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The Meaning of and Proposals for Latin-American Cooperation in Psychology

Significados y Propuestas Para la Cooperación Latinoamericana en Psicología

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The literature indicates several advantages and difficulties associated with international scientific cooperation. Due to the need to identify possible areas for cooperation between researchers in Latin America—a way of strengthening cooperation networks—the present qualitative study investigated the meaning of cooperation among Latin American authors and proposals to pursue this endeavor. A purposive sample of 26 researchers responded to 2 open questions. The responses were subjected to thematic analysis. Regarding the meaning of partnerships with other Latin American authors, 7 themes were proposed with focus on identifying the advantages and scope of cooperation and its long-term influence on the scientific and educational fields. The proposals for facilitating Latin American cooperation in psychology were arranged into 8 thematic groups. Based on the researchers' responses, the study results show the meaning of international cooperation in Latin America and proposals for its development; in addition, they reveal the complexity of regional cooperation, which involves not only scientific research, but also educational cooperation and the organization of scientific events.

Keywords: cooperation, collaboration, interpersonal interaction, behavioral science, social behavior

La literatura señala ventajas e inconvenientes asociados a la cooperación científica internacional. Debido a la necesidad de identificar los posibles puntos de cooperación entre los investigadores en Latinoamérica para un fortalecimiento de las redes de cooperación, el presente estudio de diseño cualitativo investigó el significado y las propuestas de cooperación con autores latinoamericanos. Una muestra intencional de 26 investigadores respondieron a 2 preguntas abiertas. Las respuestas fueron sometidas a análisis temático. En cuanto al significado de la cooperación con otros autores latinoamericanos, se proponen 7 temas centrados en identificar las ventajas y alcances de la cooperación y su influencia a largo plazo en el ámbito científico y educativo. Las propuestas para facilitar la cooperación latinoamericana en psicología se organizaron en 8 grupos temáticos. Con base en las respuestas de los investigadores, los resultados muestran el significado de la cooperación internacional en América Latina y las propuestas para su desarrollo; además, indican la complejidad de la cooperación regional, con la participación no solo en la actividad científica, sino también la cooperación en educación y la organización de eventos científicos.

Palabras clave: cooperación, colaboración, interacción interpersonal, ciencia del comportamiento, comportamiento social

Science is a social practice which necessarily shows that feature interaction influences the production and dissemination of knowledge (Subramanyam, 1983). For several years bibliometric studies have helped to identify and quantify the levels of cooperation in the interaction among researchers (Bras-Amorós, Domingo-Ferrer, & Torra, 2011; Subramanyam, 1983). Recognizing that capacity for cooperation, the analysis of interaction between researchers from different countries reveals the challenge of enhancing science generation efforts and academic communities. Therefore, this criterion of *internationality* is central to the development of science.

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So, international collaboration is an important form of scientific internationalization (Katz & Martin, 1997; López-López, 2014) and has grown in all areas of science (Kliegl & Bates, 2011; Nord et al., 2006; Wagner, 2006). Over the last years the development of consortiums by big international projects in many fields of science has made collaboration and cooperation necessary (Bozeman & Corley, 2004; Chinchilla-Rodríguez, Vargas-Quesada, Hassan-Montero, González-Molina, & Moya-Anegón, 2010; Frame & Carpenter, 1979; Nord et al., 2006). According to Leydesdorff and Wagner (2009), 23.3% of scientific production indexed by the Science Citation Index in 2005 presented international co-authorship. According to Kliegl and Bates (2011), based on 12 major journals of psychology from 1975 to 2007, international collaboration in psychology is growing. In 2005, 27% of the articles with an author from the United States (U.S.) involved the participation of at least one co-author from another country. Similar findings are reported by García-Martínez, Guerrero-Bote, and Moya-Anegón (2012) and Vera-Villarroel, López-López, Lillo, and Silva (2011), revealing increased international production and collaboration in psychological papers, both globally as well as in the Latin American context.

According to López-López, García-Cepero, Aguilar-Bustamante, Silva-Martín, and Aguado-López (2010), Iberian-American production in psychology with international collaboration in the 2005-2007 period is low, with 92% of article partnerships occurring within the same country. López-López, Silva, García-Cepero, Aguilar-Bustamante, and Aguado-López (2011) again point to the relatively low number of publications involving national and international cooperation, highlighting the lack of cooperation in Latin American psychology based on regional psychology journals included in the Redalyc system between 2005 and 2007; however, a subsequent analysis shows that, although collaborative is low, one factor that could help the growth in collaboration between researchers in different countries are the new international or local indexed journals. This is a phenomenon common to Latin American journals in the last 10 years. So, López-López et al. (2011) highlight the need to consolidate cooperation networks and modify joint research practices and publication in Latin America. The need for integration and cooperation in Latin American psychology has been discussed by several authors (Koller, Sarriera, & Abreu e Silva, 2008; Livia Segovia, 2008; Martínez, 2008; Puche Navarro, 2008; Vera-Villarroel et al., 2011).

