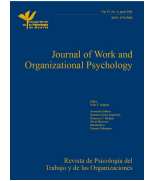




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A Pioneer Project of a School Psychotechnic Center (1920)

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ABSTRACT

Emilio Mira y López (1896-1964) was the great international figure of Spanish applied psychology in the first half of the 20th century. His work "The selection of drivers for the Bus General Company" (1922) was a key contribution to the development of personnel selection and the evaluation of professional skills in Spain. Another relevant work, but scarcely cited, has been "Initiation of school children in social life. Necessity of establishing vocational guidance schools or institutes. Means for their creation and development", to which this article is dedicated. Mira's work consists of three parts (a) the social preparation of the child at school, (b) the need to establish vocational guidance schools or institutes, and (c) the means for its creation and development. Mira makes a distinction between guidance and selection tasks and discusses various practical aspects such as the minimum working hours of such centers, the structure of the guidance process, and the guidance functions of the center. Finally, the article summarizes Mira's theoretical and practical contribution.

Un proyecto pionero de un centro de psicotecnia escolar (1920)

RESUMEN

Emilio Mira y López (1896-1964) ha sido la gran figura internacional de la psicología aplicada española de la primera mitad del siglo XX. Su artículo, "La selección de conductores de la para la Compañía General de Autobuses" (1922) supuso una aportación fundamental para el desarrollo de la selección de personal y la evaluación psicológica de las capacidades profesionales en España. Otro trabajo relevante, pero escasamente citado, ha sido "Iniciación de la infancia escolar en la vida social. Necesidad de establecer escuelas o institutos de orientación profesional. Medios para su creación y desenvolvimiento", al que está dedicado el presente artículo. El trabajo de Mira consta de tres partes (a) la preparación social del niño en la escuela, (b) la necesidad de establecer escuelas o institutos de orientación vocacional y (c) los medios para su creación y desarrollo. Mira hace una distinción entre las tareas de orientación y selección y aborda varios aspectos prácticos como las horas mínimas de trabajo de esos centros, la estructura del proceso de orientación y las funciones de orientación del centro. Finalmente, el artículo hace un resumen de la aportación teórica y práctica de Mira.

Psychology is a natural science that includes the possibility of technical applications to the solution of social problems. In this modern sense, psychology began in Spain in the first decades of the 20th century. Some of the groups dedicated to its cultivation soon achieved fame and recognition among foreign colleagues and centers (Llavona & Bandres, 2022). This explains why the then newly created International Society of Psychotechnics (1920) held two meetings in Spain (1921, 1930). Such events were made possible by the active collaboration of a psychotechnical group created in Barcelona, and mainly inspired by Emilio Mira.

Emilio Mira y López, (1896-1964) has been, and undoubtedly continues to be, the first international figure in contemporary

Spanish psychology (Carpintero, 2004). Professor of psychiatry at the University of Barcelona (1933), and before that director of the recently inaugurated Barcelona's *Institut d'Orientació Professional*, which he had joined in 1919, he soon became a leading figure of European psychotechnics, in close relation with other European pioneers of applied psychology. He was also one of the organizers of the Spanish psychotechnics network created in the 1920s, actively collaborating with his colleague from Madrid, José Germain. Both psychologists were backed by Cesar de Madariaga, a relevant engineer working for the Spanish administration and a person who was highly interested in the scientific organization of work (Saiz, & Saiz, 1992; Saiz et al., 1992; Siguan, 1981).

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Note. This is an Editor's invited article to commemorate the centenary of the first International Conference of Psychotechnics held in Spain (Barcelona, 1921), the development of the percepto-tachymeter and the publication of the first validation study in a Spanish company (Mira, 1922/1923). We thank Professor Carpintero for writing this article that summarizes some initial and less known efforts in the development of the Work and Organizational Psychology in Spain.

Mira worked actively as a psychologist and psychiatrist during the 2nd Spanish Republic (1931-1939), and especially during the Spanish civil war (1936-1939), acting as head of the mental hygiene services of the Republican army (Iruela, 1993). At the end of the war, he went into exile and never returned to Spain. After a few stays in various countries, he finally settled in Brazil, where he developed extensive work as an applied psychologist, becoming, in the opinion of Rubén Ardila, one of the greatest psychologists in Latin-America (Ardila, 1986). During his entire life, he was one of the most active promoters of applied psychology at international level and left an indelible mark on all the enterprises he carried out (Carpintero et al., 2020).

