

THE DEVELOPMENT OF SPANISH PSYCHOLOGY:
A BIBLIOMETRIC APPROACH †

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The history of science presents many different ways of developing the scientific thought, according to its social conditions and determinants. Its study cannot be limited to the conceptual level; rather, the social dimensions of the scientific community that produces a certain science must be taken into account, as well as the wider social framework to which that community belongs.

The idea of the existence of "national trends" in science has received considerable support. In psychology, French psychologist Theodule RIBOT claimed a hundred years ago for the admission of two entirely different theoretical traditions: an English one, associationistic and descriptive in its very essence, and a German one, more oriented to physiological and quantitative ways of explanation of the phenomena of mental life. In more recent years, similar attempts have been carried out with various fortune (METZGER, REUCHLIN, DREVER, WATSON, BORING, 1965; SAHAKIAN, 1975).

In any case, it appears to exist a clear difference between those countries that had a creative and original role in building the new psychology, as is the case of Germany, Great Britain, or the United States, among others, and the other ones that received from outside the impulse towards the new science, and tried to imitate those institutions and facilities that were working outside. While the former were, till a certain point, attracted by a pure scientific interest, the latter were in most cases interested in the applications of theory to social problems, and by this reason, giving preeminence to applied, nontheoretical research. This was the case for Spain.

We have shown in some previous works (CARPINTERO, 1980, 1982; PEIRO Y CARPINTERO, 1983) that scientific psychology entered in Spain mainly through the efforts of some minor progressive and open minded groups interested in promoting the cultural change and social development of the country.

† Trabajo presentado en el XX congreso Interamericano de Psicología (Caracas, 1985)

These groups, working in the last decades of the past century, also tried to bring the country into the mainstream of European movements, and, very interested in educational reforms, they turned towards psychology in search of its applications, first to school problems and, some years later, to the tasks of work selection and rehabilitation.

In the first decades of our century psychology began to develop more and more, but the dramatic event of the Spanish civil war had a great impact on it, and the new General Franco's regime clearly promoted the return of psychology under the philosophical banners led by some members of the Catholic church. But after all, the interest for scientific psychology gained new force and little by little a change was taking place among individuals; finally, institutional support was obtained, and at present psychology appears as a field full of promises for young people and as a powerful tool for social intervention.

I will try to offer here a cursory view of the development of Spanish scientific psychology, taking into account some bibliometric data that have been gathered by us along some years of specialized research on that topic.

Bibliometric approach is here conceived as a quantitative and objective way of analyzing scientific literature (GARFIELD & al., 1978). It helps us in the discovery of those structural dimensions of the historical evolution, that are influencing this kind of "public knowledge" that seems to be science (ZIMAN, 1968). The bibliometric approach informs us about authors, productivity in science, their trends in collaborative work and the relevant groups making research in a field; it also gives information about other institutional characteristics that may be found in people making research, and, above all, the study of references gives a clue to the detection of those eminent authors that are orienting the research with their works and whose opinions are frequently cited by others as giving them an authoritative support. Here we will focus only on some selected topics, that could bring us a highly significant information.

Psychological Journals in Spain

Journals are the most common channel for communicating news in science. When they are lacking, scientific life doesn't exist at all, or at least suffers from very severe limitations. On the contrary, its existence clearly reveals the presence of some groups doing active research, with some kind of social support, and with a group of readers that are interested in that work.

In Spain, as in other countries, the story of the psychological journals may exemplify the evolution of related theories, and, in a Spencerian way, they seem progressively to become differentiated, from the early general ones, till the more

specialized and recently founded periodicals. It is this growth and specialization of the journals that let us see the development and consolidation of scientific psychology in Spanish society (PEIRO & CARPINTERO 1983).

As it may be seen in Fig. 1, two highly creative periods seem to be detected in Spanish psychology : one, in the 1930s, just before the Spanish civil war (1936-1939), and the other , in the 1970s, at the beginnings of the new democratic regime established in our country after General Franco's death. It can be seen from this that the conservative regime built by Franco after the war offered few opportunities for developing psychology in the country, and enforces the idea that political regimes may exert a critical influence upon scientific thought in modern times.

