

Scientific Agendas and Work Tables. An action research initiative in La Plata, Ensenada and Berisso, Argentina

Horacio Bozzano and Tomás Canevari

Abstract

Scientific Agendas and Permanent Work Tables: two emerging concepts that summarise a position of science constructed over three decades of Participatory-Action-Research from CONICET and UNLP of Argentina. It is a science that, surpassing positions of status quo and allocating time for criticism, seeks to produce Theories of Transformation referring to possible territories. Two cases in progress, in an informal urbanisation and in an industrial and residential flood zone in La Plata, Ensenada and Berisso, Buenos Aires, Argentina, give meaning to two Agendas with their respective Tables: “Puente de Fierro Possible Territory” and “Territory, Industry and Environment”. The objective is to execute a science that brings closer the wishes of people with public policies in cases of high exemplary and replicability. The work is organised in three parts: what science, what agendas, what praxis, and a conclusion.

Key words: transformation, science, scientific agendas, praxis, work tables

Agendas Científicas y Mesas de Trabajo. Una iniciativa de investigación acción en La Plata, Ensenada y Berisso, Argentina

Resumen

Agendas Científicas y Mesas de Trabajo Permanentes: dos conceptos emergentes que resumen una posición de la ciencia construida a lo largo de tres décadas de Investigación-Acción- Participativa desde CONICET y UNLP de Argentina. Se trata de una ciencia que, superando posiciones de statu quo y destinando tiempo a la crítica, procura producir Teorías de la Transformación referidas a territorios posibles. Dos casos en marcha, en una urbanización informal y en una zona industrial y residencial inundable en La Plata, Ensenada y Berisso, Buenos Aires, Argentina dan sentido a sendas Agendas con sus respectivas Mesas: “Puente de Fierro Territorio Posible” y “Territorio, Industria y Ambiente”. El objetivo es ejecutar una ciencia que aproxime los deseos de la gente con las políticas públicas en casos de alta ejemplaridad y replicabilidad. El trabajo se organiza en tres partes -qué ciencia, qué agendas, qué praxis- y un cierre.

Palabras clave: agendas científicas – praxis – mesas de trabajo

Introduction

Scientific Agendas and *Permanent Work Tables*¹ constitute two emerging concepts which summarise a position of science built over three decades of Participatory-Action-Research from the National Council of Scientific and Technical Research (CONICET) and the National University of La Plata (UNLP) of Argentina. These concepts have been reinforced since 2013 with the initiative “La Plata with Territorial Intelligence” (<http://territoriosposibles.fahce.unlp.edu.ar/>) and have been consolidated since the 2014 PIO UNLP-CONICET Oriented Research Project called “Strategies for Territory Integral Management”. The PIO was institutionally effected in 2016 in the OMLP Environmental Observatory La Plata belonging to UNLP, CONICET and CICPBA through two Scientific Agendas with their respective *Permanent Work Table*: “Puente de Fierro Territorio Posible” worked on an informal urbanisation and “Territory, Industry and Environment” on an industrial, residential, port and flood zone of La Plata, Ensenada and Berisso, Buenos Aires, Argentina. Research is conducted by means of an approach to science which goes beyond positions of *status quo* and which allows room for criticism and resistance, while, at the same time, seeking to put forth Theories of Transformation in relation to possible territories.

The objective is to carry out science in a way that brings the wishes of the people closer with public policies in cases which show a degree of high representativeness and replicability, particularly in Latin America, as well as in most damaged and degraded places across the five continents. We have detected about fifteen topics of high impact and replicability, these two items in the agenda, among them. The work is organised in three parts. In “what science”, three readings are brought up which discuss the origins of science to a teleological present. In “what agendas”, some etymologies and a brief history of the concept are exposed in order to propose a *Scientific Agenda* concept as a result of an over two decades long applied research. In “what praxis”, a path is traveled between the praxis itself and the *Permanent Work Table*, going through a determined conception of methodology and applying a method “*Territori*” which has been in evolution as of two decades ago. The conclusions of the article opens perspectives for future research and introduce the question of power in *Scientific Agendas* and *Work Tables*.

