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A PSYCHOLOGY FOR PEDAGOGY
Intelligence Testing in USSR in the 1920s

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This article examines a case of intelligence testing conducted in the mid-1920s, while considering the broader political and scientific context of Soviet life. Guided by questions about the status and influence of mental measurement in Russian society, previously and after the revolution, as well as asking about the main actors in the fields linked to testing, such as psychology, pedagogy, and pedology, during this tumultuous period. To answer these questions, journals and difficult-to-access archival sources were used, which provided evidence regarding the enthusiasm psychological testing had on scholars in the 1920s and the institutional support they received for their surveys. The article offers some hints concerning why this was so and why this situation changed completely a decade later.

Keywords: pedagogy, psychology, pedology, mental tests, 1920s USSR

The objective of this article is to present new information with regard to the history of mental measurement in Russia, working mainly on two levels. On the one hand, I will present a concrete case of psychological testing that will be instrumental in the search for specific aspects of the use of psychological tests in this country, based on historical sources that are difficult to access. Thus, I will use Aleksandr Petrovič Nečaev's[1] book, published in 1925 (Nečaev, 1925), about his own method of testing and a series of experiments he conducted. The book offers interesting empirical data, including the construction of his test and the results he obtained. The present research will point toward some outstanding features of Soviet testing, like Nečaev's creation of an 10-item test, which was a shorter, combined version of two of the most popular intelligence tests of the time, Binet-Simon's (Binet & Simon, 1947) and Rossolimo's (Kovarsky, 1927). The test was aimed at evaluating the intellectual level of young preschool children between the ages of 4 and 8 years. A focus on the mental development previous to, and shortly after, the entering of school is another characteristic feature of the testing conducted in Russia.

This specific case is examined in the complex historical context of Russia in the 1920s. In the framework of this article, it is not possible to present the whole historical development of psychology or pedology. Nevertheless, a thorough study of the contemporary literature, and especially the consultation of relevant Russian and French journals, will throw a new light on the crucial role mental testing played after the 1917 October Revolution, in a country which was eager to use modern scientific devices to reform education in order to create the new kind of citizen needed for its political project. Therefore, pedagogy, pedology, and also, to a certain extent, psychology, received great attention and official support in an attempt to systematically study the infant mind. The foundation of new institutions and professional associations immersed in ambitious testing programs show this trend very clearly, together with the enthusiasm about psychological testing expressed by leading pedologists of the time. I will argue in this article that faith in "testology" in the Soviet Union was closely linked with that of pedology, the science of the child, which, in the Soviet context, was supposed to become "the revolutionary Marxist science."

However, this situation changed toward the end of the 1920s. During this time, there were

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many debates about the sense, meaning, and consequences of psychological measurement applied to children. The resistance toward testing on the part of teachers, parents, and the authorities grew until there was an official prohibition of testing practices in the mid-1930s, which became one of the specific events in the history of Russian psychology.

Although the history of the development and use of psychometric measurement is well known in the French and North American contexts (Carson, 2007), this history in Russia and the early Soviet Union remains fragmentary and vague, facing, as one main obstacle, the difficult access to archival documents. However, some work has been done in Russia and USSR on the history of psychological measurement, pointing out its own characteristics (see, e.g., the text online: Avanesov, 2000).[2] Nevertheless, the complexity of the situation makes it difficult to be fully considered in one article. For example, the growth of intelligence testing in Russia also concerned adults, particularly through the development of psychotechnics. But in my research, I deliberately focused on psychological measurement applied to children in close connection to the question of education.

The General Political Context of Russia in the 1920s

The historical period evoked in this article began when science discovered the child as a major object of study. With the beginning of the 20th century, medicine, law, and, in general, the human sciences—including pedagogy, anthropology, and psychology—started to more intensively construct knowledge about human development (Hofstetter, 2012a, 2012b; Ottavi, 2001). At a time when boundaries between these sciences were not clearly established, the activities of some of these disciplines were directed toward the study of the same new scientific object: the child and its development. However, specificities in the development of psychological and neurological disciplines would soon appear in Russia in the years during the First World War, and then increased afterward with the huge social changes induced by the October Revolution in 1917.

In order to introduce this topic, it is necessary to briefly present the specific political and social context of Soviet Russia after the revolution, a time when the country developed through different paths, increasing its distance with regard to other countries. The specific features of Soviet Russia at this time refer to such aspects as political isolation, economic bankruptcy, and social innovation. After 7 years of international conflicts, revolution, civil war, and famine (1914 to 1921), one priority was the reintegration into society of millions of children and teenagers who had been left on their own (the so-called *besprizorniki*[3]). This was not an easy task in a country that was economically weakened and in search of bases for a new social order. The number of homeless children without school education around 1923 was estimated to be at least 2 million (Ljublinskij, 1923). Some of them were physically and emotionally in extremely bad condition—victims of war violence, malnutrition, and their aftereffects.

The major difficulties with which the educational system was confronted because of the consequences of the civil war and the low economic development of the Soviet Union were the lack of school equipment and trained teachers. Moreover, as Sirotkina and Smith (2012) pointed out, two of the basic concerns of the government were to eradicate illiteracy and to raise a new generation of children, untainted by prerevolutionary bourgeois values. This could only be achieved through centralized mandatory schooling. Upbringing and school education became a "state affair." The Soviet Union had to educate the entire nation and inculcate new social values from the time the child was in the cradle. Authorities wanted to achieve a prompt ideological and cultural transformation; they could not entrust such a task to parents and relatives alone. These factors help us to understand why, in the 1920s, education received exceptional weight in the young socialist country. A project of fast and radical cultural reconstruction had to be started, compatible with the ambitions of the new socialist principles. Pedology, the science of the child, served the sociopolitical plan, raising expectations for the development of an efficient educational policy. Encouraged by the Bolshevik authorities, this science was supposed to contribute to the creation of a "New Man," linking theoretical research on the child to direct practice in the educational system. Thus, they expected from pedology rapid progress in de-

signing a child for a new type of citizen. As a new science introducing innovative methods and practices, pedology was a discipline that used psychical and physical measurements on a large scale. Quantitative methods (statistics) that were usually necessary when working with tests and questionnaires were perceived, at that time, as signs for an "objective science." The laboratory for doing this kind of experimentation took the size of the nation. The postrevolutionary situation enforced a strong need for a broader knowledge about the child and helped determine educational policy in the Soviet Union in the 1920s.

The Scientific Context of Pedagogy, Pedology, and Psychology: From International Exchange to Isolation

Before the 1917 Revolution, the Russian intelligentsia was already calling for a drastic reform of the educational system. One example is Lev Tolstoj (1828–1911), one of the precursors of the worldwide Movement for the New Education. Toward the turn of the century, Froebel's ideas were popular among Russian reformers (Valkanova & Brehony, 2006), such as the efforts of Piotr Lesgaft (1900/1991),[4] a pedagogue involved in promoting Froebel's ideas on education, who taught in the Froebelian Society in St Petersburg. Abundant literature on child education and study had been produced since the end of the 19th century by authors such as Nikolaj Pirogov (1861),[5] Konstantin Ušinskij (1867),[6] Petr Kapterev (1915),[7] and Ivan Sikorskij (1879).[8,9] In 1879, the doctor Sikorskij (1842–1919) was one of the first Russians to start experimental studies concerning the child in the school context. His book on the fatigue caused by the intellectual work of the pupil was published in Paris but did not receive much attention in Russia. The experimental research was not yet "fashionable." Between the two revolutions (1905 to 1917), pedagogues pursued mainly a humanistic project in educating the Russian population as a way to democratize the country, considering pedagogy as an art rather than an objective science and showing no general interest in mental testing in schools.