Although collaboration in science can be evidenced and measured in multiple ways and through various products, such international cooperation in scientific activities can best be presented and administered as a communication network beyond the direct control of research funding agencies (Frame & Carpenter, 1979; Wagner, 2006). Wagner and Leydesdorff (2006, September) regard patterns in international scientific collaboration as network effects, since there is no political institution mediating relationships at that level. Like other complex adaptive systems, its order arises from the interactions of hundreds of agents employing self-interest strategies. One effect of the growth of assessment systems within the educational and scientific systems is linking researchers to networks to optimize efforts (López-López, 2014).

Such networks are dynamic. Wagner (2006) suggests that a change has occurred in the organization of science during the 1990s, moving away from a center-periphery model to the emergence of regional hubs worldwide, including peripheral countries in an extensive global network. These networks create links in science that increase the chances of exchanging knowledge in multiple directions, from developed countries to developing countries and vice versa. Local links also make it more likely for knowledge creation to be focused on issues relevant to developing countries and not only on issues of interest to scientists only in developed countries. Taking into account that cooperation strategies and the factors that create these interactions are varied and sometimes may respond to interest in a particular purpose, variables such as gender, the coordination position, and the type of coordination, among others, are topics to consider inside the dynamics of networks (Bozeman & Corley, 2004).

According to Newman (2001), scientific collaboration networks form “small worlds” in which pairs of scientists remain quite close. This small size is a crucial trait of a functional scientific community. Networks are highly concentrated in clusters, meaning that two scientists have a much higher probability of collaborating if they have a third collaborator in common. Thus, a researcher introducing his/her collaborators to another one is important for the development of scientific communities (Bozeman & Corley, 2004; Chinchilla-Rodríguez et al., 2010).

Besides networking, another factor to consider is the different levels at which cooperation occurs. Glänzel and Schubert (2004) proposed three levels to analyze international scientific cooperation: individuals, institutions, and countries. Collaboration between individuals is at least partially subject to other motivations involved in the collaboration between institutions and countries. These findings are consistent with

previous descriptions of both quantitative and qualitative factors that facilitate and promote the creation of networks for cooperation (Frame & Carpenter, 1979). According to the authors, the cooperation can promote research activity, productivity, and impact. Therefore, it should be encouraged and supported by research management systems and science policy. Hwang (2008) and Bozeman and Corley (2004) refer to sociocultural factors, including economic, cultural, organizational, and political factors, as well as to the multilayered center-periphery dynamic in the globalization of science.

There are several forms or modalities of international scientific cooperation (Sebastián, 2000), such as human resources training, the implementation of joint research projects, joint publications, the exchange of researchers (professors, students), joint education programs, participation in collaborative networks, joint participation in existing graduate courses and in international programs for scientific and technical cooperation, among others. Though these modalities are varied and allow the quantification of cooperation levels, they are limited to products that can be made visible in international indexing systems, i.e., there are aspects of cooperation which cannot be published but which are still effective, for example, meetings, lecture, and e-mails (Bozeman & Corley, 2004; Chinchilla-Rodríguez et al., 2010; Frame & Carpenter, 1979; Rantanen & Smagner, 2011).

International scientific cooperation also depends on the relationship between researchers (Chinchilla-Rodríguez et al., 2010; Frame & Carpenter, 1979). According to Vanz and Stumpf (2010), a researcher who intends to collaborate must reach an agreement with his/her partner about the concept, objectives, tasks, and methodology of their investigation. According to the authors, good communication among researchers, social skills, and strong teamwork skills are fundamental features of scientific collaboration. For da Silva (2007), international cooperation also requires the possibility of choosing partners, the joint definition of the research topic or project, the division of labor, and the establishment of the objectives to be achieved, among other elements. The preservation of international cooperation requires commitment, trust, and respect, as well as the fulfillment of common goals and of all the agreements reached with one's partners. According to da Silva (2007), international cooperation requires a prior knowledge regarding the partner and the definition of areas of mutual interest, followed by exploratory actions which can later inform bilateral agreements.

