

Science communication in Latin America: what is going on?

Journal ISSN number: 2054-5770

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10-09-2014 Cite as 10.15180; 140205 Discussion

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Published in [Autumn 2014, Issue 02](#)

Article DOI: <http://dx.doi.org/10.15180/140205>



Abstract

In May 2014, Latin America was the stage for the 13th International Public Communication of Science and Technology Conference (PCST 2014). It was the first time that this important international conference had reached the region since its launch in 1989, and it provides a good opportunity to discuss science communication in Latin America. The region is huge and extraordinarily diverse. As such, this article is only the starting point of a conversation on the subject: here the author presents an overview of the field in the region, highlighting some of the landmarks and discussing some challenges faced.

Component DOI: <http://dx.doi.org/10.15180/140205/001>

Keywords

Latin America, PCST Conference, hands on science centres, science journalism, policy for science communication, science communication research

Introduction

In May 2014, Latin America was the stage for the 13th International Public Communication of Science and Technology Conference (PCST 2014).

The PCST conference series is among the three most important international forums on science communication. While the other two – the World Conference of Science Journalists and the Science Centre World Summit (for those working in hands-on science centres) – target specific sectors, PCST joins together everyone: science journalists, science museum and science centre staff, science theatre directors, artists, scholars of science communication, scientists who deal with the public, public information

officers for scientific institutions and many others interested in these issues. It is a very diverse and rich environment for sharing and discussing how to engage society in science and technology.

Held in Salvador, Brazil, PCST 2014 was, like other PCST conferences, a science communication marathon: from the 452 proposals submitted, 342 were accepted into the programme and these were distributed across 14 parallel sessions^[1] with simultaneous translation for keynote talks.

Since its launch in 1989, the conference has moved every two years to a different part of the globe. However, it reached Latin America for the first time only in 2014. It is not surprising, then, that 56% of the 507 science communicators from 49 countries who participated in the conference were from Latin American countries. Europe represented 26% of the participants, while other regions provided fewer delegates: for example Asia 6%, United States and Canada 5% and Africa 4%. Overall, 61% of the participants were from the developing world.

Without losing its international focus, the conference provided a good opportunity for discussion about what happens in science communication in this part of the world. The organisers therefore designed some of the sessions to address regional needs (including those of regions outside Latin America). In this discussion piece I will map out some aspects of science communication in Latin America, highlighting some of the challenges.

First of all, it is important to remember that Latin America is a huge region of extraordinary diversity. There are social, cultural, economic and scientific differences between countries and even within the same country.

Figure 1



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Two Ecuadorian women adapt technology to their own needs by creating a sunshade out of a satellite dish

DOI: <http://dx.doi.org/10.15180/140205/008>

Science communication and radio

In the case of Brazil, for example, it could be said that science communication reached the region even before science was consolidated: science communication activities have been observed for at least two centuries. As soon as the prohibition of printing in Brazil was suspended in 1810, newspapers such as *A Gazeta do Rio de Janeiro* and *O Patriota* published science stories. Humour and science are often seen in magazines and newspapers from the 19th century. *Ciência para o Povo* (*Science for the People*), a magazine launched in 1881, shows the early combination of science and humour in popular journalism (see Figure 2), while public science lectures such as the Conferências Populares da Glória (Glória Popular Conferences) took place for almost two decades from 1883.

Figure 2



O peixe Coutinho.

Especie nova, descoberta no Amazonas pelo professor Agassiz, já escamado, temperado e assado.

© Semana Illustrada

Humour and science: this illustration from 1866 refers to the travels of the North American naturalist Louis Agassiz in Brazil, in which he aimed to use fish as evidence against the theory of evolution. The caption reads: 'New species discovered in the Amazon by Professor Agassiz, scaled, seasoned and roasted.'. Published in *Semana Illustrada*, 7 January 1866.

By contrast, there has only been a recognisable Brazilian scientific community since the beginning of the 20th century ([Massarani et al., 2002](#)).

It is significant too that Rádio Sociedade (Society Radio), the first radio station in Brazil, was created by scientists in 1923, out of the newly established Science Academy as a strategy for talking about the importance of science ([Massarani, 2013](#)).

Practical science communication activity has been observed in many countries in Latin America, not just Brazil. A landmark regional collaboration in science journalism, set up in the 1960s, was a science journalism movement involving Argentina, Brazil, Chile, Colombia, Ecuador and Venezuela ([Massarani et al., 2012](#)). This movement began in 1962, when the Centro Internacional de Estudios Superiores de Comunicaciones para América Latina (CIESPAL, International Centre for Higher Educational Studies in Communication in Latin America) organised a seminar in Chile; and in 1965, Ecuador hosted a course on science journalism with the participation of the Spanish science journalist Calvo Hernando. At the same time there were vocal supporters of science journalism in other Latin American countries, including Jacobo Brailovsky in Argentina, José Reis in Brazil, Arístides Bastidas in Venezuela, Sergio Prenafeta in Chile and Antonio Cacua Prada in Colombia. This movement led to the consolidation of science journalism associations in these countries. Since then, there have been ups and downs in science journalism, with some countries such as Argentina, Brazil, Chile and Colombia establishing a tradition in the field, while in others, for example in Central America, there is still a clear gap in science coverage. Thus an important challenge is to give more stability to science journalism in the region, widening the practice to the whole region.