Just one nineteenth-century journal has be taking into account. It dealt with all kinds of cultural topics but focusing with special attention to educational ones. This is the Boletín de la Institución Libre de Enseñanza (Buletning of the Free Institution for Education) , the main organ of expression for the liberal-minded group that gathered around the philosopher and great intelectual leader Francisco Giner de los Ríos (1839-1915), that exerted an unbounded influence upon the spanish intelligentsia of our century (Among them Unamuno, Ortega, Machado , Juan Ramón Jimenez and a great part of teachers and educators of the 1920s and 1930s). In this journal , some papers dealing with educational psychology may be found , and the influence of foreign functionalists as Dewey, Stanley Hall and Claparede can be detected. In its pages are included the scarce volume of articles written by Luis Simarro (1851-1921), a physician that became the first Professor of Psychology in our country (1902), formed with Charcot in associationism and in psychopathological research, that published near nothing but awaked psychological vocations among his students -as is the case of J.V. Viqueira, M. Navarro or G. Rodríguez Lafora.

We need to arrive to 1920 to find the first journal partly dedicated to psychology: Archivos de Neurobiología, Psicología, Fisiología, Histología, Neurología y Psiquiatría. In its pages are included some works of the real founders of spanish psychology: Gonzalo Rofríguez Lafora (1886-1971), Emilio Mira y López (1896-1964), José Germain (1897-1986). They are all physicians, interested in applied psychology, in tests and methods that could be applied to school- and labor problems. They are not full psychologists , at least in the first years , as they also work as psychiatrists and have been trained as such, getting their psychological training in various ways. Mira and Germain, the younger ones, were influenced by Lafora , a close friend and collaborator of Ortega in many cultural projects. Mira also founded , some years later, two new journals in Catalonia well centered on psychological questions - Revista de Psicología y Pedagogía , and Revista Catalana de Neurología y Psiquiatría - placing psychology in close contact with educational matters. Both Mira and Germain promoted the newly created Institutes for applied psychology (Institutos de

Psicología Aplicada) in Barcelona and Madrid, and the former also organized two international conferences on applied psychology that were held in Barcelona (1921-1930).

Figure 1 also shows the great impact of the civil war: all the existing journals disappeared, as most of their editors and contributors were forced to flee, going into exile to different countries, most of them to latinamerican ones. Lafora, Mira-y-López, Ortega, and many others left the country and, in many cases, they exerted a significant influence in their new homes. I will only mention here the names of Angel Garma, the first spanish psychoanalyst., that greatly influenced Argentinian psychoanalysis after his arrival to Argentina, in the early 1940s, and the case of Mercedes Rodrigo, a close collaborator of Lafora and Germain that helped to establish the psychological studies in Colombia by the same years (1950s).

After the war, for those psychologists that had remained in Spain, very limited possibilities of making research and publishing results were left. It was founded *Psicotecnia*, as an organ of expression of those centers that worked on applied psychotechnics, mainly centered on testing for car and truck drivers. In 1946, Dr. Germain -the student of Lafora that had remained here- was able to initiate a new journal, *Revista de Psicología General y Aplicada*, that has been the main instrument for scientific communication in Spanish psychology along the years -and is still alive. In the 1940s, this was the only one that covered the whole area of psychology, and some other publications promoted by psychiatrists that appeared only gave some place to psychopathology and clinical psychology in their pages.

In 1968 a new journal was established in Barcelona-*Anuario de Psicología*-. This may be seen as a symptom of new airs in the field: psychology had been created (1968) as a new academic degree in universities, after many years of existing as a diplome for graduate students coming from various fields. The new situation created with the appearance of psychology departments, at various universities, and the establishment of new curricula, especificaly designed for psychologists, explains the great change that appears in the 1970s, with the birth of many new journals dealing now with specialized topics: Behavior modification (*Análisis y Modificación de Conducta*, 1975 ; *Revista Española de Terapia del Comportamiento*, 1982), history of psychology (*Revista de Historia de la Psicología*, 1980), including a journal dedicated to more professional topics, that also serves as organ of expression of the Union of Psychologists (Colegio Oficial de Psicólogos) recently created in the country (1980): *Papeles del Colegio*..