This research aimed at investigating: (a) the meaning of international cooperation in psychology between different Latin American countries and (b) proposals for facilitating international cooperation in Latin American psychology, from the perspective of researchers who have published scientific papers with other Latin American authors.

Although the literature on international cooperation provides various definitions of *cooperation*, this investigation aimed to present the perspective of authors who had already cooperated with other scholars from Latin America, in order to understand what they mean when they speak about scientific cooperation in the continent, that is, what aspects or elements are included in their description of the phenomenon. The meaning of cooperation has already been the subject of investigation in papers belonging to areas such as engineering, education, and psychology. Olfati-Saber, Fax, and Murray (2007) proposed discussing the meaning of cooperation and concluded that those involved in a cooperative task should share the intention to cooperate and they should follow "a common protocol that serves the group objective" (p. 217). Yackel, Cobb, and Wood (1991) also note that the "meaning of cooperation is negotiated by the teacher and the students in the course of their social interaction" (p. 397). In psychology, Scopinho (2007) introduces a paper by pointing out that "this article deals with the meaning of cooperation" (p. 84).

Method

This was a qualitative cross-sectional research.

Participants

Potential participants were identified and contacted, based on the information available in Psycinfo. All researchers in behavioral sciences (psychology, psychiatry, neurosciences and psychiatric nursery) from Latin American countries and from both sexes who had co-authored a paper with another Latin American researcher in the period 2001-2010, identified as the corresponding author in Psycinfo, were contacted. A total of 42 behavioral scientists responded to the questions.

In a first version of this investigation, the responses of the 42 participants were thematically analyzed. This first analysis resulted in seven themes regarding the meaning of partnerships with other Latin American authors and eight themes regarding the proposals to facilitate Latin American cooperation in the behavioral sciences.

In order to focus the analysis on psychologists, 26 Latin American researchers in psychology, among the 42 participants, who had already published at least an article in a journal indexed by Psycinfo in collaboration with another Latin American author/s, were selected as participants of this investigation and discussed in this paper. Inclusion criteria for participation in the study were: (a) to work in a research institution or university based in Latin America and (b) to have published at least one scientific paper in collaboration with author/s from another Latin American country.

Pope, Ziebland, and Mays (2000) suggest that, in qualitative investigations, "the sample size should be directed by the research question and analytical requirements, such as data saturation" (p. 115). Data saturation is "the point in data collection and analysis when new information produces little or no change to the codebook" (Guest, Bunce, & Johnson, 2006, p. 65). As thematic analysis resulted in the same thematic categories for both groups (all 42 participants and the 26 psychologists), it was considered that data from 26 participants had already reached saturation concerning the points investigated. As no new themes have been advanced in the group of 42 participants, it was considered adequate to focus the discussion on the group of 26 psychologists. The participants included in the sample are listed in Table 1 (participants are identified from P1 to P26).

Table 1
Participants, by Gender, Country and Area

Participant	Gender	Country	Area
P1	Female	Colombia	Organizational Psychology
P2	Male	Chile	Clinical Psychology
P3	Male	Colombia	Animal Psychology
P4	Female	Colombia	Psychobiology
P5	Male	Colombia	Experimental Psychology and others
P6	Female	Argentina	Psychometrics
P7	Male	Argentina	Community and Health Psychology
P8	Female	Peru	Educational and Developmental Psychology
P9	Male	Chile	Educational and Clinical Psychology
P10	Female	Peru	Developmental Psychology
P11	Female	Mexico	Social Health Psychology
P12	Female	Chile	Community and Clinical Psychology
P13	Male	Colombia	Psychobiology
P14	Male	Chile	Cognitive Psychology
P15	Female	Peru	Developmental Psychology
P16	Male	Chile	Experimental Psychology
P17	Female	Colombia	Developmental and Cognitive Psychology
P18	Female	Brazil	Psychobiology
P19	Male	Mexico	Ethnopsychology
P20	Female	Guatemala	Transcultural Psychology
P21	Male	Brazil	Psychobiology
P22	Male	Argentina	Educational Psychology
P23	Male	Colombia	Psychology and Scientometrics
P24	Male	Argentina	Psychobiology
P25	Female	Chile	Health and Clinical Psychology
P26	Female	Mexico	Social Psychology

Instrument

A questionnaire was specifically developed for this investigation with two open questions about the meaning of partnerships in research with other Latin American authors and proposals for the development of cooperation with other Latin American researchers in the behavioral sciences.