However, already in prerevolutionary Russia, there were approximately 50 psycho-pedagogical laboratories devoted to child and education studies in Moscow and St. Petersburg, most of which had been founded under the initiative of scholars who had studied abroad (Fradkin, 1990). Moreover, the interest in child study in Russia can be observed through the early congresses dedicated to psycho-pedagogy that took place before the outbreak of the First World War; at least five such congresses were organized by Russian specialists in education and child psychology between 1906 and 1916.[10]

The spread of experimental psychopedagogy and pedology in Russia started mainly with the initiatives of Vladimir Behterev (1857–1927), Alexandre Nečaev (1870–1948), and Alexandre Lazurskij (1874–1917) in St. Petersburg, and Gregori Rossolimo (1860–1928) and Alexandre Bernštein (1870–1922) in Moscow. This first generation of preeminent Russian scholars before 1917 had a medical background, with studies taken in the main European laboratories of experimental psychology (mostly Wundt's in Leipzig). They were in regular contact with Binet in Paris (1910)[11], Claparède in Geneva (1910, 1912)[12], or Hall in the United States (1909),[13] to quote only some of them, according to letters found in the Moscow Scientific Archive of the Russian Academy of Education (RAO)[14] archives and the reports of some foreign journals (*L'Année Psychologique*, *les Archives de Psychologie*, *The New Era*). Claparède was particularly aware of what was going on in Russia in the fields of psychology and pedology. As early as 1905, in his book *Child Psychology and Experimental Pedagogy*, he referred to Russian pedology and its different laboratories.

By the time of the revolution (1917), the second generation of scholars involved in the study of the child had various disciplinary backgrounds, such as Pavel Blonskij (1884–1941), who had training in pedagogy. He worked in close collaboration with Nadežda Krupskaja and Anatolij Lunačarskij, who introduced the new Soviet school program. Another member of this generation was Mihail Basov (1892–1931), a psychologist and a former student of Lazurskij. Beginning in 1919, education was made compulsory,[15] secular, and free, with the Unified Labor School,[16] where the People's Commissariat of Enlightenment managed all types of schools and was in charge of the whole education system. The Commissar appointed by

Lenin was Lunačarskij, who worked together with two deputy commissars: Nadežda Krupskaja, Lenin's wife, and Mihail Pokrovskij.[17] This triumvirate laid the foundations of Soviet education and culture until 1929 (Fitzpatrick, 1979) and created "a new type school" (Fradkin, 1990).

The new educational policy became a major focus of attention by governmental authorities as they sought to construct the new nation of the Soviet Union. The Unified Labor School was organized on two levels, the first for children from 8 to 13 years old and the second for those from 13 to 17. In Petrovskij's (1991) opinion, it is impossible to understand the development of Soviet and Russian psychology without addressing the strong link it had with pedology. The field of pedology was part of a cross-disciplinary history of the social-educational and psychoneurological disciplines, which were emerging at that time, including psychotechnics and hygienism. After 1917, pedological institutions depended on three ministries: Health,[18] Enlightenment,[19] and Transport.[20]

In the 1920s, pedology became the leading movement in child and education studies and served to coordinate all other disciplines related to child research. Thus, the particularity of Soviet psychological measurement is that it was firmly connected to pedology and its singular fate (Etkind, 1992; Fradkin, 1990). Scholars from different disciplines shared an interest in the child, considered as a scientific object. To them, psychological testing was of theoretical and practical importance. Although school orientation was the main purpose, the method of testing was also seen as an experimental modern method, essential for acquiring a better knowledge of all aspects of the child (psychical, physical, and behavioral).

After the revolution and continuing through the pre-Stalinist decade in Soviet Union, the scientific community of psychologists that remained in Russia[21] generally embraced the political changes with hope, sometimes even with enthusiasm. Some expected a more democratic turn; others were ready to contribute to the process of building a new society. This global optimistic orientation of the researchers was favorable in creating an atmosphere for bringing forward ideas about progressive education and New School methods based on experimental research. According to Fradkin (1990), this period was a real creative "think tank." It served to modernize the educational system in the 1920s in the Soviet Union and offered an advantage over the common Western models:

> Like mushrooms after the rain, a whole range of projects on the new type school were emerging, and different types of educational institutions were cropping up . . . school communes, youth colonies and experimental pioneers camps schools wherein the practical know-how for creating the new type school was being born. (Fradkin, 1990, p. 10)

From before the First World War and until the early 1930s, communication with Western scientists was easy and frequent through numerous international congresses on the study of childhood. Foreign scholars and educators visited the pedagogical institutions of the new socialist country and reported their interest and positive impressions of the innovation in Soviet educative practices (Dewey, 1929/1964; Freinet, 1925; Washburne, 1928). Carlton Washburne (1928[22], p. 12), for example, after his trip to the Soviet Union in 1927, concluded his article in *The New Era*[23] with these words:

> Russia sees in its schools its own future. On the success or failure of its educational systems depends the success or failure of communism and the Soviet form of government. This, Russia realizes poignantly. I wonder when the other nations of the world will realize equally profoundly the fact that in the world's state schools the world's future is being determined.

However, this enthusiasm was not shared by many of the teachers in the Soviet Union, especially the primary school teachers who had been in conflict with the program of the Unified Labor School since 1919, as "in the 1920s, the great majority of teachers were non-Marxists and religious believers" (Fitzpatrick, 1979, p. 18). A mutual distrust existed between the teachers and the ruling Bolshevik body just after the revolution of 1917. The relations between teachers and the authorities remained difficult until the 1930s. Perhaps because of this resistance, the authorities turned to university theorists coming from psychology and experimental pedagogy to develop a completely new educational system.

The Educational System and Mental Testing in the Soviet Union

The reorganization of the whole educational system after 1917 probably accelerated the

mental testing movement. A classification in order to find a scale to define normality for child behavior in society, and to measure individual intellectual capacities, appeared as a necessity when dealing with the population of the Soviet Union, which was a huge country in both land mass and population.

The different professions represented at the 1st All Union Soviet Congress of Psychoneurology, held in January 1923 in Moscow, illustrated how permeable the boundaries between the different sciences were at that time and how each discipline was experimenting with the same new quantitative methods to explore the very same scientific object: the child. According to the *Pedologičeskij žurnal* [*Pedological Revue*],[24] the Congress of 1923 was composed of physicians (64%), pedagogues (24%), psychologists (10%), psychotechnicians (2%), and criminologists. The section of pedology presented about 50% of its work in psychology, 20% in psychiatry, 20% in neurology, and the rest scattered among physiology of the nervous system, labor psychophysiology, and criminological psychology. The first issue of *Pedologičeskij žurnal* called for contributions to the pedological section of the forthcoming congress in January 1924 by proposing the following topics (Rybnikov, 1923[25]):

1. Pedology as a method.
2. The method of investigation of the child personality.
3. The actual child in relation with the conditions of the revolutionary period.
4. The pedologist-consultant, his training, and function.
5. The gifted child.
6. The problem of teaching; the psychotechnics of the teacher's work.
7. Pedology and the choice of a profession.
8. Elaboration of standardized methods of the physical investigation of the child.
9. Organization of the pedological practice and laboratories.
10. Heredity and eugenics.
11. Social pedagogics based on pedology.