It should be noted that the empirical evaluation of individual professional capacities began in Spain in 1922 with a basic work by Mira, "The selection of drivers for the General Bus Company" from Barcelona. This is now just one hundred years old (Mira y López, 1922/1923; Tortosa, Montoro, & Carbonell, 1989). The work was part of the important development that the topic on employee selection and guidance had been having since 1900 in several European countries, prior to the well-known works of Münsterberg in the United States (Salgado et al., 2010).

The story is as follows. Barcelona's municipal authorities had asked him to make a selection of bus drivers, and with this purpose he reviewed diverse procedures used by foreign centers and, finally, he established his own exam, including the study of processes of attention, perception, reaction time, and resistance to fatigue. In addition, he also did a study of appreciation of distances and speeds, using mobile rods that crossed or were separated, in a device of his invention, the "perceptotachymeter", which was very effective in that selection. Mira was also able to compare these results with data obtained from the real activity of those drivers, and its success made it possible to extend the selection to other municipal fields. The psychology of work thus obtained a very valuable social confirmation, and the Guidance Institute of Barcelona achieved wide local and international recognition (Chleusebaigue, 1934). The notable fact is that Mira's interest in the processes of psychological evaluation of individuals had begun a couple of years earlier, dealing with the issue of school guidance. This is proven by the work that we are now discussing below.

A Forgotten Report

Here we present one of Mira's early works that has been largely ignored in his historiography. The title is *Iniciación de la infancia escolar en la vida social. Necesidad de establecer escuelas o institutos de orientación profesional. Medios para su creación y desenvolvimiento* ["Initiation of school childhood in social life. The need to establish vocational guidance schools or institutes. Means for its creation and development"]. It was presented to a contest promoted in 1920 by *Delegado Regio de Primera Enseñanza en Vizcaya* [Vizcaya's Royal Delegate for Primary Education], Julián Benito Marco y Gardoqui, who had organized some "studies on childhood", including an open contest focused on the initiation of childhood in social life. This event was supported by *Altos Hornos de Vizcaya* [Blast Furnaces of Biscay], a big metallurgy manufacturing company, founded in 1902, that offered an important prize (1,500 pesetas), a very considerable amount in those days. Mira's memoir was the winner. (A brief note on it appeared in the Barcelona newspaper *La Vanguardia* on Dec 2 1920; Bandrés & Bandrés, 2017).

The text was printed in Bilbao (Typography of *El Nervión*) in 1921. In the published report, the jury mentioned that 19 works had been presented to the contest, and that the jury had unanimously awarded the prize to Mira's mainly due to "the lofty conception on which this work is based" (Mira, 1921, p. 10). The author had sent his contribution identified by a well-known sentence of Goethe

that perfectly synthesized the meaning of the psychotechnic testing blooming at the time: "Not all paths are for all walkers." These words pointed directly to the presence of individual differences, and the convenience of studying the greater or lesser suitability of workers candidate to different jobs or positions. In a joint document, where the author identified himself, he presented himself as a MD, although academically he was not yet one, – as he would read his thesis only in 3 1923 –, and also as "head of the psychotechnical laboratory of the *Institut of Professional Orientation of Barcelona*". He had been in that position only a year, as previously indicated, but the quality of his work shows that he had dedicated himself intensely to the subject of psychotechnics.

It is an interesting document, that undoubtedly must be considered one of Mira's very first works in psychotechnics. Head of its psychophysiology laboratory too, he soon initiated a series of studies and organized a system of psychological assistance that would make the center to be considered a model by prominent personalities such as the Swiss psychologist Edouard Claparède (Mira y López, 1921, p. 35; see also Carpintero et al., 2020). One of his first achievements was undoubtedly this prize.

The Content of the Memoir

The memoir occupies pages 11 to 56 of the booklet we examine here. It consists of a first part, about "The social preparation of the child at school", which is followed by a second section on the "Need to establish vocational guidance schools or institutes", and a third on "Means for their creation and development." It closes with a very brief but informative "Bibliography", in which he names some works and centers where more information about pre-professional and professional orientation could be obtained and is accompanied by a few complementary documents: a health record, a vocational record, a questionnaire about the type of job, a medical examination, an anthropometric sheet, a psychometric sheet, and a pedagogical sheet.

