

# Chapter 2

## Psychological Research in Latin America: Current and Future Perspectives



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**Abstract** This chapter, devoted to psychological scientific investigation in Latin America, shows the main trends in basic and applied research, the methods used, and the most important advances and limitations of research. It refers to the need to consolidate programs nationally and internationally and increase funding for research projects and institutions. The main areas of work are pointed out along with the most outstanding contributions to psychology as a science, made by psychologists from several countries, without overlooking the applications of psychology, which for developing countries are of fundamental importance.

### Historical Context

Latin America is a region that includes countries from continental America between Mexico and Argentina and the Caribbean. Its denomination is based on the linguistic origin of the European countries (i.e., Spain, Portugal, and France) that colonized these territories on the American continent. It is a diverse region in demographic, cultural, political, social, and economic terms. This diversity is often observed in structural, educational, scientific, and other social variables. When referring to Latin America, making generalizations is not easy, but certain historical, geographical, and cultural commonalities allow for the possibility to talk about a single region, despite some large differences among countries.

The development of psychology in the region between the end of the nineteenth century and beginning of the twentieth century was strongly associated with the fields of medicine, education, philosophy, and law. The first psychology classes were taught in these colleges, and the first developments, laboratories, and

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publications frequently originated in academic settings. A high level of cultural dependence from Europe and the search for a national identity that was associated with European culture provide an explanation for the role of a number of Europeans who migrated to Latin America and became “pioneers” of psychology in the region. Among them, the best known are W. Radecki (Polish; worked in Brazil, Argentina, and Uruguay), W. Blumenfeld (German; worked in Perú), B. Szekely (Hungarian; worked in Argentina, Brazil, and Chile), E. Mira y López (Cuban-Spaniard; worked in Argentina, Uruguay, and Brazil), and M. Rodrigo (Spaniard; worked in Colombia and Puerto Rico). A group of native Latin Americans is also considered “pioneers”, including E. A. Chávez (México), J. Ingenieros (Argentina), and E. Mouchet (Argentina). They often (but not always) taught the first classes on psychology. They founded journals, training programs, laboratories, and research institutes. In many ways, they promoted development of the discipline and the profession of psychology (see Ardila, 1986; Díaz-Guerrero, 1994).

In recent years, historians of psychology have rediscovered other native and immigrant academics who contributed to the establishment of psychology in the region but whose work was largely ignored. They were naturalists, educators, physicians, and priests who introduced others’ and their own ideas to further our understanding of human and animal behavior. For example, a group of naturalists during colonial times made contributions to animal behavior and the behavior of human native populations. They were often recognized by academia in other latitudes before academia in our region. Among them were Fray Juan de Santa Gertrudis in Colombia and Perú (Pérez, Segura, & Gutiérrez, 2014), Félix de Azara in Paraguay (Ramírez & Gutiérrez, 2010), and José Celestino Mutis in Colombia (Wilson & Gómez Durán, 2010), among others. Similarly, other pioneers who were previously unrecognized have been studied, including Juan Serapio Lois (Salas, 2013) and Amanda Labarca (Winkler & Reyes, 2014) in Chile, among others.

There has also been a growth of historical studies of the development of psychology in individual countries (e.g., Ardila, 2013; Arias, 2014; Balarezo & Velástegui, 2014; García, 2014a; Jacó-Vilela, 2014; Klappenbach, 2006; Portillo, 2006; Schulmeyer, 2014) and the region as a whole (e.g., Alarcón, 2002; García, 2014b; Klappenbach & Pavesi, 1994; Sanchez Sosa & Valderrama-Iturbe, 2001), based on analytical refinements of historical work, better access to documents and other sources, and a renewed interest in understanding the history of the discipline in the Latin American region.

Around the turn of the twentieth century, a number of accomplished intellectuals founded laboratories in Argentina (Victor Mercante in 1891; Horacio Piñero in 1898), Brazil (Mauricio de Madeiros in 1899; Waclaw Radecki in 1924), Chile (Rómulo Peña in 1905–1907; Guillermo Mann in 1908), Perú (Joseph MacKnight in 1912?; Hermilio Valdizán in 1919), and México (Enrique Aragón in 1916) (see Díaz-Guerrero, 1994; Orbegozo Galarza, 2015; Salas, 2012; Sanchez Sosa & Valderrama-Iturbe, 2001). These and other early laboratories were founded in the tradition of European psychology, with a focus on psychophysiology, psychophysics, cognition, and psychometrics. Their common goal was to contribute to education (García, 2014b; Salas, 2012). Similar laboratories were founded in other

countries in the 1930s (e.g., Uruguay), 1950s (e.g., Paraguay), and 1960s (e.g., Colombia). Their main contribution was to the training of psychologists rather than to the production of new knowledge.