It can be easily seen how important the development of methods for the evaluation of intellectual capacities applied to schoolchildren was to the organizers of the congress, an interest linked to school and professional orientation. The *Pedologičeskij žurnal* also reflected the necessity of a better understanding of the child's nature and the importance of developing a more systematic study of the infant.

Methods, Institutions, Actors

The most frequently used methods for these child studies were the tests of Binet-Simon, Rossolimo (his psychological profiles), Nečaev (who adapted Binet's and Rossolimo's tests and whose test is the focus of this case study), and Lazurskij (his Seven Stars profiles). Beginning in 1921, the Central Pedological Institute in Moscow was in charge of coordinating the disciplines studying the child's nature, with four main sections: psychology, anthropology, physiology, and pedagogy (Basov, 1923).

The 2nd Congress of Psychoneurology, organized in Petrograd in 1924, was entitled "Pedology, Experimental Pedagogy and Psychoneurology." According to the program (Anonymous, 1924),[26] the works presented at the conference offered evidence of an evolution in the field and the expansion of pedology as a science. It was at this moment that psychological measurement became a central concern. It represented a turn toward a kind of research approach in which all sciences in the Soviet Union were reconsidered on the same level: as objective materialistic dialectical science,[27] fighting against idealistic, mechanistic, and traditional science. At the congress, Konstantin Kornilov (1879–1957) replaced Georgij Čelpanov (1882–1936) as head of the Moscow Institute of Psychology. The reason for the reproach against Čelpanov was his idealistic approach toward the human psyche, based on introspective methods. Soviet pedologists agreed on the fact that the science of the child had to be an objective science similar to biology, and therefore rejected Čelpanov's empirical orientation.

The program of the 1924 congress gives us some hints about the contributions that were presented. A discussion about methods of investigation took place in which the different psychological measurements for practical needs, like school orientation, were evaluated and commented on. In defectology[28] and criminology, the main concern was a classification of difficult children,[29] with reports like, "Types of delinquents—degenerates based on the 2nd psychiatrical clinic data and how to struggle

against juvenile delinquency" (Pavlovskaja in Anonymous, 1924, p. 5). In the neuropathological section, the debates turned around war trauma and psychoneurosis (Zalkind in Anonymous, 1924, p. 5). In the pedological and experimental pedagogy section, the question of physical and mental normality was debated, but only a few mentioned quantitative methods in the title of their presentation. I. M. Levinson (Anonymous, 1924, p. 14) presented anthropometrical and psychometrical materials to study some of the specificities of contemporary childhood, and E. V. Gurjanov[30] was interested in quantitative measures of ability in normal and defective children (Gurjanov in Anonymous, 1924, p. 19). V. L. Rubačeva (1924) offered results on normal preschool children obtained through different methods, such as the Binet-Simon and Nečaev tests, and a short version of Rossolimo's test[31] (see also Anonymous, 1924, p. 23). These comments on the relations between pedology and other fields must suffice here. There is still more research needed on the links and tensions between psychology, psychotechnics, pedology, psychiatry, and mental hygiene. Some relevant information can be found in the work of Graham (1987), Grigorenko, Ruzgis, and Sternberg (1997), Joravsky (1989), and, more recently, Sirotkina and Smith (2012).

Anna Šubert (1881–1963) translated the Binet-Simon metric scale, 1911 version, into Russian, published in Moscow in 1923 (Nečaev, 1925). Her deep knowledge of the diverse methods of tests that existed worldwide during the 1920s made her an authority in the matter. According to her numerous books (e.g., her book 1922 and in Murchison 1932, for Schubert, Anna, pp. 1236–1237),[32]articles, and reviews on the matter, she mainly presented and evaluated Russian and foreign tests on giftedness, verbal and nonverbal testing, Rossolimo's psychological profiles, and Nečaev's methods.

During the same period, Rabinovič and Rossolimo-Savič (1925) were working with the Binet-Simon test to check whether the method was convenient for the evaluation of retarded children and "psychopaths." The research concluded that the method was adapted to normal and "retarded" children in schools, but that the Rossolimo test was more useful in evaluating the intellectual level of abnormal children. Moreover, their comments made clear that the Binet-Simon test was boring for young children because of its lack of illustrations.

These kinds of experiences of Soviet scholars with different types of tests did not prevent the spread of the Binet-Simon test (generally, the version of 1911), but encouraged the use of other tests such as Rossolimo's and Nečaev's. The later North American intelligence tests, like Terman's, were known, but were less commented on and less used.

Several institutions—such as The "Institute of School Methods," "a leading scientific research institute of the 1920s" (Fradkin, 1990, p. 399), with Victor Šulgin as director—also began developing their own series of tests in 1926, in order to adapt the methods to the specific needs of Soviet schools. In the mid-1920s, four leading institutions, called Central Institutions, were working for the Ministry of Education. On this first level, each of the following had one or several departments of pedology, which were in charge of developing theoretical knowledge about children in regard to teaching, learning, and testing: (a) the Institute of School Methods (the section of pedology was ruled by Rybnikov); (b) the Institute of Scientific Pedagogy of the 2nd Moscow University (with four pedological sections; Blonskij ruled the school-age section, Vygotskij, the difficult children); (c) the Pedagogical Institute of out of school methods; and (d) the Institute Herzen of scientific pedagogy in Leningrad (with Orčanskij at the head of the pedological section, and Basov, the psychological one).

On the second level, there were the regional institutions. The Department of Education in Moscow (MONO[33]) was one of these regional institutions, including the central laboratory of pedology directed by Gurjanov. It opened a special section in 1925 to control and validate the multiple tests and to elaborate new local testing methods. According to the child literature, such as the journal *Pedologija* (1928 to 1932), the commonly used mental tests were normally some variants of the Binet-Simon, the short test of Rossolimo, or the Nečaev method inspired by Binet-Simon and Rossolimo. On that level, the Child Department of the Clinic of Nervous Diseases in Moscow, directed by Rossolimo, was a part of the 1st Moscow University. Rossolimo applied and developed his own methods of testing there.

At a third level, there were the district pedological institutions, sometimes directly in place in schools (Rybnikov, 1928b). At all levels, the testing was used as a means to improve and adapt them to a certain population (from preschool age to teenagers) for educational and vocational guidance.

In Moscow, an association of testers[34] was created in 1927 (Anonymous, 1927), with Rossolimo, Bernštein[35] and Nečaev among its members. The association favored research on testing methods, in an attempt to improve and evaluate them. Once the testing method had been the object of strong criticism and depreciations in the country, the association members recognized the urgent need to get a precise evaluation of the usefulness and reliability of the tests as scientific methods. The works of the association were published in a casebook (Bernštein, Blonskij, Zareckij, Smirnov, & Šubert, 1928). In 1927, *L'Année Psychologique* (Psychological Year) presented the works included in this casebook and other similar contributions of Soviet authors (Anonymous, 1927). The journal reported on the initiative led by the Institute of School Methods in 1927, in which 13,000 children from different primary schools were tested all over the country.[36] The initiative had two main aims: on the one hand, to test the tests themselves, and on the other hand, to use the results of tests to develop new specific pedagogical methods, and, at the same time, to orient and grade children.