Less often observed are initiatives that make Latin American science more visible. An exception is SciDev.Net, a non-profit organisation which has a unique goal of focusing on science and technology in the developing world (including a section for Latin America which is coordinated by the present author). SciDev.Net also organises workshops in the region to train journalists and scientists in covering science topics.^[2]

Component DOI: <http://dx.doi.org/10.15180/140205/003>

Museums, science centres and programmes

Natural history museums and botanical gardens have a long history in Latin America, having existed in the region since the 19th century. Although created with a strong European identity, which some authors argue made them part of a European agenda to exploit Latin America ([Sheets-Pyenson, 1988](#)), they had (and still have) an important role in science communication – not only linked to the European interests, but also to a Brazilian agenda – since their research programmes helped to consolidate Brazilian science.

But it was only in the 1980s – decades after they appeared in the US and Europe – that hands-on science centres started to be systematically created in different Latin American countries.

In Brazil the first hands-on science centre, Espaço Ciência Viva, was created in 1982 with the support of the San Francisco Exploratorium. During the following decade, many others were created, resulting from a period of intense enthusiasm for science centres in the region, which have been increasing in number since then. Among them are Mundo Nuevo (Argentina, 1990), Universum (Mexico, 1992), Ciencia Viva (Uruguay, 1993), Espacio Ciencia – Laboratorio Tecnológico del Uruguay (Uruguay, 1995), Maloka (Colombia, 1998), Museu da Vida (Brazil, 1999), Museo Interactivo Mirador (Chile, 2000), to mention just a few.

Figure 3



© Museo Interactivo Mirador

Sculpture “Penetrables”, by the Venezuelan artist Jesús Soto, located in the Park of the Museo Interactivo Mirador (MIM), Chile.

DOI: <http://dx.doi.org/10.15180/140205/010>

It is not a coincidence that the context of enthusiasm for hands-on science centres in the 1980s and 1990s also saw the creation (in 1990) of RedPOP, the Network for the Popularisation of Science and Technology for Latin America and the Caribbean, as an initiative within UNESCO.

Some very interesting museums have also been developed in Latin America on specific topics. In the area of anthropology, for example, visitors can see the fascinating remains of Inca, Aztec and other ancient civilisations. Mexico, Guatemala and Peru are particularly interesting in this respect.

Figure 4



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Tikal temple at the ancient Mayan city of Tikal, Guatemala.

DOI: <http://dx.doi.org/10.15180/140205/011>

Palaeontology is also an area explored by some initiatives in Bolivia, Brazil and Argentina, for example – most of them featuring Latin American dinosaurs.

Figure 5



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Parque Cretácico, in Sucre, Bolivia.

DOI: <http://dx.doi.org/10.15180/140205/012>

Conservation parks can also be seen throughout the region, including the emblematic Galápagos Islands, belonging to Ecuador, which inspired Charles Darwin to propose his theory of evolution.

However, information on science communication activities is very fragmented – and a significant effort is required to build a picture of science communication in its entirety in the region. This work is currently being undertaken by RedPOP, which is developing a guide to science ‘spaces’ in the region (including hands-on science centres, botanical gardens, zoos, aquariums and natural history museums) – a herculean task owing to the lack of previous attempts at mapping the field.

A worrying characteristic that emerges from any survey of activity is a concentration of science museums in the capitals or main cities of Latin American countries. In Brazil, for example, which has the greatest number of science museums and the most complete information about their activities^[3] the museums and science centres are mostly concentrated in São Paulo, Rio de Janeiro and Minas Gerais. The Amazon, on the other hand, has very few. An important challenge, therefore, is to create mechanisms to better map and record the initiatives of science museums in the regions, besides making them more accessible for the general population. Mobile science centres have a role to play here, and some countries already have them. Brazil is a particularly good example, with at least 20 mobile initiatives around the country – but even here not enough is being done to meet the needs of such a vast region.

In the last decade, Latin America has also seen the rise of science weeks as part of regular science communication activity. Brazil, Chile, Mexico and Colombia are among the countries that have used science weeks to engage different stakeholders and to communicate with their various publics.

Component DOI: <http://dx.doi.org/10.15180/140205/004>

Attitudes, professionalisation and training

It is perhaps harder to gauge whether there has been a change in the attitudes of scientists toward science communication. My own feeling, as someone who has worked in the field since 1987, is that the atmosphere has been changing at some level in the last few years. At least in Brazil there are some attempts to make science communication part of the science agenda, for example by including it as a mandatory aspect of funding proposals.