Many different aspects of the Spanish psychological work may be shown from the study of those journals. The steady growth of collaborative work among psychologists, shown by the growth of multiple authorship in articles, the dominant influence of English literature in the world of references that appear in

the articles , and the lack of a strong tradition that could act as a common source for the new developments, could be well attested with the journals. But now we must turn to another point.

Cited authors among Spanish Psychologists

In order to gain more accurate knowledge of the development of psychological ideas in Spain, we will turn to citations, trying to detect which are the authors with greater impact upon Spanish psychologists, through the study of their works.

It is clear that the citation analysis does not solve all the problems of establishing scientific eminence, and many limitations to its use have been pointed out by ENDLER and colls. (1978) , but it is also clear that highly cited names may be taken as representing the lines of thought that are influencing those authors whose work is under scrutiny.

We will consider first some works coming from the first group of men directly related to scientific psychology -Lafora, Viqueira and Navarro Flores, all of them students of Dr. Simarro, and also influenced by Francisco Giner. In the early years of our century, they showed in their works the influence of German psychology, only to be compared with that exerted by Binet.

Navarro (1871-1950), wrote some interesting introductory textbooks -one dealing with experimental methods in psychology- , in which he seemed to accept a dynamistic monism that unified mental and physical forces in some manner. He also stressed introspective methods, and the mediational role of the organism between mental and physical phenomena. In his experimental textbook he paid great attention to Binet and Simon's works (23 references), as well as to those of psychophysics worked out by Weber (16 ref.), Fechner (10 ref.), and well-known experimentalists as Helmholtz (9 ref.), Wundt , Titchener, and french researchers Toulouse and Pieron (each with 7 ref.); in his more theoretical book, he frequently quoted Wundt (33 ref.), Kant (18 ref.), Hoffding (14 ref.) , Jodl (13 ref.) and Spencer (11 ref.) ,(SANZ ORO,1975; TOUS, 1984).

Viqueira (1886-1924), on his part, after receiving a post doctoral training in Germany (with G.E. Müller, and E. Husserl) and in France (with Bergson), wrote an introduction to educational psychology ("Introducción a la psicología pedagógica", 1919) , and a historical introduction to modern psychology that appeared posthumously ("La psicología contemporánea", 1930). He seems to be well acquainted with the literature of his time. In his older book, the German tradition is well represented by Stern (8 ref.), Meumann (6 ref.), G.E. Müller (4 ref.), and Ebbinghaus and Helmholtz (each with 3 ref.); he also cites American authors as James (4 ref.), Titchener (4 ref.) and Calkins (3 ref.), and the French psychologist Binet (4 ref.). In his historical account, he offered a brilliant sketch of the wundtian contribution to psychology (Wundt appears quoted 35 times in the

book). Other highly cited authors are Brentano (12 ref.), Münsterberg (10 ref.), Driesch (5 ref.), Lipps, Ostwald and Oesterreich (each with 4 ref.). He also included a well informed note on Dr. Simarro 's psychological theories , and his book may well serve as an introduction to the history of psychology till that moment.(MESTRE Y CARPINTERO, 1982)

Lafora (1886-1971) undoubtedly deserves the central place of the group. As a former pupil of Cajal , and Simarro, he was formed in a histopathological tradition ; then he got an enlarged view of the topics in neurology and psychiatry working in Germany with Kraepelin and Ziehen , and in the United States with Franz. Here we also will consider his very influential book on Mentally abnormal children (1917 ; 2nd., 1932) (" Los niños mentalmente anormales"); the most frequently quoted names in it are those of specialists working in that subject matter : Binet (123 ref.), the German Weygandt (7 ref.), the American Wallace , Wallin, Belgian Mlle. Descoeudres, French Simon and Italian Sancte de Sanctis (6 ref. each), that are followed by Belgian Decroly and American Goddard (5 ref. each); these names clearly show the vast knowledge of specialized authors he had got for his work , and the way in which specialized literature began to be taken into account by some Spanish authors.(CARPINTERO, in press)