Bernštein (1928) wrote an article about the role of the pedological section of the Institute for School Methods in developing new objective means that could be applied in schools for the evaluation of intellectual levels. Additionally, he pointed out that during the prior 3 years (since 1925), the institute had been criticized by those who were in favor of qualitative approaches. Bernštein proudly announced that the "objective" method of testing had finally succeeded with the creation of the Moscow Testing Society. This society was officially recognized and approved at the first All Union Congress of Pedology in Petrograd (1927 to 1928). The testing commission of the institute examined the selection of test materials, studying how results differed depending on which type of test was used. Apart from this comparison and other evaluations of tests, the institute also developed new tests adapted to Soviet schools. Around 1930, about 10 research centers focused on psychological testing were created in Moscow (Huteau & Lautrey, 1999).

Before 1917, Lazurskij[37] and Rossolimo were probably the first Russian scientists that promoted their own testing methods in Russia and abroad. Their classification, aimed at finding psychological profiles, had been lauded by Claparède."[38] Thus, Rossolimo's test was also used and adapted abroad. Vera Kovarsky (1927) translated his method into French[39] and gave a copy[40] to Claparède. Rossolimo's scale sought to define normality for behavior, intellectual capacities, and gifted thinking (for reflections about norm and normativity, see Canguilhem, 1966/1979; Carson, 2003; Foucault, 1975). Lazurskij's and Rossolimo's tests had in common the original idea of showing the results in the form of a graphical representation. Unfortunately, Lazurskij's premature death left his experiments unfinished. He was about to complete a new method of observation and testing for the evaluation of different types of behavior in order to define a psychical typology. Lazurskij's "star profile" contained seven items to assess perception, memory, thinking, volition (will), movements, feelings, and creativity, and was described by Antipoff (1926) in two important European journals (*L'Intermédiaire des Éducateurs* [Educators' Mediator],[41] in Geneva, and *L'Année Psychologique*,[42] in Paris). Antipoff was the link between Russia and Western Europe, first as a student of the Institute Jean-Jacques Rousseau in Geneva from 1912 to 1916, and then Claparède's assistant in his laboratory of the same institute in 1926. Invited to Brazil in 1929, by the State of Minas Gerais, to collaborate in a school reform project, she opened child studies in Belo-Horizonte (Freitas Campos, 2003).

Rossolimo, known as a neuropathologist, psychiatrist, and psychologist, conducted his main research studying age specificities using children with mental diseases and abnormal behavior. He determined a direct correlation between behavior and the development of psychical functions (nervous activities), and made a first presentation of his "psychological profiles" at the 2nd Congress of Pedagogical Psychology, held in Petersburg in 1909. In the obituary notice he received in *Pedologija*,[43] he was praised as the most popular Russian scholar on the international scene.

His profile method was mainly a quantitative measurement of the various mental functions of personality. The results of the test were represented in the form of a chart, presenting a given personal profile with a curve. He itemized 22 functions, but also proposed a short version of 11 items. An average of psychical functions was calculated and a qualitative analysis of the profile was done to determine the relations between memory and thought, attention and volition. The shorter test was elaborated for young children of the first school level. For preschool children, there was a special test called "elementary representations."

For a qualitative and comparative study of the structure of personality, Rossolimo added clinical research data on the development of children with psychopathologies. In his work, he emphasized the important role of education and teaching for defective children to facilitate their future insertion into professional life. Therefore, he advocated a specific psychological training for pedagogues and physicians.

Mental testing at school became a commonly used means for evaluating children's intellectual abilities. Furthermore, the results obtained were also often used to compare children according to their cultural environment and family upbringing. Some of the leading pedologists of the early Soviet period, like Blonskij and Rybnikov, clearly expressed their enthusiasm and fascination for testing. In the first article of a book on tests published in 1928, entitled "Tests: Theory and Practice," Blonskij (1928) envisaged a promising future for the method but on the condition that it should be improved, at the same time criticizing Thorndike's experimentations as too simplistic. Rybnikov (1928a) gave a favorable opinion on tests: "The method of tests appears as a condition of a rationalization of the pedagogical process" (p. 31).

In fact, mental testing was applied in schools of the USSR in the mid-1920s (without strict control from the authorities and nearly any resistance), even if some scholars recommended being cautious in their application. It was not until 1929 and 1930 that controversial points of view were voiced. The wave of enthusiasm decreased after the expeditions organized by pedological institutions[44] to study children of national minorities of the Soviet Union. Upon their return, they offered the first results of their investigations (see Leopoldoff, 2012), according to which the intellectual level of non-European children was significantly lower than that of European children, an observation that led to an important debate throughout the country (Efimov, 1931). In 1931, Blonskij became much more critical about mental testing, arguing that "sometimes the pedologist turns into a sort of a testing machine and does not even look at the child" (Fradkin, 1990, p. 285). But not all expeditions were focused on test issues. For example, Luria's and Vygotskij's expeditions in 1931 and 1932, to measure capacities of native people (mainly children) of Uzbekistan, enabled them to observe the effects of about 10 years of school education and literacy program on the youth. Therefore, Luria (1991) stated, "We could see to what degree culture was influencing the formation of psychological processes" (p. 85), but at that time, they were not representative of mainstream psychology (Van der Veer & Valsiner, 1991, p. 308).

L'Ere Nouvelle[45] gave a lucid point of view on the school selection in Russia (Schreider, 1930). Quoting Washburne,[46] who, 3 years before, had declared that the "scientific methods to evaluate children's mental level in Soviet schools and the elaboration of a plan study and school programs were still in their infancy," Schreider considered that this was still a reality. He added that this situation was common in all European countries because of the low education budget. The problem in the Soviet Union was just exacerbated because of the choice of the Labor school system.

The Case Study: Nečaev and Mental Testing

For three reasons, it seems interesting, at this point, to present Nečaev's test. First, it is a case that is well documented: In a very complete Russian textbook published in 1925, written for students in psychology, he presented, with precision, the elaboration of his method, the reasons for his choice, the population observed, and the results obtained. Another reason for dealing with the work of this particular researcher is that he based his test on the two most popular tests: Rossolimo's (1909) and Binet's (1911). The third reason for having chosen this case study is to show one of the Russian specificity in child research: the experimentation with preschool children (i.e., children under 8

years, as, at that time in the Soviet Union, children started school at that age[47]).

Nečaev, from Petersburg, started his career attending lectures on German psychology (Nikol'skaja, 1997). Afterward, he went to study in some of the main laboratories of experimental psychology at that time (like that of Wundt and G. E. Müller). He founded a laboratory of experimental pedagogy in Petersburg in 1901. He was the organizer of the first congress of pedagogical psychology in 1906, for which he also organized a course on pedology (Antipoff, 1913). In 1917, he became the director of the pedagogical Institute of Samara, and in 1922, professor at the Moscow State Institute of Psychoneurology. In 1920, he was using and comparing tests with regard to their efficiency and adequacy to evaluate school abilities of children. It was in this period that he created his own testing method.