The two questions were presented in Spanish or Portuguese, according to the language spoken by each respondent:

(a) Qual o significado de parcerias com investigadores de outros países latino-americanos para você como pesquisador, para sua instituição e para seu país? ¿Cuál es el significado de alianzas con investigadores de otros países latinoamericanos para usted como investigador, para su institución y para su país? [What is the meaning of the alliances established with researchers from other Latin American countries for you as a researcher, for your institution, and for your country?]

(b) O que você faria para facilitar parcerias com outros latino-americanos em sua área de investigação? ¿Qué haría usted para facilitar la cooperación con otros investigadores latinoamericanos en su campo de investigación? [What would you do to facilitate cooperation with other Latin American scholars in your field of research?]

Other points were also been investigated using closed and open questions, but this paper only refers to the two central questions. Similar methods have been used to identify strategies and opinions about the cooperation (Bozeman & Corley, 2004).

Procedure

Once identified, potential participants were invited to participate and complete the questionnaire.

Since the responses were sent as an email attachment, sending the responses back was considered to indicate the participant's agreement to be part of the investigation, given that the objectives were explained together with the questions sent. Investigators were contacted by email, using the email address reported in the article published in cooperation with other researchers. The questions were sent to those who agreed to participate.

Analysis

The content of the two open questions was thematically analyzed. According to Braun and Clarke (2006), "thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data" (p. 79). Thematic analysis has been employed to analyze written material, including written responses to open-ended questions (Pollio & Ursiak, 2006). As suggested by Braun and Clarke (2006), the thematic analysis followed six phases: familiarization with data, generation of initial codes, search for themes, review of themes, definition and naming themes, and producing the report. Comparisons and reviews were used to reach a single system of classification and organization of the material. The reviews and comparisons made it possible to harmonize the structures of the material analyzed with the theoretical structures that guided the data organization.

Results

Regarding the meaning of partnerships with other Latin American authors, seven themes were identified. The proposals to facilitate Latin American cooperation in psychology were arranged into eight thematic groups.

Meaning of Cooperation

Advantages of Latin American scientific cooperation. Partnerships with Latin American researchers were recognized as relevant, their meaning being regarded as "important" (P8). Similarly, "establishing alliances with researchers from other countries is fundamental" (P15). This importance is not restricted to researchers, but also involves institutions and countries: "these days we cannot think only about

local research. Society development requires global investigation to enable the development of institutions and countries in general" (P15).

Other statements indicated the contribution of cooperation to the advancement and improvement of research. For some participants, cooperation accelerates scientific advancement (P4, P24) or opens new opportunities for research, funding, and exchanges (P3).

Cooperation promotes Latin American science: "it has generated a lot of growth for my research group and my university" (P13). Moreover, cooperation is of "great importance to strengthen Latin American research, especially in the context of the weight of the investigation conducted in the northern hemisphere" (P12). Cooperation enables scholars to extend and improve the quality of the research conducted, increasing the potential for success of their research efforts: "to have alliances means joining forces to achieve goals, objectives, purposes, and the consolidation of projects and resources in the most fruitful manner possible for all parties involved" (P1). Cooperation contributes to strengthening research and enhancing its quality, as "these partnerships lead to the strengthening of the line of research itself" (P9).

Cooperation creates new lines of research: "as a researcher, I was able to give rise to several lines of work and I was able to perform experiments in other laboratories" (P13). A single participant believes that cooperation with other Latin American authors will "hardly bring in technological advances and improvements in publication quality" (P18).

Researchers rarely mentioned how cooperation took place. One participant stressed the importance of establishing open and reciprocal cooperation arrangements (P1). The existence of common needs and problems in Latin American countries makes Latin American partnerships more valuable: faced with common problems, it is fundamental to "enhance international research teams focused on issues of common interest" (P25) to "work together on similar problems that concern our countries" (P10).

Generally, partnerships with other Latin American researchers were recognized as important, because they promote the advancement and expansion of research, its improvement, strengthening, and optimization. Increased reporting, new cooperation modalities and the analysis of the scientific production of countries and regions with similar circumstances could increase motivation and the perceived impact of this interaction.

Cultural exchange and network formation and expansion. Cultural exchange involves the interchange of information and people, which makes it possible to establish more general cultural ties between different countries. This involves "accessing a cultural exchange that is always interesting" (P24) and "knowing the reality of research centers in other countries" (P2). One of the ways to achieve this cultural exchange is academic exchanges: "this also implies the possibility of exchanges of students and teachers" (P22), thus, academic exchange is part of scientific cooperation.