Lafora exerted a great influence on Spanish psychiatry and psychology in many ways, one of them through some of his disciples, or closely related researchers. Here I will only mention two of them: Emilio Mira-y-López and Jose Germain.

Mira is , in my opinion, the first man that deserves the title of psychologist in our country , and his whole work is centered upon psychological questions . After studying in Barcelona with the great physiologist Pi Sunyer , that stressed the physiological unity of each organism, Mira worked as psychologist in a newly founded Institute for Professional Guidance , at Barcelona, doing extensive research in psychotechnics ; some years later, he entered as professor of psychopathology in the Department of Education , and he soon became professor of psychiatry , in the university of Barcelona . As a loyal republican , he was forced to flee after the war , first to Great Britain , and then to Brasil , where he founded a well-known Institute for Professional Selection and Guidance in the Getulio Vargas Foundation .He wrote many books , and also created a personality test based on the motor theory of consciousness , the P.M.K. (the Mio-Kinetic Diagnosis) , that was frequently employed in personality diagnosis.

A recent bibliometric study of Mira's work (MIRALLES, 1985) gives us information about the most quoted authors by Mira. At the top of the list are included the founders of psychoanalysis -Freud, Adler and Jung- , as well as other psychiatrists representing very different outlooks: phenomenological, as Biswanger; existentialist, as Jaspers; psychopathologist, as Janet; constitutionalist, as Kretschmer ; or mixed , as Schilder. He also frequently quoted developmental psychologists, as Gesell, Ch. Bühler and Piaget; personality theorists as Stern,

experimentalists as Pieron; psychotechnicians as Ombredane and Lipmann, intelligence theorists as Wechsler and Burt; explorers of reflex action as Pavlov and Sherrington, or Gestalt theorists as Köhler, Lewin, Bühler and Katz. All of these authors have received 10 or more citations, and also appear at least in four different works: two conditions adopted in order to stress their significance.

Mira tried to build an "eclectic" system, around two foci: the psychopathology, at one hand, and the personality diagnosis and tests, at the other. Interested in psychoanalysis, if not a psychoanalyst himself; working on mental development and testing, and well-known among psychologists from abroad, he could have served as the real introducer of scientific psychology in Spain, if the war had not taken place. But after his exile, he lost all the influence that he had previously gained, and the task of restoring scientific psychology in Spain fell down upon Germain's shoulders.

The Spanish civil war had a great influence upon the Spanish psychology; many professionals went into exile, many journals and institutions were destroyed, and men representing a very different -and old- mentality seized the power. In a study carried out with high-school and introductory textbooks dealing with philosophy - that included psychology as one of its parts - we detected a great change in citation trends when books published before and after the war were compared (See Table I and Fig. 2). It seems that St. Thomas Aquinas replaced Wundt in those texts, and that scientific psychology was substituted by scholastic philosophy.

The same outlook dominates the work of Father M. Barbado (1884-1945), the man that was charged with the psychology chair at the University of Madrid, and was the most influential person in philosophy and psychology in Spain in the early 1940s. His book on the history of experimental psychology ("Introducción a la Psicología Experimental" 2nd. ed. 1943) stressed the need to combine "old principles" with "new facts" in psychology, and considered "old principles" those that could be found in Aristotle's and St. Thomas Aquinas' works. The most quoted work was St. Thomas' Summa Theologica (31 ref.), to be compared with Titchener's A Beginner's Psychology (13 ref.) or Binet's L'ame et le corps (16 ref.). Among the authors, let us see the most quoted ones in the book: St. Thomas (191 ref.); St. Albert the Great (68); E.B. Titchener (42); Wundt (35); Aristotle (33); A. Binet (22), and W. James, W. Köhler, W. Stern and J.B. Watson (20 each).