Later on, the influence of North American behaviorism during the 1960s and 1970s stimulated the foundation of laboratories of behavior analysis in Brazil, Mexico, Colombia, and other countries. In many cases, these replaced the previous laboratories in terms of training psychologists, but they also made important contributions to research (Gutiérrez, 1999; Schulmeyer, 2014; Todorov, 2006). More recently, the development of scientific research in the region has been accompanied by the creation of new, better equipped, and more active laboratories in many areas of psychology that are associated with graduate programs, transdisciplinary work, and international research groups.

Throughout the nineteenth and twentieth centuries, we have adopted ideas, theories, methods, and evidence from research that is produced in other regions of the world but in some cases with little or no scrutiny or adaptation to local or regional issues or particulars. Nonetheless, there have been exceptions to this view that deserve mention (see Salas, 2012). The research problems were also adopted from European and North American psychology quite frequently. Although many of them are universal in nature, they often reflected the societal interests and needs from their countries of origin and not those of our region. For example, psychological factors that are related to poverty, political conflict, migration, and the relationship between humans and nature are all universal issues. In many cases, however, they require a local view to be adequately understood. Given that the knowledge transfer approach was not critical, it was often perceived as irrelevant or subservient to the interests of other groups, societies, nations, or ideologies. This simplistic view did not entirely lack support, but neither was showing an understanding of the nature of scientific communities, and scientific knowledge, which resulted in political debates that paralyzed the academic communities, instead of moving them to productivity. Dependence on Europe and the United States in scientific production is not exclusive to Latin America. Other regions (e.g., Asia) exhibited a similar situation as a result of historical events. For example, Japanese psychology has been moving from dependence before and after World War II to a more interdependent approach in recent years, developing local areas of interest, expertise, and prospection (Imada & Tanaka-Matsumi, 2016; Oyama, Sato, & Suzuki, 2001). Similar movements have been observed in Latin America, particularly in social psychology, animal behavior, developmental psychology, and other areas.

## Recent Changes in Training Behavioral Scientists

Psychology was initially taught in schools of medicine, education, and philosophy before the foundation of specific psychology schools. The first training program was at the graduate level, founded in Mexico in 1938 (Díaz-Guerrero, 1994). Over the next decade, undergraduate programs were founded in Chile in 1946 and

Colombia in 1947 (based on Ardila, 1986, 2013, 2014; Díaz-Guerrero, 1994; Salas, 2014; Sanchez Sosa & Valderrama-Iturbe, 2001). Historians have debated over the exact dates of the beginning of psychology training in the region, based on the dates of founding administrative entities (e.g., departments, institutes), the approval of a program at a university, or the admission of the first students. Perhaps what is important is that by the early 1950s, psychologists who trained locally began their work in such areas as education, evaluation, clinical psychology, criminology, work psychology, and others, and research was part of the curriculum.

Training in all countries in the region has been shaped by the *Bogotá Training Model* or *Latin American Training Model*. In 1974, Rubén Ardila at the end of the XV Interamerican Congress of Psychology (Bogotá, Colombia), with support from the International Union of Psychological Science, hosted over 30 psychologists from Argentina, Brazil, Chile, Colombia, Cuba, El Salvador, México, Nicaragua, Panamá, Paraguay, and Venezuela to discuss and agree on a training model for students of psychology in the region. Inspired by the Boulder Conference (1947) that helped shape clinical psychology training in the United States, the participants at the Bogotá Conference discussed different areas that should be included in the training of psychologists in Latin America. Like the scientist-practitioner model (Boulder Model), the Latin American Training Model was based on the idea that high-quality training in applied psychology should be rooted in solid training in the science of psychology, its research methods, and capacity to properly evaluate and translate the literature on basic psychological science to concrete social problems. The result was a training model that included a basic cycle (basic behavioral processes, theoretical approaches to psychology, and methodological skills), a professional cycle (heavily oriented toward clinical knowledge and abilities and including other areas of application), a thesis (the culmination of science-based training), and a practicum (the culmination of applied psychology training) (see Gallegos, 2010). All of this was to be packed into a 5-year program, with little space for cross-disciplinary work or for curriculum flexibility.

Most countries expect undergraduate training to be general, but some variability is seen in theoretical approaches and areas of application. Theoretical orientation was a source of much confrontation among psychologists in academic settings between the 1960s and 1990s. Aside from conceptual issues, particular theories were identified with political views, so the theoretical discussion was often a mix of intellectual and ideological conflicts. Given the social and political dynamics in Latin America during the second half of the twentieth century (including dictatorships in many countries in the region), it may be unsurprising that psychology training programs were at the center of confrontation, political discussion and recruitment, and especially the arena where relationships between professions and society were defined (for the Brazilian case, see Jacó-Vilela, 2014).