For several participants, international scientific cooperation is related to the formation and expansion of cooperation networks. Networking facilitates sharing knowledge and experiences. Thus, according to the participants, scientific cooperation requires "establishing networks" (P5). On the other hand, the existence of cooperative work "makes it possible to expand exchange networks, including undergraduate and graduate students" (P9). Partnerships are also identified as the starting point for the formation of cooperation networks (P17).

Networks are seen as necessary for cooperation: "I am convinced that there is nothing without networks. Networks and academic alliances contribute to the life and mobility of researchers and students" (P13).

Knowledge and resource sharing. Sharing knowledge, experiences, and resources (financial, human, technical, and methodological) makes it possible to generate new knowledge. Sharing fosters the creation of a common knowledge base or databases. "For the country, it means the ability to benefit from research done in other places and contexts where people with similar needs and shortcomings live" (P11). The possibility of accumulating and exchanging information is part of cooperation: "the greatest contribution is to directly enhance the scope of our knowledge of a particular phenomenon" (P26); in addition, cooperation "allows the exchange of ideas" (P23).

Sharing this knowledge and experience is not limited to the scientific production of other countries; it also enriches and increases the integration of knowledge or "establishes common knowledge between countries" (P25), helping to "compare similarities and rethink differences" (P15).

The integration of available knowledge (exchange of experience) can generate the search for new knowledge, leading to new theoretical and methodological approaches. Another possibility would be to share resources (technical and methodological) for the generation of new knowledge, which would result in the strengthening of local or national research with the input of resources from other research centers. For the respondents, international cooperation in the continent can open new possibilities of access to resources, allowing researchers to share complementary resources: "sharing resources" (P24), "complements human and technical assets, which are scarce in Latin America" (P16), and "... makes it possible to exchange financial support" (P23).

The possibility of technology transfer is highlighted by a Brazilian researcher, who states that such partnerships are "even more important when they transfer technology to Brazil ... I find it very important to bring to Brazil (and to my institution) new techniques, new approaches, and new ideas" (P21).

The statement refers to the sharing of previously acquired knowledge, but also to the production of new knowledge. Cooperation makes it possible to use available knowledge and methodological resources in the production of new knowledge: "to the extent that new methodologies are incorporated, our theoretical advances are integrated with those of other groups which are interested in related topics" (P4); also, "alliances represent an important opportunity for the scientific exchange of ideas, which consists in the ability to exchange information, to replicate studies, to conduct joint studies" (P22).

Variety brings new possibilities for research: "the diversity of approaches, methods and references is always a resource that results from these collaborations" (P9).

Thus, knowledge sharing is associated with sharing resources for the production of new knowledge. On the one hand, it is necessary to share knowledge, ideas, theoretical approaches, and experiences (from other countries with similar needs and deficiencies) and to promote the integration of knowledge (based on similarities and differences). On the other hand, there is a need to share technical, human, financial, and methodological resources, culminating in the production of new knowledge or the replication of studies through joint research integrating new theoretical and methodological advances and expanding databases. The diversity of knowledge, approaches, and methods brings new possibilities for research development.

Comparing results, diversity, and theory validation. Scientific cooperation in Latin America affects the scientific production internally, contributing to the production of knowledge, opening new possibilities for the comparison of situations and data, and generating theoretical advances that directly affect scientific activity. The social and cultural diversity of Latin America can contribute to the advancement of Latin American science. The opportunity to investigate a broader and more diverse social and cultural reality opens up new possibilities for comparison, which are not available in each individual country.

The opportunity to compare and contrast data from different areas and populations in Latin America could contribute to the development of Latin American psychology, as pointed out by researchers: "to contrast the findings of scientific research" (P5).

The possibility of performing comparisons should integrate new research, so that further research should "expand and generate more multicultural diversity in terms of samples and the results" (P2). This comparison has practical consequences, allowing access to new situations and solutions; in addition it has important theoretical consequences in the context of the production of scientific knowledge, resulting in a greater power of generalization: "partnerships increase the power of generalization through joint efforts to empirically test the hypotheses raised in different scenarios" (P26), which could contribute to "validate theories" (P5).

This opportunity of expanding the possibilities of generalization is a significant advance that only international scientific cooperation can provide: "to expand the generalizability of the findings by using a larger sample [from different countries], thus determining cultural influence on the results of the variables analyzed" (P10). Cultural issues are cited as an enriching factor of Latin American scientific cooperation and one that enhances international science with data from another culture or cultures: "empirically verifying psychological aspects linked to Latin American culture as opposed to Anglo-American culture" (P25). In addition, "one of the big advantages is being able to do multidisciplinary research, though it is hard, and the other is to do research across different cultures" (P20).