Let us now turn to its content. The paper begins with a few pages on "the social preparation of the child at school." The school offers an educational process to each child, and he/she becomes connected in various ways with the group of his age peers. As a result, he is integrated into that society, maintaining a differential treatment with the various social groups with which he/she contacts.

He conceives of school as a factor of socialization, and not of mere instruction. He then analyzes some of the psychological factors that lead the child to coexist with other children at school, underlining those drives and tendencies that lead him/her towards a social life with other people who are not members of his/her own family, but with whom he maintains a "social affinity." Mira takes from a widely read book by Edwin Kirkpatrick (1862-1937) (Kirkpatrick, 1903) the existence of four lines leading to socialization: the pure tendency to group together – today known as 'affiliation', the tendency to develop sympathy or, as we would say today, 'empathy' – to feel like others; the tendency to seek approval, or a search for 'social reinforcement'; and, finally, a tendency to practice 'altruism' – becoming concerned about the welfare of the group and of companions (Mira, 1921, pp. 13-16). The school must strengthen these inclinations and promote the incorporation of the child into the life of his/her immediate society.

Our author suggests some exercises or means that promote such an end; for instance, he is in favor of eradicating snitching and of reinforcing 'fellowship' – thus favoring affiliation; he recommends to reinforce all expressions of sympathy; he also recommends to introduce some exercises graded by the students themselves, that would reinforce their self-esteem through others' approval; and in order to strengthen altruism, he suggests to develop a comprehensive acquisition of the religious principles of fraternity, "initiating

children... in the wise maxims of our Holy Religion, by means of examples", not by means of mere repetition, but in such a manner that "they will understand and practice their Divine maxims" (Mira, 1921, pp. 14-15).

The author always maintains that the school must form a "harmonious whole" with life. He goes so far as to say that school activity "must break down its walls and be developed in the heart of life" (Mira, 1921, p. 17). Therefore, instruction is not enough, but education is also needed, in clear coincidence with the ideas of John Dewey (1859-1952), (Dewey, 1929, 1944, 1964/1946; see also Luzuriaga, 1944), for example, or of Angelo Patri (1876-1965) – two names explicitly mentioned here. On the other hand, such relationship between school and life cannot be built without the cooperation of parents and teachers in the whole educational process. When pointing out to the basic elements of a psychological intervention that would promote such ends, Mira attends not so much to "knowledge", but above all to "acts", or, even better, to "conduct" – although no reference to Watson's nascent behaviorism may be found in these pages. In effect, he says that man is judged "by his behavior", which is fundamentally regulated by "affective tendencies or feelings" (Mira, 1921, p. 12). These dynamic behavioral factors are playing an essential role in school socialization.

The Question of Orientation

An immediate problem arises: each one must find the right place to develop the most appropriate behavior for him. This implies finding the ideal place that would suit each one within society. This question leads us to the topic of career guidance in school.

The second section of this work is dedicated to specifying what refers to "the need to establish Vocational Guidance Schools or Institutes." With the aid of one of these centers, the development of school children would benefit from the recommendations and analyses the psychotechnician would offer, about the path to follow for each person in life. This is the central nucleus of the present contest that gave rise to the report.

The sentence of Goethe quoted above has its full meaning here. It is necessary to see which path each one follow should give his aptitudes and interests when leaving school. Consequently, "every man must therefore know himself, and know what is he best suited for before starting to work". This is a matter where experience shows the need (Mira, 1921, p. 21). for some technical people to intervene. After collecting data from Parsons Vocational Center in Boston, it appeared that in most cases young people were choosing their professional destiny without considering those aptitudes on which that choice should be based; only 5% of subjects have considered them (Mira, 1921, p. 22). It is not enough for our author that certain qualities or abilities might exist in an individual; what is important is "the application that the subject makes of these aptitudes" (ibid. p. 30). Hence, he tries to create a space where the subject under study could feel himself free, not fearing to be observed, and inclined to display spontaneous behavior, which is exactly what the psychologist has to analyze and assess.

To that end, he proposes taking a "disguised psychological laboratory" as a model, which had already been used by H. C. Link, where natural behaviors could be examined. Such a laboratory, which its author called a "portable" one, could be moved to those places where the subjects to be examined were naturally found, and thus observation would become possible without missing the familiarity of actions that favors research (Link, 1924).