Unlike the scientist-practitioner model, the Latin American Training Model organized professional titles and training around the undergraduate title of psychologist, and graduate programs were seen as important but optional in this model. Although a short-lived graduate program had been founded in Mexico in 1937, most countries began their graduate programs after 1970. Thus, most of the psychologists

who wanted to receive training at the graduate level had to travel abroad to work toward a Master's degree or a Doctoral degree. The most common destinations were (and continue to be) Spain, México, and Brazil, perhaps because of the language affinity. Additionally, economic barriers have been difficult to overcome for many students who come from countries with relatively weak economies. Countries with stronger science and technology systems, such as México and Brazil, have had many more trained psychologists at the doctoral level, which has important implications for training at home, research development, and research output. Other common destinations for graduate training have been the United States, the Soviet Union (1960s to 1980s), France, Belgium, the United Kingdom, and more recently Germany and Canada.

Graduate students from Latin America are quite successful in training programs around the globe. This is likely the result of the intensive training model and a strong selection process that is related to social, academic, and motivational variables. How this might be changing as a result of greater access to international educational systems and general globalization processes should be of interest for Latin American countries and the region as a whole. Moreover, studies should seek to understand the ways in which science is affected by migration and the adaptation processes of those who return to their countries of origin after graduate studies abroad. An increasing number of psychologists from Latin America are developing their scientific and professional careers away from their own countries. At the same time, an increasing number of psychologists from other regions are migrating to Latin American countries to seek career opportunities. We have very little research that helps us understand the psychological processes that are involved in these vital decisions and the impact they have on individuals, their families, and their communities.

During the 1970s, 1980s, and even 1990s, much of the research production in the region was closely related to the thesis at the undergraduate level. However, the growth of graduate programs promoted the production of research, collaborations, and scientific publications at both the national and international levels. Master's programs in the region are mostly training programs for applied psychology. However, in certain countries, Master's programs can consist of intermediate level training for researchers. Given that the entry-level title to the profession is the undergraduate title, graduate training is still aspirational rather than mandatory for professional development. Doctoral programs in Latin America are 3–4-year programs with low class requirements, and they are heavily invested in the development of a research project. Like doctoral programs in the United States and Europe, they are open to professionals other than psychologists. The quality of certain doctoral programs in the region is a concern for the academic communities. Many virtual and part-time programs have been opened in some of the most common destinations, and they can hardly guarantee the quality of training. Given the needs for education at the graduate level and the cultural bias toward foreign titles and certifications, there is very little social or market control for the quality of these programs, and some exploitation is bound to happen. Greater access to comparative

information, educational and cultural changes, and regulation at the government level might improve program selection by applicants in the future.

## Scientific Research

All countries in the region have a science and technology system and financing and policy-making organizations. A number of countries have a Ministry of Science and Technology. In other countries, a Science or Technology Department depends on the Ministry of Education (Gutiérrez & Ardila, 1992). Changes in the administrative status of the organization that is responsible for science and technology are expected to improve financing and influence national policy. In some cases, however, they become the arena for political infighting and even sources of corruption. Structural changes that occur without cultural and systemic changes may not be sufficient to drive improvements in scientific training and productivity.

As in other regions of the world, psychology in Latin America is often included in the areas of social science for planning and financing purposes, but such areas as neuroscience and experimental psychology might be included in the natural sciences or in health sciences. Similarly, other areas, such as school psychology, counseling, and developmental psychology, might be included in the area of education. This may represent an advantage for psychology because different sources of research financing might be attained.

Research financing for psychology also comes from university funds and external organizations, often related to applied psychology projects. In these projects, investigators often include a research component and are able to make a connection between research and application.

Latin America is a region with *fast growth in research*, measured by publications, collaborations, and the development of doctoral programs. However, the investment of countries in the region in research is less than in North America, Europe, and Asia. Latin America has 8% of the world's population and 8.3% of the global gross domestic product (GDP), but it comprises only 5.1% of scientific publications, 3.6% of global researchers, and 3.4% of global spending. Aside from Brazil, all countries in the region spend less than 1% of GDP on science and technology. Women in Latin America are making great strides in increasing their share as researchers. Nearly half (45%) of scientific researchers in the region are women, well above the global mean (28%). Latin America is experiencing tremendous growth in scientific production compared with many regions around the world. This appears to be the case for psychology as well (UNESCO, 2016).

Despite these encouraging measures of scientific growth, the production of scientific knowledge in psychology continues to be low in most countries. Cultural, political, and economic problems might be some of the reasons for the relatively poor production of scientific knowledge. Thus, Latin American countries have been traditionally consumers and not producers of science. In spite of these governmental problems, some countries in Latin America have shown important growth in science

(UNESCO, 2016). Indeed, Argentina, Brazil, Chile, Colombia, and Mexico are developing solid research in many areas of psychology. Costa Rica, Cuba, Perú, Puerto Rico, and Venezuela are also showing important growth. Research communities make efforts to thrive in university settings, thanks to support from international cooperation, local grants, personal sacrifice, and, in a few countries, organized and adequately funded research systems. Open-access publication has provided much needed information, but at the same time, the democratization of knowledge is still an idealistic goal as a result of a shift in financing from the reader to the writer of scientific publications.