Diversity and comparability are central factors associated with Latin American scientific cooperation. These comparisons allow scientist to not only encounter similar situations and find alternative solutions, but also to advance scientific knowledge by exploring situations with cultural and historical similarities and differences. The comparison of data from different areas and populations of Latin America, given their

social and cultural diversity, may foster theoretical advancements as well. Thus, comparison affects not only practical solutions, but the advancement of science itself, due to the expansion and diversification of its object of study.

Collaboration in (graduate) education and scientific events. Participants also mentioned collaboration in education, especially at the graduate level, and in scientific events: "to collaborate in activities such as conferences, seminars, and graduate education" (P2). Some highlighted joint participation in scientific events when referring to the "organization of events, presentations at international conferences, etc." (P9). A Brazilian researcher noted that the international scientific collaboration in which he/she takes part is associated with the internationalization of graduate programs, which allows contact and joint scientific production with other countries: "the reason behind so many publications with Colombian researchers is that… I had many graduate students from Colombia" (P21). The impact of scientific partnerships in graduate teaching and scientific events reveals the important role of graduate courses for the development of science in Latin America, as well as the connection of research with regional events.

Scientific impact. Cooperation increases the scientific impact of Latin American science and promotes its dissemination and visibility. Cooperation "increases the visibility of Latin American science" (P6), "results in visibility of knowledge for all" (P23), "significantly increases the visibility of our own work within the region and, by extension, at the international level" (P14), and "gives us international visibility and impact" (P18). Cooperation brings visibility and prestige for researchers: "[Prestige] is primarily for the researcher and the field of study" (P26) and it "will give both national and international visibility [to the research area]" (P9). It also enhances institutional visibility and prestige: "for my institution what is important is the prestige it will obtain and to get noticed due to such cooperation, which also benefits the country" (P26), "for the institution it brings a wider prestige and the opportunity to broaden its horizons and visibility" (P22).

Cooperation is seen as positive for the scientific development of Latin American countries, because it connects them with the international scientific community: "for the country is essential to participate in the 'scientific world'" (P22), "the country obviously thrives on that too as it represents visibility and strength" (P13).

In short, as pointed out by researchers, scientific cooperation has a positive impact on research areas, research institutions, and national science in general and on its place in the international scientific community.

Social and political impact — national, regional, and international. According to one participant, scientific cooperation in Latin America has "a social meaning of hope to solve the problems of inequality, insecurity, poverty, and social development" (P19). International scientific cooperation alliances result in social advances, enabling institutions to better deal with social problems, and allowing researchers to conduct joint work on behalf of the population of each country: "for me as a researcher, it is the ability to establish partnerships that can lead to joint projects for the benefit of the people of our countries" (P11). Cooperation strengthens national research institutes and allows them to achieve their goals, "promoting the full health of the population through the generation and dissemination of knowledge, innovation in health systems, and the training of human resources for public health" (P11).

In these cases, scientific cooperation promotes the empowerment of each nation, making it possible for its scientific activity to have a greater impact on its national social reality. Faced with Latin American reality, scientific cooperation can bring benefits not only to the academic and scientific sphere, but also to the social life of every country, contributing to equality and social welfare. In this regard, scientific development can be considered strategic for the development of the whole continent and is associated with the economic and political integration of Latin America. Thus, scientific cooperation can be seen as part of the efforts aimed at attaining the social, political, and economic development of all Latin America.

Proposals to Facilitate Latin American Cooperation in Psychology

Organization and participation in events. An action suggested to promote scientific cooperation in Latin America is participation in events or conferences, for instance, "to attend at least once a year at international events where we can disseminate our results while getting information about the progress of our colleagues working in similar lines or methodologies" (P4). Participation in local, regional, and international events opens the possibility of contact with other investigators. Thus, it is important "to promote

participation in local, regional, and international events" (P1) and "to promote attendance at institutional events" (P1). Beyond participating, the participants also suggest organizing meetings or events, for instance, "to organize exchange forums (conferences, workshops, courses, etc.), to promote knowledge and linkages between researchers, connecting their areas of expertise and interest" (P11) and "to promote the realization of events that allow the exchange of researchers" (P23), thus promoting contact with other researchers. These events could be local, "to facilitate meetings, conferences, and local workshops" (P9). They may also be regional, to involve Latin American countries: "organizing major conferences in Latin America" (P24) or "generating greater visibility and better communication about regional conferences" (P14); alternatively, the events may be international: "specific international meetings" (P25). These meetings would foster mutual knowledge and cooperation: "A first step is to know each other and to know what each one does, and to carry out joint projects" (P1).