In 1925, he published a methodological book entitled *Instructions for Experimental and Psychological Study of Preschool and Schoolchildren*, explaining how to carry out testing at schools and preschool institutions. His book is an evaluation and adaptation of the Binet-Simon test of 1911, with the 1923 Russian translation of the test.

He had no problem with access to children, as children without family (besprizorniki) in orphanages were numerous, and no one would complain about them being tested. Nečaev took a group of children from 5 to 8 years from an orphanage of Samara and passed them the items of Binet-Simon's test (1911), the way the French authors had suggested to do it, except for three items (to show mouth, eyes, and nose; to define their gender; to name the running currency). The first two were dropped because they were considered too easy for children aged 5 or more years, and the third because there was no running currency in the Soviet Union when he began the experiment. The experiment lasted one and a half months.

The test was first applied individually to 38 children, 19 girls and 19 boys from 5 to 8 years old without any sign of significant giftedness or "backwardness." They were chosen according the selection criteria of their teachers and educators; the selected children were supposed to be "normal," without any specific problems. Once Nečaev had obtained the results, he analyzed the tests with regard to the following aspects: (a) perceptions (gaps on a drawing, comparison of weights and lines, comparison of pictures from an aesthetic point of view, description of a painting); (b) knowledge learned in a mechanical way (such as the months, the days of the week, the names of colors); (c) attention while repeating numbers or sentences; (d) assessment of dates and critical opinion on nonsense sentences; (e) imagination and creativity; and (f) experiments expecting specific activities (such as being about to draw or to copy; Nečaev, 1925, p. 27).

The conclusion for Nečaev was that some items in the Binet-Simon test were more relevant than others for determining variations in psychical development. He decided to keep only the most important tasks for his "10 items test," combining Binet's and Rossolimo's items. The selected tasks of his tests were as follows: (a) repeat given numbers—Nečaev standardized the task to be convenient for all children from 5 to 8 (Nečaev, 1925, p. 23); (b) repeat sentences with a different quantity of syllables, from 6 to 22 syllables in each sentence; (c) count in chronological order—Nečaev asked children of different ages to count as far as they could; for those having difficulties starting the activity, it was suggested that they count their fingers or count matches from a box; (d) count in reverse—Binet asked 8-year-olds to count from 20 to 1, but Nečaev suggested a progressive counting to all children, first from 3 to 1, then 5 to 1, 10 to 5, 15 to 5, 20 to 10, 30 to 15, and so on, until the child could not go any further; (e) comparison of objects—10 pairs of objects were recommended (without illustrations) for studying the children's representations of material things, like "butterfly" and "fly," "house" and "shed," "table" and "chair," and "piano" and "violin," as well as more abstract representations like "fighting" and "naughtiness" or "tickle or stroke"; (f) to give an esthetical appreciation to the illustrations of three pairs of human faces (see, e.g., Figure 1), taken from Binet[48]; (g) evaluate "visual nonsense"—Nečaev explained (p. 33) that the drawings were taken from the Rossolimo's collection of psychological profiles tests (as is the case of the two examples[49] presented in Figure 2); (h) finish sentences—ten unachieved phrases had to be completed, for example, "In the forest, there are flo . . ." or "Mother likes her chi . . ."; (i) finish words by giving the first

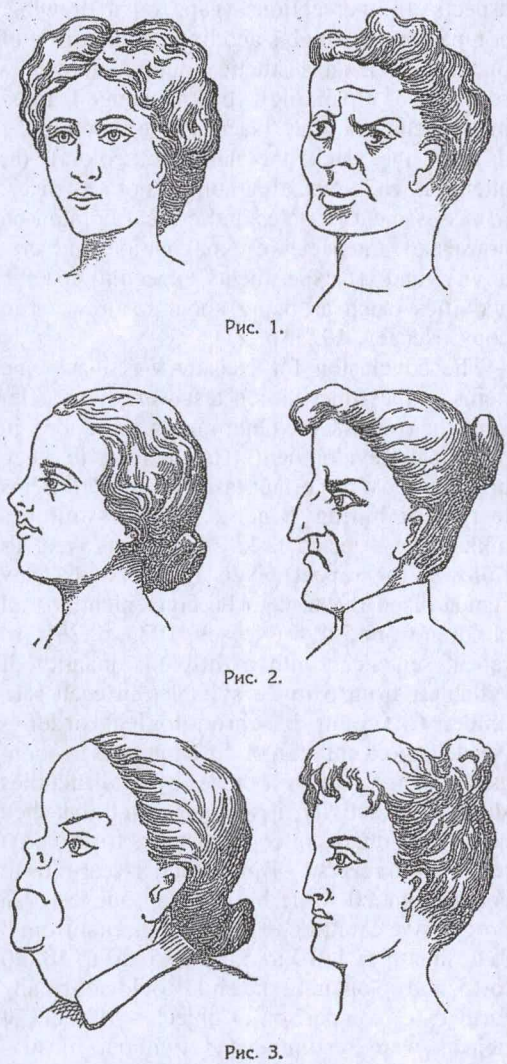

Figure 1. The three pairs of faces in Nečaev's test for esthetical appreciation used with the instruction, "Who is the most beautiful? Show me!" (Nečaev, 1925, p. 37). (Picture source: Nečaev, 1925; at the end of the book note, these illustrations are all without page numbers).

syllable—children were given 10 frequently used syllables often appearing at the beginning of a word in Russian; and (j) name colors—not four colors like in the Binet test (red, yellow, blue, green), but six colored papers (white, black, red, blue, green, and yellow) had to be identified.

Afterward, in a second series of testing, he used 529 children (262 boys and 267 girls) aged 4 to 8 years from institutions in Samara and Moscow. In this sample, there were children from five different nationalities of the Soviet Union, mostly Russian (n = 400), but also 33 Jewish, 35 Tatar, 31 Chuvashian,[50] and 30 Latvian. All came exclusively from working class families or rural regions. He analyzed the results with regard to the different level of mental abilities he expected to obtain by taking into account nationalities, gender, and ages. For each nationality, the test was applied in the mother tongue. The difference of the intellectual level measured and compared between the various nationalities remained very low. Nečaev (1925) observed that there was not a significant cultural difference in the intellectual measurement of the different groups, but an important individual variation within each group.

Moreover, as two of his 10 tasks consisted of repeating numbers or sentences, Nečaev pointed out the considerable influence of memory on the results. The 10 items used were passed in the same order as previously described. Table 1 shows the scores obtained by children of different ages for each of the 10 exercises (source: Nečaev, 1925, p. 55), and points out the most meaningful differences at ages 4 to 8 years. Four items showed the most significant differences, with an important progression in the child's performance between 4 and 8 years. Among the different items, the task of recognizing absurd elements in the pictures presented was the most relevant in differentiating the levels of maturity with regard to age: only 5% could recognize the absurd elements at the age of 4, less than 50% at the age of 7, and 100% at the age of 8 years. On the opposite side, there was no significant change among the ages in identifying colors; 73% could already recognize them at the age of 4 (Nečaev, 1925).