The convenience of such laboratory model, and that particular interest in spontaneous behavior, would make technical centers necessary if a true professional guidance was to be obtained. This forced Mira to specify its basic structure and organization. A third section of the memory is dedicated to it.

Specialized Centers

Mira collected a considerable amount of valuable information in the section on "Means for its creation and development" –, that is, for building the just mentioned Institutes or Schools. He offers a brief synthesis of these topics. To begin with, our psychologist decidedly opted for the denomination of "Institutes", instead of "Schools". In his opinion, the task done in these centers is effective "research", a typical activity of institutes, but not "teaching", which is a proper matter of schools. Certainly, the knowledge found in those centers will be translated and applied into their related schools, and the diagnoses offered to them by the corresponding Institute will have to be applied and verified in the schools, where the studied subjects are registered. On the other hand, both center types, Institute, and School, must be related to each other, as both depend on the classrooms of the corresponding school and on the families of those children that the counselors try to guide. Such centers, after all, are interested in providing guidance to the same group of subjects.

Functions of an Orientation Center

Regarding the functioning of these centers, a strong distinction is made here between the tasks of "selection" and "orientation". Although both may seem similar, their purposes are different. The former is intended to provide with a new member to the company that requires it, and it tries to find that one who meets the best conditions for the task to be performed; the latter, meanwhile, seeks to inform about the preferable job or occupation that better suits to each person submitted to examination, looking for a technically founded answer that will put an end to his/her uncertainty about the future (ibid., p. 35).

The Memoir culminates its purpose by presenting, in its last pages, "the means and development" that such an institute should have. To begin with, the Institute should be supported by the corresponding local or regional authorities (ibid. p. 37). Its direction will be overseen by a committee or board of directors, that will include among its members some representatives from political and educational organizations linked to the local world where the center is based, in order to strengthen its external connections as much as possible. Also, an advisory board will try to solve scientific questions, and will support the director in his resolutions. This one, meanwhile, will maintain relations with a large variety of technicians, like primary education inspectors, school medical inspectors, federations and unions, educational institutions, including those dedicated to the fine arts (ibid., p. 39).

Mira's report also includes a few practical issues, like the minimum working hours of these centers, which should be five hours a day, or the medical and psychotechnical laboratories that would prepare the records to be filled by the individuals to be oriented. Models of such documents are included at the end of the memoir, some of them like those employed in the Barcelona institute, others like those used at the Brussels orientation center.

Another interesting point refers to the structure of the orientation process. Mira proposes a certain type of study, of a longitudinal nature, which should include three basic moments: a first one, when the subject finishes its primary education, and the evaluation would allow him to direct himself towards one school oriented to higher studies, or towards a pre-professional education; a second step, at the end of the precedent stage, that will now offer a new exam, whose results will direct the tested subject towards the secondary education (high school and the university), or towards a professional training. Finally, there would be a last evaluation, which would indicate the most convenient "specialization", to be obtained, either in the professional field, or among the possible careers. In his plan, Mira referred himself to the orientation models offered by centers

like the American universities of Harvard, or Columbia, or the Berlin institute, among others.

Orientation, according to Mira, must be applied in “all professional jobs, including those that constitute the so-called liberal professions” (Ibid., p. 42). He also underlines that the matters considered in an evaluation process must be specific activities, which may be part of various professions, and must not have the condition of a full career taken as a whole. The Institute will only recommend “a type of work” for which someone is gifted, but never impose a wholly specific and unique profession. In his view, guidance must avoid any possibility that “the freedom of the individual” would be “destroyed” by the process (ibid, p. 43) because of its rigidity.

The Structure of the Counseling Center

The report ends with a description of the sections that an institute such as the one here presented had to include: an ‘information section’ – that would collect data on individuals, and on the state of the affairs in the regional working world; a ‘statistics section’, that would study the trends appearing in the responses of the subjects; a ‘medical-anthropological section’, which would relate somatic data with jobs and professions, and a ‘psychotechnics section’, which would determine the aptitudes of different professions, as well as those levels achieved in each case by the individuals evaluated, and which ultimately would recommend the kind of professional job more convenient for each person.