Associations and cooperation networks and increased communication. The respondents refer to the need "to create partnerships or networks" (P2), which involves participating in and organizing scientific associations and scientific cooperation networks. The creation of research networks is necessary for broadening international scientific cooperation. Proposals suggest the "generation of networks ... and shared work agendas" (P17) and "formal and informal research networks" (P12). These networks could be formal or informal, actual or virtual, may share a common agenda, share interests and common goals, and coordinate actions.

The use of social networks is suggested for enhancing communication among researchers, for instance, "social networks could connect colleagues with common interests, so they can collaborate" (P20). Increased communication could be attained, for instance, by "creating discussion forums" (P2). In sum, participants propose the organization of researchers in scientific associations or networks, using the internet, and increasing communication with social networks.

Investment in science and international scientific cooperation. Some respondents mention financial issues more broadly, urging countries to "improve science and technology budgets" (P19). Some propose an optimization of the available funding sources, for instance, "using the potential of agencies, such as the CNPq [Conselho Nacional de Desenvolvimento Científico e Tecnológico], Colciencias or universities which make specific calls for international cooperation" (P4). Some participants pointed out the need for specific funding to support cooperation, stating that governments should "expand financing lines devoted to cooperation" (P24). Proposals contemplate the increase of resources for science and technology, the optimization of available resources, and the creation or expansion of specific funds for cooperative research.

Administrative issues. The proposals aim to simplify administrative processes linked to research, e.g. to "make migration systems easier" (P19). Other proposals include more extensive organization systems and the formalization of scientific cooperation. In sum, these proposals emphasize simplification and organization to enable cooperation.

Joint research projects and programs. Some proposals refer to joint projects and research programs involving several integrated projects, in order "to promote multicenter research" (P11). The proposals include different phases or activities, from planning and preparing shared research projects to devising "mutually relevant joint research" (P21).

It is necessary to finance joint research projects and so researchers should "request funding" (P26) for them. The need to expand and create lines of funding for research cooperation is marked: "to generate funding for multi-center studies on priority issues for the states involved" (P7). Joint research programs should be more extensive and involve multiple projects or other activities. This proposal includes phases prior to the research project, such as creating a directory of institutions.

Another proposal for a research program presents more details, such as "developing concrete cooperation programs whose funding would require certain products in terms of publications, visits, courses, co-supervision of graduate work, etc." (P3). In this case, there is an integration of various actions and goals, such as publications, visits, courses, and conducting joint graduate studies. There is a concern to integrate research and graduate education. Another proposal adds extra elements: "to establish contact with other researchers, involve them in specific research projects, and hold meetings and communicate more over the internet" (P5).

Exchange of students and researchers. Proposals envisage the exchange of researchers: the respondents refer to "academic exchange for short stays or postdoctoral research" (P16). The proposals also include students: "sending and bringing students to take part in this research" (P21). For the participants, it would be necessary to "facilitate the exchange of teachers and students" (P22).

International cooperation in education. Education in Latin America, should "foster the importance of international cooperation among young researchers" (P5). Cooperation should strengthen graduate education and higher education should foster cooperation.

Dissemination of Latin American scientific knowledge. The dissemination and use of Latin American scientific knowledge by the Latin American scientific community is proposed: "to promote the use of Latin American scientific knowledge at all levels: education, research, and practice" (P23). A respondent also suggests "reading publications by colleagues, quoting them and using them for teaching" (P12), as well as "reading more of the scientific research produced in Latin America/Iberian America" (P1) and "quoting/using scientific literature of our countries" (P1).

Other actions include the participation of Latin American researchers in editorial boards: "the inclusion of researchers from different countries in the editorial teams of existing journals" (P7) and the joint production of books, which: "would promote … the publication of books by authors from various countries simultaneously in several countries, i.e., with co-editors of two or more countries" (P7).

Discussion

The literature has dealt with scientific cooperation mainly on the basis of quantitative data, indicating the existence and extent of cooperation by means of co-authored publications. In some cases, authors also seek to investigate the motivations for those partnerships. Examining the meaning of partnerships for experienced researchers regarding cooperation, along with their proposals for facilitating cooperation can help us to understand the meaning that cooperation has for these researchers.