Historically, the majority of research in Latin America has centered on social psychology, school psychology, developmental psychology, behavior analysis, cognitive psychology, and health psychology (Gutiérrez & Ardila, 1992). Certain areas, such as cross-cultural psychology, represent an extraordinary opportunity to make contributions to psychology as a whole. However, with the exception of Mexico and some other countries, little cross-cultural psychology has been done in Latin America (see Alarcón, 2010; Sanchez Sosa & Valderrama-Iturbe, 2001). As in other areas, an emerging trend to study indigenous knowledge is reaching psychology in the form of community psychology, social psychology, cultural psychology, health psychology, and other topical areas. It is still too soon to assess the reach of this trend, but we will be able to follow it in the future. Similarly, comparative psychology offers great opportunities for research given the biodiversity that is found in the region. This area has experienced great progress, and a number of researchers in Argentina, Brazil, Chile, Colombia, and Mexico work in this area, often in research that might be classified as experimental psychology, behavior analysis, or behavioral neuroscience (Ardila, 1987; Papini, 1987). All of these areas are strong in the region and have a long tradition of cooperation and international publications.

As mentioned earlier, historical and scientometric studies of psychology have become fruitful areas of research. A number of researchers in Argentina, Brazil, Chile, and Colombia have performed detailed analyses of the development of the discipline by following national, regional, and international publications and indices. They have clearly made an impact on the academic communities in those countries and the region as a whole. Improved access to historical information and more powerful tools to evaluate large amounts of data will likely encourage these groups of researchers to continue and refine their assessment of the discipline in the region.

An increasing amount of published work is *empirically based*. Experimental, quasi-experimental, and correlational studies are common and well supported by data. A large influence continues to be United States and European psychology. Literature reviews are often based on researchers from those regions and mainstream journals. However, psychology is increasingly an international endeavor, promoting a wider reference base and a wider readership and increasing the impact of psychology that is produced in Latin America. Applied work by far exceeds basic research, reflecting a strong applied and social emphasis of psychology during the last century. A vast majority of studies use human subjects; studies that use animal models are of great quality but are much less common.

## **Social Research: From Irrelevance and Political Action to Social Impact**

Science provides us with a worldview and a strategy to understand nature beyond other views that are rooted in history and culture. Thanks to scientific knowledge, humans have been able to understand nature at some level and at times predict it, control it, and modify it. Humans' capacity to control and modify nature is not in itself the main objective of science, although in many cases scientific knowledge is the basis for technological development. At the same time, an important technological base does not necessarily derive from scientific knowledge. Humans learned to design and use tools or use elements from nature long before understanding why they were effective or even what the mechanisms were that supported them. Similarly, many scientific advances have not clearly contributed to technological applications, which can be a source of societal discontent. This shows that science and technology are related but independent enterprises, and this is true of psychology as well.

Relationships between science and technology are complex and permeated by social needs and interests. Technology is more clearly related to social interests, whereas science struggles to demonstrate its importance to society, except when it is demonstrated through technological advances. There are differences among societies in their understanding of the role of science, resulting in differential effects on financing, the use of scientific knowledge to evaluate social phenomena, and policy-making in response to social demands.

Both scientific knowledge and technology have limitations that are the source of arguments that question the trust that is placed on them by society. Basic research is questioned for its relevance, public understanding, and the use of public resources. Technology is questioned for its empirical support, proper evaluation of its results, relationships with groups of interest (economic and otherwise), and ethical standards that are associated with those interests. One of the most common criticisms of science is related to its relevance to human well-being. The argument suggests that human and financial resources that are directed toward understanding any problem in nature would be better employed in solving immediate problems of the population at any given time in history. The degree of social retribution in response to investments in science is difficult to calculate, but public policy groups around the world are currently developing models to measure such effects. Researchers have argued for many decades that the relationship is positive, but there is skepticism among the public, legislators, and others, most likely associated with a misunderstanding of the nature of scientific knowledge and its relationship with the development of technological solutions to social problems.

Psychology researchers in Latin America are often required to make explicit assertions about the social implication of their work. This might be easier for certain areas than others. However, this requirement sometimes results in speculation, and in the end, little or no results to show. The relationship between science and technology has adopted several forms throughout history. The ways in which they are



related to each other and to society have varied according to financing, the social understanding of science and technology, and societal organization, including its political model. Centralized societies with a vertical power structure may produce short-term results but are more limited in their reach, scope, and innovation. Decentralized societies are slower in knowledge production but are more innovative, and their results are set in society over the long term.

The model of development for science and technology in Latin America generally follows the US model that was developed by Vannevar Bush (1945), called the “reservoir model.” However, there has always been an emphasis on social applications, and so there is ambiguity about the real model that is used in the region. It is never a consistent model—it oscillates between the reservoir model and a technology-driven model. There are differences in financial support for science among countries. Brazil and Mexico have the most robust financial support, and other countries showing large variations over time.