Attention was then paid to the topic of “management”, which is the key for the entire task to be completed here. This is the role of the director of the center, that in each case must take all data from the previous technical studies, and then build a guiding judgment, with attention to both the elements and traits of the subject, as well as the objective factors of the vital situation in which he/her finds himself. All this information will allow the subject to reach a final recommendation that will be offered by the center to the client.

Mira was aware that on many occasions individuals and their families have ignored a counselor’s recommendations to attend instead to their personal interests and projects, perhaps with a poor objective basis, but that are subjectively dominant. He acknowledges that the orientation process, in its current situation, is not mandatory for those who submit to it. Hence, he concludes that, although currently “it is not yet possible to force everyone to carry out a job for which they have aptitudes, it should at least be ensured that they do not practice a job for which they lack them” (Ibid. p. 50). Such desirable regulation would avoid imbalances, frustrations, and hindrances in the production processes, and would place these guiding centers as “the true source of the Nation’s progress” (ibid. p. 50), as it would be feasible for each person to work on what he could be most effective or, at least, where he would produce less inconvenience.

The Pre-professional Education

The report ends by examining the structure of the field of preprofessional education, which Mira considers particularly useful and relevant in the orientation process, as conceived here. It differs from both the professional field, and from the purely academic one. The education and activities that are covered at this stage are of a basic nature, but already oriented towards a specialization.

Such a field is specifically referred to those professions that “do not need secondary education, nor the first in its entirety” (ibid. p. 52). Tasks collected here include differences that allow directing individuals in some cases to an industrial training, in others to a commercial one, or to an agricultural one. It could now be viewed as an actual ‘first cycle’ of professional training. On the other hand, professional teaching refers to non-liberal professions – fine arts included. In conclusion, he insists that attention must be always paid

to the social conditions in which young people will be living when they join their society as active members.

A Brief View on the Guidance Studies

The report includes not only practical information, but also a brief review of the authors and centers whose work had been influential on guidance psychology. It begins with the old but still profitable ideas offered by the Spanish Renaissance physician Juan Huarte de San Juan (16th century) in his well-known *Examen de Ingenios* [“Examination of Men’s Wits”] (Mira, 1921, p. 30), and it also includes some basic authors from modern times. Among others, he mentioned the work of Parsons and his Vocational Bureau, the contributions of Münsterberg, and some North American authors – Hollingworth, Link, Thorndike, among others –; the English names of Myers, Spearman, and Burt; those of Piéron and Lahy, from France, or the one of Claparède, from Switzerland; he even mentions some authors from Belgium, Austria, Luxembourg, Holland, and Japan.

Finally, he dedicates a few lines to the Barcelona Institute, where he was currently working. The center was created by the impulse of the Catalan politician Prat de la Riba and brought together an interesting group of specialists like Ruiz Castella, and other colleagues. Undoubtedly, the model of Institute here offered by Mira was built according to the actual Barcelona Institute, a center that could only be compared to the Brussels Institute, under the head of Christiaens, or to the one of Berlin, led by Moede and Piorkowski. As Mira confess in these pages, the center of Barcelona was judged in those days by Claparède as “the most complete in Europe” (ibid., p. 35). This is the reason why two international meetings on psychotechnics, both headed by Claparède, took place in it.

Certainly, Mira was aware that the psychotechnical model here offered was far from the real conditions of his country at that time. He openly regrets here that in Spain the psychotechnical orientation was still unresolved, although a great impulse had been given to it in the Catalan world. Here, its local authorities were supporting the Barcelona Institut, financing it with 35,000 pesetas in 1920 (possibly just over 50,000 euros of today) – but in the rest of the country, in general, this activity lacked real support. He concludes his report by saying: “We believe... that our country not only should but to, but can fulfill all the extremes indicated here, if now... it can count on the spiritual energy of its children” (ibid. p. 55).

Some Theoretical Considerations

A remarkable aspect of Mira’s work is the theoretical reflection that accompanies all those practical ideas that we have just mentioned. Mira offers here an interesting view on certain philosophical background that might support the guidance psychology. He succeeds, in fact, in linking the professional guidance activities with the movement of ‘social pedagogy’, on the rise at that time. Both cultural realities were coincident in emphasizing the social importance of education as the basis for a personal project of action in society. In fact, the broad field of “social pedagogy” was considered by Mira as a “new and promising science” (Mira, 1921, p. 12), that was maintaining the idea that a school must take care of the “social preparation of the infant from his entry into school, guiding him/her during his/her first steps in social life, ... and finally choosing his/her most appropriate place within it” (ibid, p. 12). Its function, in short, would be to guide the child at the beginnings of their social life. But this guiding function of young people entering in the historical scene was equally felt as their own by the vocational guidance technicians. While the former represented a theoretical vision, the latter aimed at achieving effective implementation in the school populations.