In brief, the meaning of a partnership involves its relevance, functioning, and results. Thus, its importance is associated with the advantages of Latin American scientific cooperation. Its functioning involves cultural exchanges and the formation and expansion of networks, the sharing of knowledge and resources, and the comparison of research results, diversity of data, and validation of theories. Its meaning goes beyond research itself and involves collaboration in graduate education and scientific events. Results include its scientific impact in terms of knowledge dissemination and visibility, and national, regional, and international social and political impact. This perspective is congruent with other quantitative research about cooperation and its associated feelings, motivations, and purpose.

The researchers' proposals included organizing and participating in events, the creation and expansion of cooperation networks and increased communication, increased investment in science and international scientific cooperation, overcoming barriers and administrative difficulties, the development of joint research programs and projects, the exchange of students and researchers, international cooperation in graduate education, and the dissemination of Latin American scientific knowledge. Several of these proposals are found in the literature on international cooperation.

As noted in the literature, international scientific cooperation is not restricted to a single collaboration form or model; instead, it occurs in different modalities (Sebastián, 2000), such as human resources training, the implementation of joint research projects, joint publications, the exchange of researchers (professors, students), joint continuing education and distance education programs, participation in collaborative networks, and joint participation in existing graduate courses and in international scientific and technological cooperation programs, among others. This interaction has been facilitated by the use of new technologies, although this type of cooperation has not always been successful: while a physical barrier that hindered interaction among researchers has fallen, the lack of personal contact may decrease the feelings of confidence that physical interaction can convey. However, the breakthrough resulting from these new methods and technologies cannot be ignored.

The proposals presented highlight cooperation instead of collaboration. Da Silva (2007) considers collaboration and cooperation as different modes of international relationship. Collaboration is considered inequitable and asymmetric, because it implies the existence of a main participant who is responsible for the project/program and owns the most interesting results from the point of view of strategic, industrial, and commercial application, while others are just supporting members. Must (2008), when dealing

with international cooperation between countries, recognizes the existence of equivalent countries and collaborating countries (usually in the relationship between larger and smaller countries). In general, the proposals presented take into account the prerequisites for international cooperation cited by da Silva (2007), such as the choice of partners, a joint definition of the research topic or project, the division of labor, and the establishment of the objectives to be achieved, among others.

The proposals to facilitate cooperation with other Latin American researchers include initiatives for spreading Latin American scientific knowledge, which may contribute not only to the dissemination of Latin American science, but also to the formation of partnerships between researchers in the continent.

According to Sartori and Pacheco (2006), Latin America presents an incipient and heterogeneous scenario regarding research networks, one in which the infrastructure of scientific communication and information takes precedence. Specifically in the area of psychology, Sampaio (2009) discusses the importance of organizing and disseminating the knowledge generated in Latin America, highlighting the importance of identifying and retrieving information. According to the author, it is necessary to give visibility to knowledge, foster cross-citation between authors from the region, and promote the use of information as a tool for improving regional quality of life. Finally, the identification of authors and institutions can lead to potential collaboration. This cooperation should result in greater scientific impact, visibility, strength and prestige, while at the same time broadening the horizons of researchers, scientific disciplines, institutions, and countries, at both the regional and international levels.

Final Considerations

Scientific cooperation in Latin America has a broad and multifaceted meaning for researchers in psychology. Its benefits include national and international social impact, permitting interconnection between researchers from different countries, creating and expanding scientific collaboration networks, and sharing knowledge and resources for the advancement of psychological science. Collaboration involves scientific production, scientific education, and scientific events; in addition, it has social and political consequences, increasing national, regional, and international scientific impact.

The proposals affect different agents of the Latin American scientific community, including institutions involved in research and graduate education as well as entities linked to scientific policies. Thus, actions should start from different points in the cooperation system, including researchers, their institutions, scientific associations, and others, in order to disseminate knowledge, foster networking and implement joint projects and joint research programs. Any and every part of the cooperation system can act to promote it.

As for psychological science, not only the establishment of new relationships helps to generate an academic community that can directly impact production levels, as shown in multiple bibliometric studies (Bras-Amorós et al., 2011; Chinchilla-Rodríguez et al., 2010; García-Martínez, Guerrero-Bote, Hassan-Montero, & Moya-Anegón, 2009): identifying opportunities associated within the horizons and interests of researchers can generate better quality processes. The indexes of collaboration between researchers could be a central topic in the evaluation of international indicators, not only for researchers but also for institutions (Salazar-Acosta, Lucio-Arias, López-López & Aguado-López, 2013).

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