It may be argued that the interaction between scientists and technologists in Latin America does not promote optimal development. In psychology, a large body of knowledge on animal and human behavior is not used for the development of applications to specific social problems. At the same time, many problems that should be addressed by proper technologies are treated by means of intuitive approaches, with little or no scientific support. In recent years, there has been a growing consensus on the need to use evidence-based treatments in all areas of application (Mustaca, 2004). This results mostly from changes in accountability in the health systems, but it extends to other areas as well.

Translational research has no tradition in the region, except perhaps in the medical sciences. Some of the principles of *translational research* might be very productive in the region as a way to promote the social recognition of scientific research. Combining groups of basic and applied researchers and specialized policy-makers might be very productive for improving the output of scientific research, the standards of treatments, and the acknowledgment of the importance of science for society. Psychologists in a growing number of countries are increasingly asked to participate in public policy, from writing concepts on social programs to offering their expertise in the development of new policy. This is encouraging and is accompanied by better training, more productive research, and changes in the status of the discipline and profession.

## The Structure of Research and Financing

Psychological research in Latin America is predominantly performed in universities at the level of graduate programs. Faculties and students associated with these programs represent the main force in psychological research. A structure to accommodate these groups is necessary for generating high-quality research in the field. Almost all universities in Latin America have several problems in their research structures, such as lack of technical support, minimal administrative capabilities,

and less-than-optimal working conditions. The minimum level of infrastructure that is needed to conduct research is gradually growing but at different rates, based on the intrinsic characteristics of each country. Middle-income countries, such as Argentina, Brazil, Chile, Colombia, Cuba, México, Puerto Rico, and Venezuela, have been able to systematically develop research structures, as opposed to lower-income countries, where identifying structured research systems is difficult.

Improvements in research structures in these countries strengthen higher education in psychology, increase the number of publications, and foster psychological information flow between developing and developed countries. Highlighting the major structural steps that have been taken in psychological research is very important, mainly in Argentina, Brazil, Chile, Colombia, and Mexico (Zorzetto, Razzouk, Dubugras, Gerolin, & Mari, 2007), but the positions of these countries are still very fragile. Although research in Latin America has grown substantially over the years, most higher education institutions do not perform any research at all and are only engaged in teaching activities (UNESCO, 2016). More than two-thirds of all graduate programs in the social sciences are offered in Brazil and Mexico (Vessuri & López, 2010).

One of the main reasons for this poor scenario is the cost of conducting research. Therefore, funding psychological research is crucial. As in many places in the world, research in Latin America is mainly sponsored by governmental agencies. On average, Latin American countries invest only 0.6% of their GDP in research, which is far behind the 2–3% that is devoted by most economically developed nations. In Latin America, Brazil spends 1.15%, followed by Argentina at 0.6%, Mexico at 0.56%, and Chile at 0.34% (Kalergis et al., 2016). The scarcity of research funding makes the fund allocation process, through peer-reviewed grant proposals, extremely competitive. When approved, the grants are generally subjected to substantial restrictions, with all-too-common delays in the release of funds.

Governments are the main funding agencies, and political and economic instability threatens research funding in Latin America. Countries with political problems often face interference with such funding, depending on who controls the funding agencies. Consequently, there might be a lack of clarity in the funding process. Countries with economic problems might impose significant budgetary cuts for scientific research funding. Therefore, one of the main challenges of investing in research is the ability of governmental agencies to provide stable, long-term funding to academic research groups, thus minimizing the threats that are imposed by political and economic instability.

## **Collaboration**

Science is a complex social activity, and collaboration is a key element of its growth and excellence. Scientific collaboration reflects a joint project of a working group. It encompasses different aspects of an academic event, such as research training, investigating research questions, organizing congresses, and editing scientific

journals to produce, discuss, and publish new scientific findings (Chinchilla-Rodríguez, Vargas-Quesada, Hassan-Montero, González-Molina, & Moya-Anegón, 2009; Katz & Martin, 1997). Several mutual benefits can be achieved through this type of collaborative work, including the access to and learning of new research methods, the division of responsibilities, the increase in competitive research funding, improvements in research productivity, better research visibility, and higher scientific quality.

Collaboration can occur at different levels, including research interactions between colleagues at the same institution, interinstitutional peer collaborations within the same country, and international collaborations among countries. At the international level, collaboration can occur between Latin American countries, developing countries, and developed countries in Europe and the United States. The dynamics of collaborations typically begin informally through cultural proximity and become stronger as a result of greater productivity (Jeong, Choi, & Kim, 2011). Publication co-authorship is one of the most concrete forms of evaluating scientific collaboration across academic fields (Katz & Martin, 1997).