This revival of old scholastic philosophy deeply changed the teaching of philosophy and psychology all over the country, and dominated the academic groups.

Two independent and almost simultaneous events that took place in 1945 -the end of the World War II, with the defeat of those political regimes that were close to the Franco's one, and the death of Father Barbado -may have been not without influence in the development of Spanish psychology, after all. In 1946,

one of Lafora's pupils, Dr. Germain, also closely related to the group of Ortega, founded a new journal, the *Revista de Psicología General y Aplicada*; two years later, he organized a Department of Psychology in Madrid, in the Higher Council for Scientific Research (C.S.I.C.); in 1952, he also founded the Spanish Psychological Society, and one year later, a postgraduate School of Psychology, in the university of Madrid. Things began to change for better.

If we look at the most quoted authors in the journal *R.P.G.A.*, we may perceive the change (Table II). There are some significant trends to be noted: 1) Spanish names do not appear in the first years, and in the following ones, those appearing are closely related to Germain's group; 2) Many of the authors here mentioned are interested in mathematical psychology and factorial approaches -this may be explained by the fact that one Germain's student, Dr. Yela, completed studies and did further research with Thurstone in USA - and since then, this line has received great attention in our country; 3) Personality theory was first approached through dynamic and projective theories (Freud, Minkowska), and then through factorial ones (Eysenck, Cattell); 4) European and Latinamerican groups seem to dominate the journal, with a minor presence of American ones (two major exceptions: Thurstone -master of Yela- and Super -he called himself a Germain's student -); 5) Philosophical influences, represented by the name of St. Augustin in the early times, seem to have disappeared in the following years. Regarding these data, we may assume a constant increase of the research done in Spain, the salience of certain topics (such as personality, applied psychology and factorial models), and a certain decline of dynamic approaches, substituted by more psychometric ones.

It is also noteworthy that Germain's efforts in creating a group of researchers were so successful that nearly all the persons involved in psychological research in the last decades are members of Germain's group, or have been connected with the group through some of its members. Employing the multiple authorship method for detecting research groups, or "invisible colleges", as PRICE called them (PRICE & BEAVER, 1966) -that is, putting together those names that have published together some piece of research-, it is possible to arrive to some results as those represented in Fig. 3, showing the network relating the most significant names of Spanish present-day psychology, also including that of Germain's master, Dr. Lafora; this may be taken as the Spanish psychology heritage tree.

Present day psychology is rapidly growing, and professional questions are becoming not less important than the more academic ones. But it is important to see that, in its development, Spanish psychology bears the marks of socio-historical episodes, proving that science is only a part of the whole human life.

SUMARIO

El trabajo presenta una visión sinóptica de la evolución de la psicología científica en España aportando datos bibliométricos, particularmente acerca de los autores más citados en las revistas y libros más significativos. A través de esos datos se evidencian una serie de influencias que han ido actuando sobre la psicología española, muy afectada por la guerra civil, y hacia los grupos dedicados a la psicología cuantitativa y experimental

ABSTRACT

The evolution of Spanish scientific psychology is presented in a cursory overview, giving interesting bibliometric data about most quoted authors in journals articles and in significant books. These citations clearly evidenciate the changing influences upon Spanish psychologists, the great impact of the civil war on psychology, and the recent trends towards quantitative and experimental research that dominate Spanish contemporary psychology.