Nečaev's general conclusions were that the ability to repeat the numbers and sentences changed very significantly between 4 and 5 years, and between 7 and 8 years, especially the ability to count forward and backward. The period for aesthetic value shows the most significant progression between 5 and 7 years, evidencing that children develop this ability during this time frame. As we have seen, the ability to discriminate nonsense aspects in a picture starts to develop from the age of 7 to 8 years. The best ages where a progression is notable is between 5 and 6 years old: to finish sentences and words, as well as naming colors. Nečaev

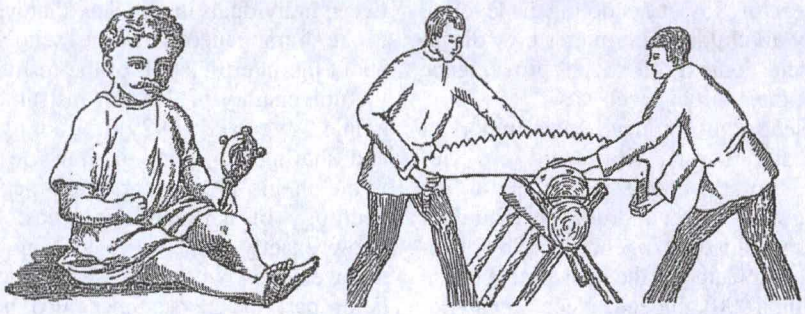

Figure 2. Two pictures of Nečaev's test taken from Rossolimo's collection to check the child's ability to recognize absurd aspects (source: Nečaev, 1925; illustrations at the end of the book note). This test included ten pictures. In the left picture is the mustache of the child, and in the right, the twisted saw. Nečaev showed the children these pictures, asking, "Could this exist?" (my translation of Nečaev's comment of the task on p. 33). Nečaev described in detail how he developed the 10-items method, based on the experimentation he undertook with 38 children between 1920 and 1922. According to Nečaev, in general, the children could pass the 10 items test individually in 10 to 15 min.

explained that these results are linked to the development of certain functions that emerge at a specific age. For example, memory and attention would appear between 4 and 5 years, whereas speech clearly improves between 5 and 6 years. The significant progression between 7 and 8 years is due to school experience, which started at the age of 8 years. Thus, he interpreted the results as being due to biological and sociological reasons, evidencing the consequence of the child's natural development, influenced by teaching, once the child entered school.

On the whole, his test represents an abbreviated version of an intelligence test in which the simplest instructions, like following a moving object with the eyes, the examination of apprehension of objects, or the reaction to simple communicative interaction, are excluded. This indicates that the test was not aimed to evaluate mental illness or at differentiating normal from "abnormal" children. In addition, some sensorial tasks, like the appreciation of weight differences, had been removed, as well as the most complex exercises, like offering definitions for abstract terms or building sentences with only some words given. Nečaev's test does not seem to be an intelligence test, because he consciously selected the items linked to school training, showing that all the children resolve them successfully after their first year at school at the age of 8. Therefore, the test seems to be more of an "achievement" test.

As he shows in his table, the tasks evidence a mental maturation process, each linked to specific periodicities and progress of acquisition. The slight individual differences in these acquisition levels, previous to the school training, are interpreted by him, and in tune with the dominant perspective in Soviet Russia, as being mainly due to the social environment of the child. But the results of the testing with 8-year-old children must have been very convenient, as it offered empirical evidence for the effective-

Table 1
The Table Nečaev Obtained After Applying His Test

	Age of the children				
	4	5	6	7	8
Type of task					
1. Repeating numbers	62	78	84	95	100%
2. Repeating sentences	61	75	85	97	100%
3. Counting in growing order	9	11	33	58	100%
4. Reverse counting	6	14	28	40	100%
5. Comparisons	17	54	61	87	100%
6. Esthetic value	62	69	82	97	100%
7. Visual nonsense	5	12	30	49	100%
8. Finishing sentences	49	60	90	92	100%
9. Finishing words	30	48	77	96	100%
10. Name the colors	73	81	92	100	100%
Average	35.8	50.2	66.2	81.1	100%

Note. My reproduction and translation of Nečaev's (1925) table of results (from p. 55).

ness of 1 year of Soviet schooling in leveling intellectually all children, no matter how disadvantaged their context of social provenience was or what their initial level was.

Finally, Nečaev also noticed some important interindividual variations with regard to the results achieved in certain tasks in relation to the social situation of the children. This kind of conclusion revealing heterogeneity in Soviet society led, 11 years later, to the banishment of the tests (Fradkin, 1990). Indeed, Nečaev was not the only pedologist reaching this kind of conclusion through his research. Social differences were made visible through testing and proved that the socialist nation had not yet succeeded in stopping class struggle. Such a pessimistic point of view of the Soviet youth was no longer tolerated in the 1930s during the rise of Stalin's autocratic regime. Scholars initially encouraged to explain children's difficulties (behavior; school success or failures) as related to their belonging to a social group milieu could no longer justify this point of view.[51] On the other hand, they avoided the point of view explaining some aspects in the child development by inherited factors,[52] in order to be in line with the political ideology playing down this point of view, incompatible with a new social system without classes. Social inequality still remained 20 years after the revolution, but authorities wanted to show that the new system had erased and solved the question of social inequality.

Checkmate to Pedology and Testing Practice

The specific social organization of the USSR did not allow any space for individual opinions of parents or children. The family was considered too "bourgeois" and not trustworthy. However, parents' reactions often appeared when their children were sent to specialized schools instead of normal schools, according to their test results. Some parents argued that the selection was unfair and based more on their social situation than the child's real abilities (Šnejder, 1931). The most sensitive about the testing were the teachers, who feared that pedologists could take too much control within their professional sphere, because the testing could be used to evaluate their own pedagogical practice. For the "Stalinist" ideologists, it was unacceptable to find, through the tests, a large variability between individuals in a society that was supposed to be homogeneous. Some scholars worried about the interpretation of the results as well as the universality of this test instrument. For example, Vygotskij (1929),[53] quoting Thorndike and sharing his point of view on the matter, wrote in his project for scientific research in pedology of national minorities: "We never know exactly what we're looking for. We do not even know what units we use and (could this latter part of the sentence also be: "how to interpret the quantitative results"?) what the quantitative conclusions made signify."[54]

The question of heterogeneity among the children sent to specialized school or coming from different social backgrounds was uncovering the unfairness of the means of selection, suggesting the fact that tests were class biased. Moreover, mental tests made no difference between diverse types of handicaps (individual, physical, mental, and social). According to Ozereckij (1931), this was due to a general lack of organization, and of appropriated professional skills of the pedologists. The situation was better in Moscow, because the different professionals involved in the selection were better trained and higher qualified. They usually knew their role and how to endorse coordination with other institutions, teachers, and parents. Efimov's review (1931)[55] of Petrov's book (1928)[56] is a severe criticism of Petrov's research on the mental development of Chuvashian children using the Binet-Simon's method. In his view, Petrov did not take the specific cultural context in to account. He criticized the fact that researchers like Petrov had not adapted the test to the local culture, in other words, to the social environment. Therefore, he had obtained a very low score for Chuvashian children, all seemingly retarded compared with the Russian children. Conclusions provided by Petrov (1928) were totally contrary to Nečaev's results claiming that "the difference of the intellectual level measured for nationalities remained very low."