Also in the last decade, the region has seen some moves towards professionalisation of the science communication field: whereas previously science communication activities tended to be conducted by scientists who wanted to engage with society, there is now a new generation of experts who dedicate themselves specifically to science communication as their central activity (and have succeeded in finding jobs as science communicators). Diversification of the stakeholders in the field can also be observed, with people from different backgrounds practising science communication (for example journalists, artists and educators).

There is no doubt that there are some very good short- and long-term initiatives for training in science communication in Argentina, Brazil, Colombia, Mexico and some other countries. A session at PCST 2014, for example, presented five diploma, master's and PhD programmes for science communication in Latin America (plus other regions).

Nevertheless, a significant gap can be observed in training opportunities in science communication, and there is a clear need for more systematic efforts to provide training in the region that could be extended to benefit all the countries. Central American countries in particular have had very little contact with such initiatives.

Component DOI: <http://dx.doi.org/10.15180/140205/005>

Academic research and publication

The number of theses and dissertations in science communication – another indicator of the health of the field – has been increasing in the region. Brazil is a good example here: the first thesis identified in science communication was defended in the 1980s, whereas now more than a hundred dissertations and theses are defended every year.^[4]

Research and published scientific outputs in the science communication field have also been increasing. However, this is an area in which there is a notable gap in information – a critical aspect that made PCST 2014 particularly important, since it brought questions about research to the fore. Very little is known about how many research groups in science communication exist in the region, what kind of research they are carrying out and where they have been publishing. This is not, of course, a challenge faced only in Latin America – but in this part of the world knowledge of what is produced in science communication is almost at the nano-scale.

English is a barrier for most of the researchers, which could be an explanation for why Latin America is so under-represented in international journals such as *Public Understanding of Science*, *Science Communication* and *International Journal of Science Education, Part B: Communication and Public Engagement*. An interesting analysis presented by Rick Borchelt at PCST 2012 in Florence^[5] identified 1237 papers on science communication published in English in the period 2000–09. Only 16 of them came from Latin America.

However, the language barrier is not enough to explain the lack of papers from Latin America in international journals: the low percentage of papers from the region is also observed in the *Journal of Science Communication*, which allows authors to submit papers in Spanish and Portuguese, which are then translated by the journal.

With the aim of increasing understanding of the main international journals in science communication – and the criteria they use for approving submissions – a session was organised at PCST 2014 presenting the journals mentioned above plus the *Science Museum Group Journal*. This was one of the best-attended sessions of the conference, and not only by Latin Americans.

In summary, it is clear that some action needs to be taken to encourage science communication research in Latin America. Scientific research production in the field is either low (and needs to be pushed) or is simply invisible (and needs to be made visible). Most likely, the explanation is a combination of the two.

Component DOI: <http://dx.doi.org/10.15180/140205/006>

Science communication policy

Another aspect of science communication in the region exists at the national policy level. Interestingly, several different countries have been creating national policies or at least national strategies for pushing science communication (mostly involving practical activities). This was apparent in a session at PCST 2014 organised by UNESCO and RedPOP.

Argentina, Brazil, Chile, Colombia, Mexico, Uruguay and Venezuela are the countries that have been pushing science communication more consistently, using political strategies. Even countries with less of a tradition in science and science communication, such as Peru and Panama, are on the list of Latin American countries that have created science policies for the field.

However, despite good intentions and brave attempts, instability is an unfortunate feature of the region. Politics is still a driving factor: each new politician wants to leave his or her own mark on the country, eliminating the marks of predecessors. This means that politically driven initiatives (such as museum development), programmes and policies are created, with significant investment. But then many of them simply melt away in the normal course of politics.

Nevertheless I do believe that a lot is going on in science communication in Latin America. Clearly many activities are taking place, policies are being designed, money is being offered for initiatives in the field, people are being trained to work professionally in the area, scientists may be more sensitive towards the need of engaging the public in their research and emerging research groups seem to be being created.

We do need, however, to have more visibility of what is being done, to have more opportunities for networking and, mainly, to have steady support for the field. We have been living on a roller coaster. Now it is time to have a good compass – a GPS perhaps – and clear targets for what we want to reach, and will reach.

Component DOI: <http://dx.doi.org/10.15180/140205/007>

Tags

- [Science and society](#)
- [Science communication](#)
- [Public engagement](#)

Footnotes

1. Abstracts, 13th International Public Communication of Science and Technology Conference, Salvador, May 2014, www.pcst-2014.org/images/abstract_13thpcst.pdf (accessed 6 August 2014).
2. SciDev.Net, www.sci-dev.net/global (accessed 7 August 2014).
3. The Brazilian Association of Science Centres and Museums, Museu da Vida and Casa da Ciência have conducted three surveys of Brazilian science museums since 2006. The 2014 survey, which has yet to be published, counted about 260.
4. See the Ministry of Education database that reports master's and PhD dissertations, www.capes.gov.br (accessed 7 August 2014)
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