Collaborations among psychological researchers in Latin America are one of the most effective ways to deal with research difficulties and limitations in these countries. Scientific collaborations among Latin American researchers have increased over the years, but it still lags compared with collaborations among European and North American countries (Kliegl & Bates, 2011; López-López, de Moya Anegón, Acevedo-Triana, Garcia, & Silva, 2015).

Participation in a Latin American research group appears to be the usual form of collaboration, and a common language is a convenient facilitator of the collaboration process (Garcia, López-López, Acevedo-Triana, & Pereira, 2017; López-López et al., 2015). For this reason, collaborations between Brazil, the primary language of which is Portuguese, and other Latin American countries are not as common as Latin American research group collaborations among Spanish-speaking countries (López-López et al., 2015; Nunes, 1993).

Writing research reports is one the main difficulties of Latin American scientific collaborations (Garcia, López-López, Acevedo-Triana, & Bucher-Maluschke, 2016). For this reason, publication and visibility of the research, which is quantified by the number of citations of this collaborative work, or by the impact factor of Latin American psychological scientific journals, is still incipient (Quevedo-Blasco & López-Lopez, 2011; VandenBos & Winkler, 2015). One way to overcome these negative impacts of writing difficulties is to employ English as the main language of science and increase collaborations with native English-speaking scholars (Fradkin, 2017; Hogan & Vaccaro, 2007).

Argentina, Brazil, Chile, Colombia, Mexico, and Perú generate the most published collaborative work among Latin American countries (Garcia et al., 2017; López-López et al., 2015). As discussed in the previous section, these middle-income countries have the best research structure in Latin America (Zorzetto et al., 2007). Therefore, the availability of a research environment, even if minimal, represents an important aspect to stimulate collaboration. Another characteristic of these Latin American countries is the presence of governmental research funding agencies.

Despite funding instability, these agencies support a good number of fellowships for psychology graduate training abroad, including training for those interested in pursuing international education in traditional research groups. This is part of the process of the internationalization of Latin American higher education (Gacel-Ávila, 2007) and contributes to cooperation among different research groups in psychology worldwide.

Spain, the United States, and the United Kingdom are the main scientific partners with Latin American countries (García, Acevedo-Triana, & López-López, 2014). France and Germany also have collaborations with Brazil (Vanz, 2009). This suggests that international collaboration involves multiple interactions among lower-, middle-, and higher-income countries for the development and exchange of contextually and culturally sensitive psychological knowledge. Increasing international collaborations is a critical issue for psychology as a global discipline because it allows people to share theoretical, empirical, and applied research while considering regional disparities with regard to knowledge that is produced and disseminated in different Latin American countries.

## Scientific Communication

The most important psychology conference in Latin America is the Interamerican Congress of Psychology, organized by the Interamerican Society of Psychology (SIP). The first Congress was held in the Dominican Republic in 1953. The most recent ones took place in Brasília, Brazil (2013); in Lima, Perú (2015); and in Mérida, México (2017). The 37th Interamerican Congress of Psychology will be held in Habana, Cuba (2019). Since 2004, SIP has also scheduled the Regional Congresses of Psychology. They have been held in Guatemala (2004), Cuba (2006), Paraguay (2010), Bolivia (2012), El Salvador (2014), and Argentina (2016). Many national psychological associations and many academic societies organize their own conferences on a regular basis. International psychological societies periodically organize academic events in the region. The most common destinations are Argentina, Brazil, and Mexico, but many other countries also host international conferences.

The International Union of Psychological Science (IUPsyS) first organized the International Congress of Psychology (ICP) in Paris in 1889. This important event has been organized in Latin America only once (Acapulco, México, 1984). The 33rd ICP will be held in Rio de Janeiro, Brazil, in 2024. It is expected that this event will be an opportunity to show the tremendous development of psychology in the Latin American region and also an opportunity for integration with the psychological community around the world.

During the first half of the twentieth century, a variety of general academic journals and magazines published articles on psychological issues. The first psychology journal was *Anales de Psicología de la Sociedad de Psicología* (1910) that was published in Argentina, followed by *Anales del Instituto de Psicología de la*