Pedology was the first[57] science officially forbidden by a decree on July 4, 1936,[58] disqualified as a "pseudo science." At the same time, all psychological tests were banished. Governmental authorities considered them as "bourgeois" and harmful because pedologists had used them "carelessly," giving a totally wrong picture of reality. The test results did not seem adequate with the more than 10 years of

Soviet school education and social progress. The pedologists were incriminated for power abuse through their mechanical uses of tests. This type of assertion served as a pretext to discredit pedology. According to Fradkin (1990), pedologists were accused of detecting, with the help of tests, too high of a number of mentally retarded, handicapped, and problematic children. At the same time, some contradictory opinions about the pedologist's role spread, referring to their great popularity in schools, in their work, and in the cooperation with teachers, to solve problems of learning (Fradkin, 1990)—or just the opposite, accusing them of manipulation, ideology, and as having no connection with reality (Berelowitch, 1990; Ewing, 2001). Although in other countries the mental measurement of children became more and more common (although also questioned), after 1936, the Soviet Union came back to the prerevolutionary traditional methods, without any psychological tests but based on school marks and teachers' impressions about behavior. Repression of the problematic cases was considered to be a better solution than education. After that date, Soviet human sciences were greatly reduced. Soviet psychology came back on the international stage much later, with the figures of Vygotskij, Luria, and Leont'ev (about 30 years after Vygotskij's death in 1934).

Final Comments

By exposing why and how mental testing was used in the Soviet Union in the 1920s and the functions they were supposed to serve, I have attempted to underline the specificity of the development of pedagogical, psychological, and neurological disciplines during this decade through one science: pedology. From an international status of objective science, quickly proclaimed the "queen of sciences" (Schuyten, 1912)[59] pedology was, afterward, quickly abandoned by Western countries. In Russia it was adopted as a model for Marxist science for a decade until its prohibition in 1936. Therefore, within a period of approximately 40 years, this science was born, lived a moment of splendor, and died.

In order to more closely observe the testing undertaken in Russia, the second half of the article focused on a case study based on the empirical data offered by a Russian researcher who was a specialist of international reputation in the field of child studies. The description of Nečaev's method of testing, its applications, and the results obtained was instrumental in the delineating the characteristic aspects of the kind of intellectual evaluation of the infantile mind, which became widespread at that time in the Soviet context. In sum, during the period of the 1920s these were: a reductive, simplification of the testing through combined short versions like that of Nečaev's, adequate to focus on the mental development of children from 4 to 8 years. Moreover, his testing offered exactly the kind of scientific validation the new educational reform needed: despite some individual differences during the preschool years, after only 1 year of school education they appear completely evened, with all children achieving a performance of 100%. These results must have been pleasant for the authorities, as well as for teachers and parents. The numbers show no empirical evidence of significant biological or social differences, which could disturb the dominant political ideas. It was a beautiful example to be used for offering instruction and to foster mental testing in the Soviet Union. But in the long run, it did not save the testing movement—or pedology.

The contextualization of this case offers historical evidence for the thesis that the support for mental testing in Russia was linked to the new role conferred to pedology as science on which to base an educational reform aimed at constructing a new kind of citizen for a Soviet nation. Nevertheless, the supposed "objective" science of mental testing also produced controversial and undesirable results when applied to children of other regions, like in Petrov's study on Chuvashian children, evidencing the presence of intellectual differences interpreted as due to cultural differences in the social context. After more than 10 years of socialism, this was not convenient and was one of the reasons why, in the mid-1930s, mental testing was finally forbidden.

As can be seen in this article, the destiny of mental testing is closely linked to the fate of pedology in Soviet Union. But at the same time, pedology cannot be reduced to quantitative measurement and Stalinist ideology. As I have shown here, a lot of psychological and pedagogical work had been done by scholars during the pre-Stalinist period. Pedologists such as

Nečaev and Blonskij were in search of better knowledge of the child's intellectual level of development, as a way to contribute to the search for a new kind of education that could lead to the emancipation of future generations. But because Bolsheviks expected that personal inadequacies that had survived as stigmata of capitalism would quickly die out with social transformation (Sirotkina & Smith, 2012), the continuous revealing of psychological differences in children by testers was not convenient or appreciated by the authorities that had hoped to scientifically prove the effectiveness of 10 years of Socialist education. Therefore, it seems that pedology failed to satisfy the new line of the Communist Party expectation and ended as being classified as saboteur science, "full of harmful, anti-Marxist tendencies." Nevertheless, it is clear to me that this is not yet the whole story, as there is still more research necessary in order to achieve a better understanding of the psychological measurements that were undertaken by different scholars at that time in the Soviet Union, and about the consequences this psychological activity had.

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Endnotes

1. There are various transliterations of Cyrillic characters; for all the Russian names and words, I opted for the transliteration of ISO type recommended by the United Nations Organization for

Education, Science and Culture, http://portal.unesco.org/culture/fr/ev.php URL_ID=32320&URL_DO=DO_TOPIC&URL_SECTION=201.html

2. http://oren-test.narod.ru/history.htm
3. According to the sources quoted by Etkind (1992, p. 398), in 1923, 52% of the children of school age did not receive any school education. Only 32% of the population had a certain level of literacy. Caroli (1999) presents statistics that significantly illustrate the phenomenon: In the Urals, and only for the region of Perm and Jekaterinburg, the number of homeless children, called *besprizornye or besprizorniki*, increased from 600 in 1921 in 36,000 in 1922.
4. Piotr Lesgaft (1837–1909), Russian biologist, physiologist, and pedagogue.
5. Nikolaj Pirogov (1810–1881), Russian surgeon and pedagogue.
6. Konstantin Ušinskij (1824–1870), Russian pedagogue, pioneer of the scientific pedagogy.
7. Piotr Kapterev (1849–1922), Russian pedagogue.
8. Ivan Sikorskij (1842–1919), Russian psychiatrist.
9. All of these authors are presented in Nečaev's (1925) introduction as the forerunners in child study and modern pedagogics in Russia. Nečaev's bibliographical references are incomplete, and I tried as much as I could to provide a precise reconstitution of Nečaev's references.
10. In 1906 and 1909, the first Pedagogical Psychology Congresses; then, All Russian Union Congresses of Experimental Pedagogy in St. Petersburg/Petrograd in 1910, 1913, and 1916.
11. Handwritten letter from Binet to Nečaev, April 17, 1910, in which Binet underlines the importance of the communication between scholars through scientific societies and to make the research progress.
12. Typewritten and handwritten letters from Claparède to Nečaev, May 19, 1910, and May 8, 1912.
13. Typewritten letter from G. Stanley Hall to Nečaev in St. Petersburg, June 11, 1909. Hall accepted Nečaev's proposal to become a member of the new Russian society for experimental pedagogy.
14. All of the letters are in Naučnyj Arhiv Rossijskoj Akademii Obrazovanija [Scientific Archive of the Russian Academy of Education], f. 85. d. 40, 51, 52.
15. Compulsory education is to be differentiated from compulsory schooling. Schooling became officially compulsory in 1930 (see Fitzpatrick, 1979).
16. The Unified Labour School, Edinaja trudovaja škola, approved by the Central executive Committee of Soviet Union (ВЦИК), 30.09. 1918. For more details, see also Fradkin (1990) and Valkanova (2009).
17. Mihail Pokrovskij (1868–1932), rector of the Institute of Red Professors (IKP) from 1921 to 1931. The institute was abolished in 1938 (see Benerji, 2008).
18. *Narkomzdrav* [Narodnyj komissariat zdravoohranienija]: The Ministry of Health.
19. *Narkompros* [Narodnyj komissariat prosveščenija]. The word *prosveščenije*, "enlightenment," was used for education and culture. The Ministry of Education was called *Narkompros* and also included Arts.
20. *Narkomput'* or *Narkomtrans* [Narodnyj komissariat transporta]: The Ministry of Transport.
21. Of course there was also a massive emigration of certain groups of intellectuals (writers and philosophers) who left the country or were forced to leave it, especially between 1923 and 1926 (see Fitzpatrick, 1979; Gousseff, 2008).
22. Carlton Washburne (1889–1968), Superintendent of Schools, Winnetka, Illinois, from 1919 to 1943. Representative in Russia for the New Education Fellowship, August 1927). Retrieved from http://www.winnetkahistory.org/index.php?id=76
23. The English Organ of the Education Fellowship from 1922 to 1940.
24. Anonymous report, untitled pedological section on the first psychoneurological All Union Congress in the Pedological Revue (*Pedologičeskij žurnal*, first issue, March–April 1923, p. 50).
25. Nikolaj Rybnikov (1890–1961) was the President of the pedological section. From 1924, he was leading the section of pedology at the Moscow Institute of school methods.
26. The program is from Vygotskij's family archive. We took pictures of it, thanks to the kind permission of Gita L'vovna Vygodskaja, Vygotskij's daughter, to whom we pay tribute for her help and open-mindedness.
27. This philosophical concept was used in science in the Soviet Union as a principle, of which arose a method and a specific position for research in social sciences. In 1921, Nikolaj Buharin (1888–1938), a Marxist Soviet theoretician, defined dialectical materialism as based on the following idea: There is . . . a constant change, a constant journey, a constant succession of new forms. Matter in