1 What science

What is the meaning we give to Science? Our position towards Science recognises and seeks to incorporate into our daily work three readings, which are largely phases, moments or instances coinciding with its history, as well as positions regarding knowledge in the development of science itself in the face of a multidimensionality of events which have taken and take place in Humanity, the Planet and the Universe. These three readings can contribute to a greater degree of awareness in our positioning as scientists, especially considering

1 The concept of Work Table in Spanish is “Mesa de Trabajo” and it is connected in the sense of sitting around a table to work on problems and their possible solutions among people representing the community, science, politics, the world, business and other sectors. Throughout the text the concept is deepened further.

that we represent a very small proportion of human beings². Thus, a first Reading, also a phase, that we call the *origins of science*, not pre-scientific though, refers to various processes of knowledge and knowledge construction, both theoretical and empirical in different peoples and cultures for more than two millennia. Consequently, we also enable the understanding and comprehension of science from its etymologies and meanings. A second reading, typical of the Western world, which we call *paradigms*, differentiates between the *dominant scientific paradigm*, which emerges with the scientific revolution of the sixteenth century, and the *emerging scientific paradigm*, starting with Einstein, as well as an overlapping stage between both called the crisis of the dominant paradigm (de Sousa Santos 2009). A third reading of the Science, that we call *teleological*, proposes the simultaneous existence of a *science of the status quo*, a *science of criticism and resistance* and a *science of transformation*, incorporating the accentuation of critical contexts for the future of humanity on our planet.

1.1 Phase of the origins of science

As shown below, many centuries before dictionaries existed, science existed. In Latin, *scientia* means knowledge. Between 1220 and 1250 ad *scientia* derives from *sciens*, and this word, in turn derives from *scire*, an active participle that means to know. In the fourteenth century, late Latin incorporates *scientificus* to refer to scientific matters (Corominas 1973: 169). It is worth mentioning that science is, to a large extent, both knowledge and know-how. This analysis proves insufficient insofar as the research is not expanded by delving into Chinese, Hindu, Arabic and other etymologies, in order to investigate what degrees of affinity there are between the histories of the meanings of the concept of Science.

Science is understood, comprehended, explained and interpreted from the meanings in its signification. In the case of our language, Spanish, it does not only refer to the “Set of knowledge obtained through systematically structured observation and reasoning and from which general principles and laws are deduced with predictive capacity and experimentally verifiable” (Royal Spanish Academy [RAE] 2014), but also referring to science as “knowledge or erudition” and science as “skill, mastery, body of knowledge in anything” (RAE 2014).

A brief review of an important body of knowledge developed among Chinese, Egyptians, Hindus, Greeks, Romans, Persians, Mayans, Incas, Arabs and other peoples allows us to affirm that the three current meanings of science in the Royal Spanish Academy to which we refer, to a large extent, were present for more than two millennia, that is, there were sets of knowledge with a greater or lesser degree of structuring, which represented knowledge and / or erudition, as well as skill and mastery. In an attempt to summarise, we could say that in the Greek world a more theoretical and philosophical knowledge production stands out, while among other peoples and cultures there was development of knowledge in preferably more empirical as well as in technical, scientific- technical and / or pre-scientific

2 In Argentina, for example, a country with 44.6 million inhabitants, after having increased the budget allocated to science and technology activities by 937% between 2003 and 2012 according to the Innovative Argentina 2020 Plan (Ministry of Science 2013), Researchers and research fellows represent around 0.1% of the population. That is the worldwide average of researchers per inhabitant, as can be seen from the report of the UNESCO Science Report (2015), which accounts for around 7.5 million scientists.

matters. Mathematics, astronomy, medicine, engineering and metallurgy, among others, were marking out in different centuries and different latitudes a spiral of knowledge, some of which was not known among peoples for several centuries. It is highly probable that, in a general balance, “the scientific genius of China” had had a greater relative development until the sixteenth century than those of other peoples and societies during this phase.³

1.2 Phase of the paradigms

In this section, our work is based on the research carried out by Boaventura de Sousa Santos (2009), for whom the model of rationality of the *dominant paradigm* “... that presides over modern science was constituted from the scientific revolution of the XVI century, and was developed in the following centuries basically in the domain of natural sciences. Although with some omens in the eighteenth century, it is only in the nineteenth century when this model of rationality extends to the emerging social sciences” (p. 21).

“As it was possible to discover the laws of nature, it would be equally possible to discover the laws of society.” Thus, nineteenth-century positivism recognizes that “... there are only two forms of scientific knowledge – the formal disciplines of logic and mathematics and the empirical sciences according to the mechanistic model of the natural sciences – (arguing that) the social sciences will be born to be empirical” (de Sousa Santos 2009: 27). With the philosophical tradition of phenomenology, Max Weber, among others, arise anti-positivist perspectives, according to which “... social sciences will always be subjective, (it will use) qualitative methods instead of quantitative ones, with the goal of obtaining an intersubjective, descriptive and comprehensive knowledge, instead of an objective, explanatory and nomothetic knowledge.” (op.cit: 30) Being that nature responds to laws and that society, should it respond at all, will not do so abiding to laws similar to those that regulate physical or biological processes, then how to understand the scientific status of any social research work when these laws are transposed or applied from the natural sciences? What scientific characteristics have social explanations elaborated from laws that do not regulate social processes but natural ones?