*Universidad de Buenos Aires* (1935), edited by Enrique Mouchet. In Brazil, Waclaw Radecki published *Trabalhos de Psicologia* (1928–1929). It was followed by *Arquivos Brasileiros de Psicotécnica*, later named *Arquivos Brasileiros de Psicologia Aplicada* and currently published as *Arquivos Brasileiros de Psicologia*, founded by Emilio Mira y López (1949). Then came *Acta Psiquiátrica y Psicológica de América Latina*, edited by Guillermo Vidal in Argentina (1954), and *Revista de Psicología*, directed by Luis Jaime Sánchez at the Universidad Nacional de Colombia (1956). *Revista Interamericana de Psicología/Interamerican Journal of Psychology* was founded in 1967, and its first editor was Carl R. Hereford. *Revista Latinoamericana de Psicología* was founded by Rubén Ardila in 1969. These last two journals played an important role in promoting communication among psychologists in the region. In the 1980s, a number of quality journals were founded. Among them were *Interdisciplinaria*, edited by Horacio J. A. Rimoldi in Argentina (1980); *Avances en Psicología Clínica Latinoamericana*, also founded by Ardila (1982); and *Revista Mexicana de Psicología*, edited initially by Juan Lafarga (1984) (Ardila, 1986; Centofanti, 1982; Gutiérrez, Pérez-Acosta, & Plata-Caviedes, 2009; Jacó-Vilela, 1999; Polanco-Carrasco, Salas, Gallegos, & López-López, 2017). At the turn of the twenty-first century, many other journals were founded. A detailed registry is necessary but difficult to compile. Many of these journals make efforts to be included in regional (e.g., Redalyc, SciELO) and international (e.g., Web of Science, Scopus) databases, but not all of them are included, making them invisible beyond their immediate context.

Scientific journals in the region have also grown in volume and quality. Since the publication of the books *Scientific Publications in Latin America* (Cetto & Hillerud, 1995) and *Scientific Journals in Latin America* (Cetto & Alonso, 1999), in which many authors showed the limitations and problems of scientific communication in the region, there has been a change in understanding at many organizational levels on the need for a more ambitious policy on research communication. Despite persisting differences among countries, there has been an improvement in the editorial quality of scientific journals, including peer review, indexing, and publication in international journals (Cardoso Sampaio, 2008; Cardoso Sampaio & Zoqui Paulovic, 2012; Nature, 2004). Some countries have established policies to improve the quality of journals. Brazil (Vessuri, 1995), Colombia (Gómez, 1999), and México (Bazdresch, 1999; Vessuri, 1995) have obtained positive results and the inclusion of a number of their scientific journals in Web of Science, Scopus, and other indexing systems and databases.

There has been a large increase in the number of electronic scientific journals. Additionally, many journals that previously had only print versions have changed their format to electronic or now have both formats. This change has important implications for financing, the evaluation process, the time of publication, and public access, among others. Rapid changes in the way researchers are interacting with the literature have been observed. Most researchers report reading scientific literature (especially journal articles) from their computers and other electronic devices, but electronic books are spreading at a slower pace. Why this is the case and how it

is different in Latin America from other regions of the world are not well understood.

Journals in Latin America face problems at different levels. They are affected by institutional instability. Although most journals worldwide are published by academic or professional organizations, most psychology journals in Latin America are published by universities. A concerning trend is that many universities want to publish a journal, but in many cases they do so solely to promote the publications of their faculty. This only offers an initial boost and can bring great risk in terms of endogamy, low quality, small readership, low impact, limited submissions, and limited growth for the journal. The role of the editor becomes one of dependence on institutional authorities, whose interests may be different from those of the editorial board.

Psychological journals in Latin America also face financial problems. A few journals are able to include their published material in databases and receive royalties for their publications. This, however, is not the norm. Most journals in the region are open access, which forces them to find financial support from academic organizations and in a few cases from the authors themselves, thus shifting the burden of support from the consumer to the producer of knowledge (Cockerill, 2006). This change in the financing model is likely to impose further difficulties for authors in weak systems and favor authors in countries with better financing. Unfortunately, such effects will only be evident in time, when bibliometric analyses are able to explore trends of publications in regional journals.

Journals that charge the authors a fee for publication do not publicly present their financial structure or financial results, so it is difficult to evaluate whether this model is effective in promoting better scientific communication in the region. Publication policy is not quite clear for journals in the region, beyond trying to conform to the standards of developed countries and publishing conglomerates. Publication policy that adapts to regional needs appears to be confined to specific psychology journals but is not sufficiently general to impact psychological research.

A number of countries in the region (e.g., Colombia and Mexico) have established a policy to incentivize research production. As a result, output has increased in a positive way, but certain areas of research that emphasize local and regional issues have been negatively affected, most likely because they are not well received in international journals, on which the best incentives are often assigned. The effect extends to research grants, policy-making, and training. The incentive system also increases the risk of promoting low-quality publications, paid publications in predatory journals, honorary authorship, power authorship, plagiarism, and other unethical behaviors (see Carneiro, Cangussú, & Fernandes, 2007). This is a cause for concern, and perhaps the system will have to be refined in the future to promote ethical, high-quality scientific production that also has an impact on academia and society.