motion: such is the stuff of this world. It is therefore necessary for the understanding of any phenomenon to study it in its process of origination (how, whence, why it came to be), its evolution, its destruction, in a word, its motion, and not its seeming state of rest. This dynamic point of view is also called the *dialectic* point of view. (see http://www.marxists.org/archive/bukharin/works/1921/histmat/3.htm#a)

28. Defectology was a Soviet specificity, a field dealing with all types of disabilities. According to Barisnikov and Petitpierre (1994, p. 21), the word "defectology," or *defekotogija*, was used at first by L. Vygotskij and A. Griboedov in the early 1920s. We do not know exactly when it appears in Russia as the science of deficiency. Theoretical and practical works had a rapid expansion between the 1920s to the mid-1930s with physically mentally, and morally deficient people. A number of specialized schools (*spomagatel'naja škola*) and institutions increased during this period, as a "system of remedial education" (Grigorenko, 1998). A journal called *Voprosy Defektologii* was published beginning in 1928. Vygotskij was one of the editors and played an important role in the rehabilitation of "deficient" into the society. In 1929, the Experimental Institute of Defectology (EDI), for the study of deficience, opened in Moscow as an autonomous institution.
29. Meaning difficult to educate.
30. In 1926, E. V. Gurjanov, head of the central pedological laboratory MONO in Moscow beginning in 1925, published a methodological book to study the yardsticks of success at school with the help of tests.
31. The results of this presentation are given in the *Pedologičeskij žurnal*, Vol. 3 (no. 6), 1924, pp. 90–94. See bibliography.
32. In C. Murchison (1932, pp. 1236–1237). See bibliography.
33. MONO = Moskovskij Otdel Narkomprosa Obrazovanija [Education Department of the Moscow Narkompros].
34. Called "testologues," in other words, "specialists and theorists of the method of tests" (Anonymous, 1927, p. 801).
35. Mihail Bernštein (1894–1975), Soviet psychologist.
36. Of course, it is not the total amount of tested children during this period. Not all scientists worked with the Institute of School Methods. A lot of research were based on other tests as those of Nečaev: See the case study below. Actually, it is difficult to give an exact amount of the testing, as many tests were applied on children from orphanages and on children from national minorities far away from the big cities. So the tests experiments were not completely under the control of the educational authorities.
37. Alexandre Lazurskij (1874–1917), physician and psychologist, who worked with Nečaev and Behterev. He also spent time in Wundt's laboratory in 1901, and, back in Russia, in Behterev's laboratory.
38. The article does not mention any reference about Claparède.
39. There were already more than two publications of the Rossolimo's profiles, in German (1911, 1922, 1926). Rossolimo, G. (1911). Die psychologischen Profile. Klinik für psychische und nervöse Krankheiten, V. I. Band, H., 3, 4, 249–326. Carl Marhold Verlagsbuchhandlung, Halle a S. Rossolimo, G. (1926). Das Psychologische Profil und andere experimental-psychologische, individuale und collective Methoden zur Prüfung der Psychomechanik bei Erwachsenen und Kindern. *Deutsche Psychologie*, Bd. IV, Heft 3, 1–139. Carl Marhold Verlagsbuchhandlung, Halle a S.
40. The original book, with Kovarsky's inscription, is available in the BGE Library of Geneva.
41. *L'Intermédiaire des Éducateurs*, 1926, vol. XIV, 285–292.
42. *L'Année Psychologique*, 1926, vol. XXVII, 848–850.
43. In the obituary notice, Anonymous, *Pedologija*, vol. 2, 1928 (p. 215).
44. A 5-year plan for research in pedology started in 1929. It was an order of the Narkompros (Ministry of Enlightenment/Education) and the Narkomzdrav (Ministry of Health). The different fields of pedology presented their projects in volume 3 of *Pedologija* in 1929. The main sectors were: preschool children, first and second school grades, difficult children, polytechnic education, and national minorities.
45. The French (speaking) Organ of the Education Fellowship from 1922 to 1940.
46. Schreider gave the following reference in a footnote: "Article published in the Collection 'Soviet Russia in the second decade.'" New York, 1928, pp. 318 sqq.
47. Nowadays, Russian children start school at age 7.
48. Compared with Binet and Simon (1947).
49. There were nine illustrations in Nečaev's test.
50. Chuvashia, a territory located on the Eastern side of the Volga River (close to Tatarstan).
51. It was called the *sociogenetical* point of view.

52. The *biogenetical* point of view (for the different types of studies, see Leopoldoff, 2012).
53. Vygotskij (1929).
54. English translation in Fradkin (1990, p. 376).
55. In *Pedologija*, 1931, volume 7/8, pp. 127–128.
56. F. P. Petrov, *Experimental research on the intellectual development of the Chuvashian children through the method of Binet Simon* (cited in *Pedologija*, 1931, vol. 7/8, pp. 127–128; Petrov's book was written in 1928; the reference to the book does not include publisher information).
57. The first, but not the last, according to Fradkin (1990, p. 199): "genetics, cybernetics, semiotics and a number of other sciences" were destroyed in the 1940s.
58. The testing methods were officially banished by a decree of the central committee of the Communist party, together with pedology, and considered as nonscientific. That was the first decree to banish a science and the tools of that science.
59. At the first and last International Congress of pedology in Bruxelles.

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