fide grounded theory, which he himself declared as his goal (1997e, pp. 236–237). If we conceive of reasoning as a hierarchy of three levels of abstraction (cf. Vygotsky 1997e, p. 329), we might conclude that Vygotsky's reasoning in *The Crisis* (a) lacks the *low level* of concrete analysis of other psychologists' work and, consequently, (b) is deficient at the *middle level*, at which he would relate his more abstract ideas about psychology to the specific developments in the discipline. Without diligent work at the lower and middle levels, one runs the danger of "jumping over the horse" and, moreover, placing oneself in the company of straw men and windmills.

Vygotsky's ideas on the development of knowledge can be highly valuable for historians of psychology if they are rephrased as a set of questions, such as: (1) What are historical instances of the integration of knowledge in psychology, when the results of several specialized areas have been incorporated into a common framework? In what circumstances did the integration succeed, and in what circumstances did it fail? (2) How can we effectively represent conceptual structures that underlie psychological approaches? (3) How do we explain the relationship between different approaches, synchronically and diachronically? (4) What processes of concept formation (including the creation of higher-level concepts) have taken place in psychology in those instances when the integration of knowledge has been achieved? The challenge for historians of psychology is to develop methods and instruments that can enable us to answer these questions in a way better than Vygotsky did in *The Crisis*.

Acknowledgements

I am deeply grateful to the late Malcolm D. Hyman and to Michael Cole for their feedback on my thinking about psychology past and present; to the editors and reviewers for their excellent comments on an earlier draft of this paper; and to Andreea Ritivoi, Chris Neuwirth, and Ashley Karlin for their help with editing.

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¹³ Vygotsky analyzes such theories and research in more detail elsewhere, such as in his prefaces to the Russian translations of Freud, Bühler, Koffka, Köhler, Thorndike, and Piaget (see, e.g., 1997b and 1997c). But he does not, strictly, aim these analyses to substantiate the claims he makes in *The Crisis*.

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