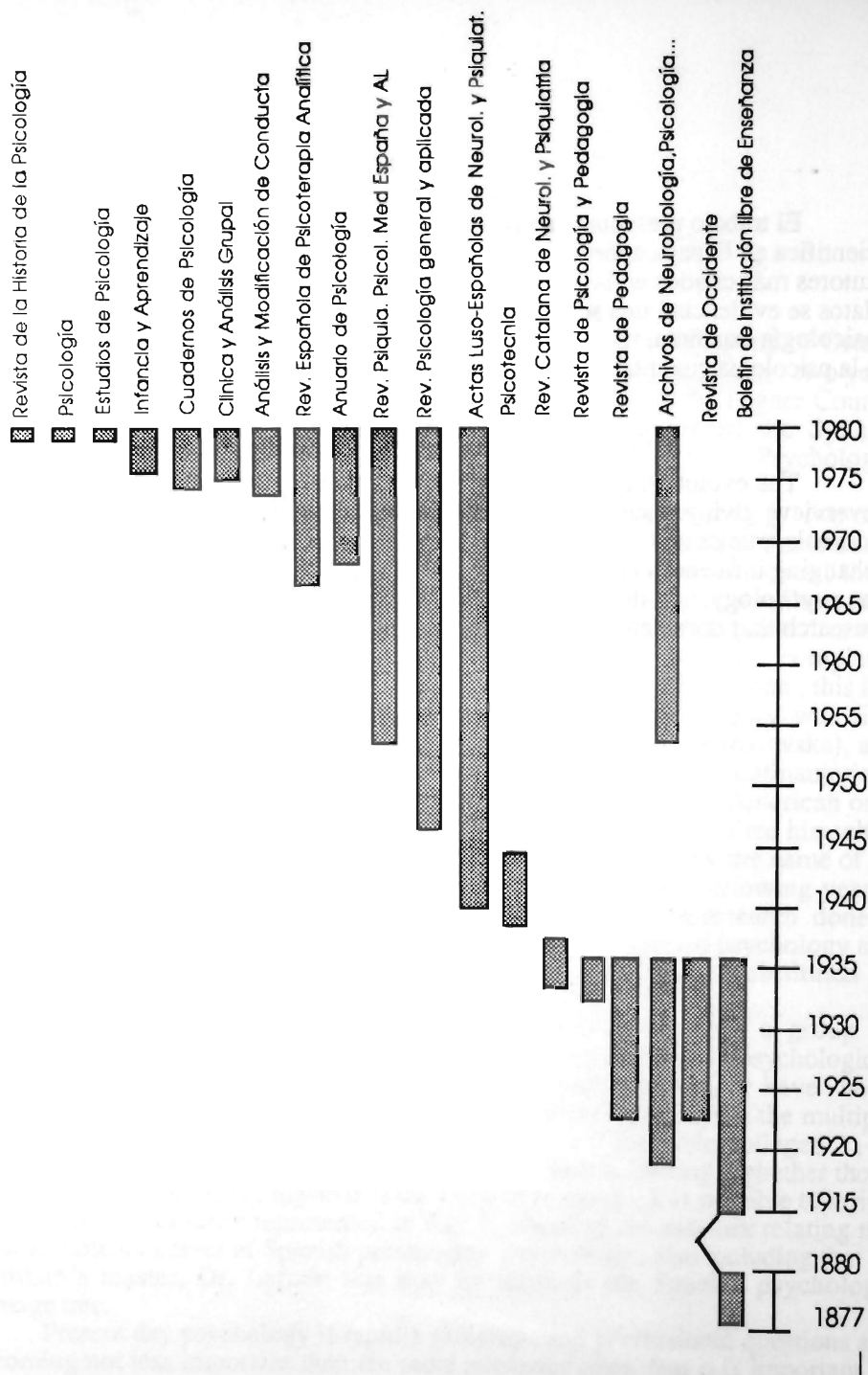


Fig 1 CRONOLOGIC EVOLUTION OF SPANISH PSYCHOLOGICAL JOURNALS

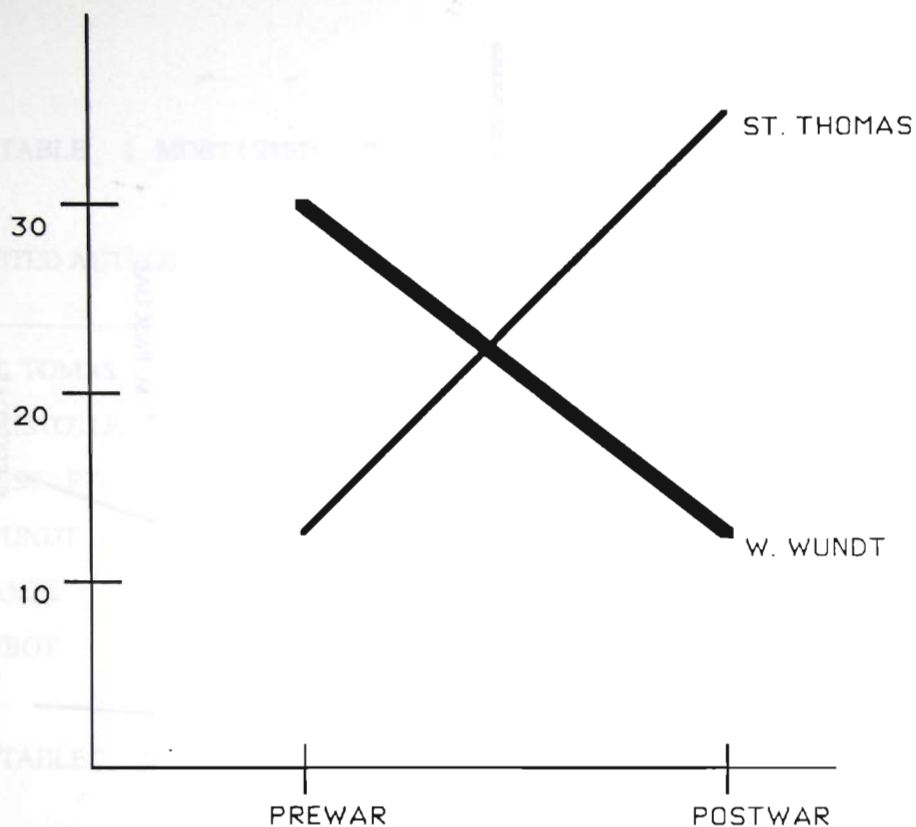


Fig 2 CITATION TRENDS OF TWO AUTHORS (ST. THOMAS AQUINAS AND W. WUNDT) IN SPANISH TEXTBOOKS, EDITED BEFORE AND AFTER SPANISH CIVIL WAR

Fig 3 GERMAIN'S INVISIBLE COLLEGE (ACCORDING TO COLLABORATIONS IN PUBLICATIONS)