Finally, a very important issue for serial publications in the region is *impact*. The ultimate purpose of measuring impact is evaluating the return of social investment in scientific research. Impact is not easy to measure. It sometimes has been measured in terms of technological results, but this type of measurement is clearly

limited because many scientific and academic products do not have a technological output in the short term. Other factors that influence impact include cultural change, social policy, and training, among others (for a multifactor model, see Godin & Doré, 2004). Scientometrics has developed a set of impact measures that are mostly related to research output or yield. They are also based on the level of acknowledgment of the product (or author) by the scientific community. This type of measure is easier to obtain and standardize but is only an indirect measure of the impact of research on society. Scientometric logics of impact have been so widely accepted in academia that it is now difficult to know what we really want to measure. We have accepted those measures as the only way to evaluate research impact, but they respond more to the interests of the international publishing industry than to those of society. We need to develop more refined measures of research impact and eventually use them as the basis for scientific research planning. For now, we are likely to continue hiring consultants from the international publishing and indexing conglomerates, not quite understanding where their loyalties lie.

Serial publications and books that are produced in developing countries (including Latin America) have traditionally had a low impact on the development of scientific knowledge worldwide. This is the result of various factors, such as the language of publication, the quality of publication, and cultural discrimination, among others.

The *language of science at this point in history is English*, as it was Latin, French, and German at other times. Even after facing the difficulties of learning a second language at the appropriate level for scientific publication, authors in these countries face additional dilemmas. If they publish their articles in English, then the impact of their work in their international academic communities will increase. If they publish in local languages (e.g., Spanish and Portuguese), then they will inform their local academic communities and support their national or regional journal, but their overall impact will be much lower. It is perhaps unsurprising that a growing number of journals in non-English-speaking countries publish their material either partially or totally in English. This might contribute to access to the research that is published in those journals, inclusion in databases, and overall acknowledgment of the research that is produced in those countries. Additionally, improvements in translation applications might also make the language barrier less important in the future as an obstacle to gaining access to research from around the globe.

Finally, journals in the region face problems that are associated with the implementation of peer-review as the standard of quality for scientific publication. There is a growing critical mass of psychology researchers in the region, which improves the quality of article reviews. However, the evaluation turnover is still slow, and the quality of evaluation is uneven. Overall, scientific communication in psychology has greatly improved in the region, but there is still room for growth and consolidation. A concerted effort by editors and the scientific community is under way, and a cultural change toward improving the quality of published research is occurring.

## Future Challenges

Psychology in Latin American countries has become a highly regarded profession. Society has high expectations with regard to its contributions to solving pressing social issues. Given historical and cultural roots that are related to knowledge dependency and low levels of innovation, the response of the psychological community to those expectations is generally not to study those problems and produce new knowledge, but rather to make use of knowledge that is produced elsewhere oftentimes without even making adaptations or studying differences between societies before applying intervention programs that are developed in other societies.

Despite economic growth in the region, a decrease in poverty, and improvements in many social indicators, including political stability, in many Latin American countries, psychology has a large role to play in these emerging societies. Some problems remain, such as inequality, poverty, and selective violence. Other new research problems emerge, such as social changes in family relationships, social relationships, demographic changes, and others, that have psychological components that should be understood and addressed.

In addition to applied problems that may not express themselves in the same way in other regions around the world, psychology in Latin America may have extraordinary opportunities to contribute to knowledge that is somewhat unique to the continent. We have a variety of indigenous communities that despite fast social and cultural changes still might be of interest for *cross-cultural psychology*. Similarly, Latin American countries have a vast number of animal species because of its geographical location, offering great opportunities for innovation and collaboration in *comparative research*.

Improvements in communication and collaboration create new opportunities to grow as a region, thus closing the gap that is observed among countries today. National, regional, and international organizations might contribute to this goal by supporting specific programs to improve training, research, and applications across the continent. This is already happening between some countries, so this expectation is not unrealistic. For example, the *International Project on Competence in Psychology* developed a taxonomy for core competencies in psychology in an effort to level the competencies that are required at the basic level of professional work in psychology and facilitate mobility. Many psychologists in Latin America participated in this project, providing input to generate the table of competencies. Once published, a number of professional organizations and universities have started to use this model to modify and improve training programs and licensing requirements. How this will affect training in psychology in the region is still unknown and should be a research subject using comparative and other analytical methods.

Training at the *graduate level* is growing fast because there is a large demand for training at the highest level. However, there is a risk in terms of quality assurance. Governments and academic communities need to work together to develop strategies to keep and improve graduate programs. Psychological research needs to be more innovative, more productive, and better supported by the public. Professional



and scientific organizations have an important role to play in these areas, working with both the research communities and the public.

Finally, we need to find ways to measure and improve the positive impact of psychology on society. We need to think more creatively to understand that local, regional, and international impacts are not necessarily measured the same way. Better ways to gauge this impact will benefit not only society but *also scientific development*. Psychology is a strong discipline and profession in Latin America. We have accomplished a lot, but there is still ample room for growth and improvement. Today, psychologists in Latin America play important roles in many areas of application. New areas of work will depend on our ability to understand basic behavioral phenomena, and this is only possible if we strongly support scientific research in our discipline. This is one of the best strategies to prepare the next generation of Latin American psychologists for exchanging ideas to produce, publish, and apply psychological knowledge that addresses key issues throughout the world.

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