According to Mira, this new pedagogical discipline represented a great innovation within the educational world and would find

a considerable echo in Spain. One of its founders, the neo-Kantian German philosopher Paul Natorp (1854-1924) had published a treatise on Social Pedagogy (*Sozialpädagogik*) in 1898, and his ideas had begun to take hold in our country shortly after. Soon after, the philosopher Ortega y Gasset gave in 1910 an important conference on “Social pedagogy as a political program” (Ortega y Gasset, 2004, II, p. 86 and following pages), that was followed by the appearance of the Spanish translation of Natorp’s book, accompanied with a study by Manuel García Morente (1913), as Julián Marías noted (García-Alandete, 2021). The nucleus of the new doctrine focuses on the conception of education, not viewed so much as “education of children”, but, as Natorp said, as that action that is applied to a “man who lives in a community” and tries to “elevate that man to the height of full humanity” (Natorp, 1913, p. 8). Ortega, for his part, added in his speech that “a man as such is not the individual of a biological species, but is the individual of humanity”, and in turn “pedagogy is the science of transforming societies” (Ortega, 2004, II, pp. 96-97). Each historical generation acts as the teacher of the next one, trying to inculcate its ideals, and in this way the fabric of history is woven (Durkheim, 1975/1922). These ideas were fully coincident with the guiding psychological intervention, “guiding [a child] during his/her first steps in social life, ... and finally choosing his/her most appropriate place within it” (ibid. p. 12).

All these coincidences must be viewed as part of the process of Spanish cultural *aggiornamento* that was taking place on those days, that incorporated a great variety of German cultural movements into the spirit of certain Spanish active minorities at the turn of the century. In our case, Mira, taking advantage of the guiding psychotechnical techniques of the new psychology, would reaffirm the social and historical condition of a person, and the need to instruct and educate them for social life, largely based in German neokantism. Iruela has rightly noted that Mira’s “scientific concerns and his social convictions are expressed” (Iruela, 1993, p. 169) in his study on professional orientation. It has also been said that his ideas about a fairer and more humane society (Mülberger and Jacó-Vilela, 2007), largely inspired all his psychotechnical reflections and prompted him to seek a betterment of society and a humanization of society.

Conclusion

The present study, as it can be seen, was not limited to merely offering technical considerations of the guidance process, but it also presented a vision both theoretical and practical of its professional field, including a brief picture of its status at the time referred to.

It fact, these pages let us approach the view of career guidance, as the young Mira saw it, once he had actively joined it, through the well-organized center of Barcelona. It must be remembered that he was in those days a young man of twenty-five, who was immediately appreciated by figures such as Claparède, Moede or Lahy, among others.

This memoir also shows that since his earliest days as a psychotechnical psychologist, Mira was well aware of the transcendence of that psychology he aspired to establish in our society. This work, written at the age of twenty-four, is a clear proof that at that time he had clear ideas regarding the social meaning of applied psychology, and a firm and detailed knowledge of its field. Mira remained interested in career guidance throughout his life. Already in full maturity, with the experience behind him of a civil war, and an exile that brought enormous changes in his life, he turned to deal with that topic of his early days, giving birth to his “Handbook of professional guidance” (1947), which was widely known and quoted for a long time by specialists. In it, too, he expressed his wish that the

Science of Work – and not the political orientations – regulated the professional and economic legislation of the countries”, but as long as this would not happen, advisers should encourage the selection of those who had demonstrated capacity to a certain task, and should oppose that those lacking it would be preferred thanks to some powerful influences outside the system (Mira 1947, p. 56).

Mira in his youthful days, when he wrote this memoir, was already a well-prepared technician that combined theoretical insights and practical training, and had a deep sense of social and political responsibility in relation to the tasks a psychologist has to fulfil in society. Those ideas guided him for the rest of his life.

Conflict of Interest

The author of this article declares no conflict of interest.

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