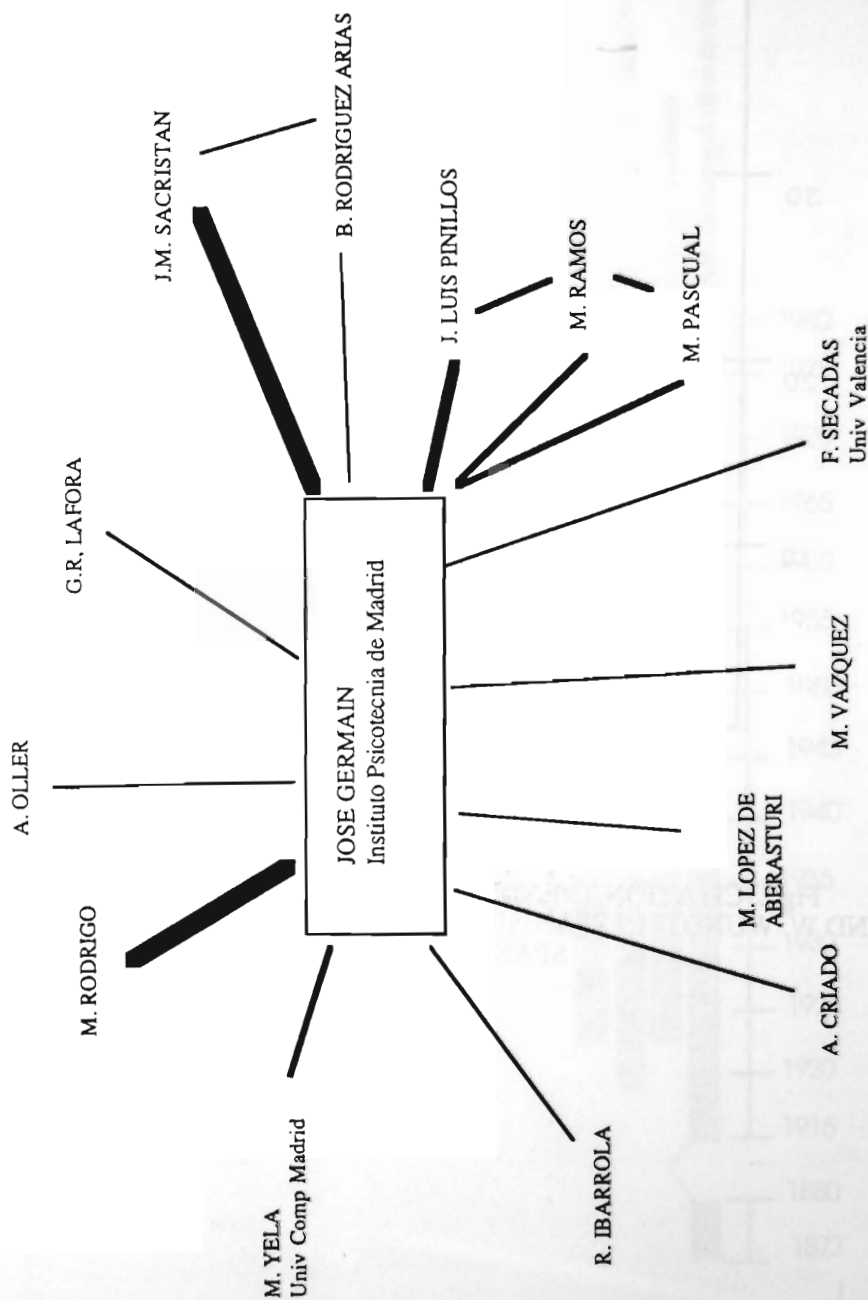


TABLE 1 MOST CITED AUTHORS IN SOME SPANISH TEXTBOOKS, BEFORE AND AFTER 1939

| CITED AUTHORS | NUMBER OF CITING TEXTBOOKS | TOTAL CITATIONS | PRE-WAR CITATIONS | POST-WAR |
|---------------|-------------------------------|--------------------|----------------------|----------|
| ST. TOMAS | 16 | 45 | 12 | 33 |
| ARISTOTLE | 20 | 41 | 10 | 31 |
| DESCARTES | 18 | 34 | 8 | 26 |
| WUNDT | 20 | 43 | 30 | 13 |
| JAMES | 17 | 43 | 23 | 20 |
| RIBOT | 13 | 24 | 15 | 9 |

TABLE 2 MOST QUOTED AUTHORS IN "REVISTA DE PSICOLOGIA GENERAL Y APLICADA"

| 1946 - 1957 | Ref. | 1958 - 1968 | Ref. | 1969 - 1979 | Ref. |
|--------------|------|----------------|------|--------------|------|
| CH.S. MYERS | 117 | M. YELA | 55 | H.J. EYSENCK | 89 |
| C. MINKOWSKA | 42 | F. SECADAS | 41 | H.J. RIMOLDI | 74 |
| H.J. EYSENCK | 32 | L.L. THURSTONE | 39 | V. CONDE | 66 |
| ST. AGUSTIN | 24 | J. PIAGET | 36 | D. SUPER | 59 |
| S. FREUD | 24 | H.J. EYSENCK | 32 | J. PIAGET | 55 |
| W. FREEMAN | 22 | J. GERMAIN | 30 | M. YELA | 55 |
| C.P. RICHTER | 22 | J. BRENGELMANN | 29 | R.B. CATTELL | 53 |

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