Einstein brought about a break, with Heisenberg and with Prigogine others followed. Referring to the crisis of the dominant paradigm, Sousa Santos argues: “One of Einstein’s deepest thoughts refers to the relativity of simultaneity ... The idea that we do not know of what is real but what we introduce in it is well expressed in Heisenberg’s uncertainty principle”. The physicist-chemist Prigogine goes even further: “... instead of eternity, history; instead of determinism, unpredictability; instead of mechanism, interpenetration, spontaneity and self-organisation; instead of reversibility, irreversibility and evolution; instead of order, disorder; instead of necessity, creativity and accident”. (op.cit: 34)

Another key aspect that helps to recognise the crisis of the dominant paradigm is the consideration that the law is not the only means to produce scientific knowledge: system, structure, model and process are concepts of remarkable value in our research, both in social and natural scientific science. Having countless laws, structures, systems, models and processes, to what extent should we continue to defend the “umbrella” of the nomothetic?

3 For further development, see works by Robert Temple and Joseph Needham in UNESCO’s The Courier magazine, October 1988, available at: <http://unesdoc.unesco.org/images/0008/000817/081712so.pdf>

In regards to the *emerging paradigm*, the four theses with their justifications exposed by de Sousa Santos originally in 1987 are remarkably clear. In summary they are: “1. All natural scientific knowledge is social scientific knowledge; 2. All knowledge is local and total; 3. All knowledge is self-knowledge; and 4. All scientific knowledge seeks to be constituted in common sense.” (Op.ci: 41-57).

Based on the knowledge of these four theses, we are currently in a position to state that:

1. The knowledge produced during the origins of science and later in the exact, natural and social sciences has necessarily occurred in particular social and cultural contexts of knowledge, with Chinese, Egyptian, Mayan, with Newton, with Einstein or in any place and time of Humanity. It is necessary then to know the context in which the advances of science had, have and will take place.
2. All knowledge is local and total simultaneously, that is, it has conditions of exemplariness and replicability, although it does not necessarily respond to laws or universal principles. As an example, the problem of the largest informal urbanization in our city, Puente de Fierro, included in this publication has its exemplary nature and replicability in more than 50,000 urbanisations where more than 130 million people live in Latin America.
3. All knowledge is self-knowledge, because each subject is autonomous, or at least it should be; then, all knowledge is equal in value: scientific, community, political, entrepreneur, religious, philosophical, technical, crafts, others. It is necessary that the *knowledge dialogues* in Paulo Freire (1996), the *knowledge ecologies* in Sousa (2009) and the *knowledge interfaces* in Norman Long (2007) be accepted by a greater proportion of the approximately 7 million existing scientists, so as to get off the pedestal in which for centuries we scientistd were in science, along with philosophy and religion. In our research all knowledge is equal in fact.
4. For scientific knowledge to be constituted in common sense, a second epistemological rupture must take place; it is worth mentioning that to the epistemological obstacles present in Bachelard (2007) and Bourdieu (2002) and their corresponding ruptures, profiles and epistemological acts (Schuster 2005), a second epistemological break occurs, which implies a return to common sense: a decoding in order to achieve comprehension and understanding between all the subjects of each research object: neighbours, referents, politicians, entrepreneurs.

1.3 Teleological phase

What are the aims of Science considering the trends of Humanity and the Planet for the next half century? The accentuation of critical contexts for the future of humanity on our planet is related to the development of knowledge and our consciousness, both those who make territories possible and impossible territories impossible. The more knowledge and conscience we generate, the more will ignorance and/or unconsciousness about the current crisis of Humanity as a species be exposed. In this scenario, positions of *status quo*, *resistance and transformation* are not exclusive of science or scientists, but of all of us, that is, whether we are aware and conscious or unaware or unconscious of what is happening or not. How many in our daily micro-actions do we do enough to cushion or reverse some of

the facets of this crisis? Being aware of this, to what extent do we continue with this trend, that is, with this status quo that leads us along an uncertain path in the coming decades? How much time and energy do we dedicate to criticize and resist so much abuse to people and environments? How much time do we use to transform, through subjective, social, environmental and decisional micro-transformations, some of the facets of this crisis? These three questions are also suitable for the approximately 0.1% of all human beings represented by us the scientists. Ultimately, each research we do, in the exact, social and/or natural sciences, is contributing directly or indirectly to promoting status quo, resistance and/or transformation. Although in practice it is the powers that be: political-institutional, business corporations, media, that exercise greater authority in decision-making, it is also true that we can not fall into naivety by ignoring teleology or the purpose of what we are investigating. That is to say, thinking whether my research will be useful or not, to whom it will then be useful, for what, for whom. Hence, conscience is equal in every human being, regardless of what is imposed upon us by those who exert more power.

The hypothesis is proposing the simultaneous existence of three sciences:

1. *The science of the status quo* is one whose production of new knowledge ultimately contributes to perpetuate structures and current trends of social inequality and environmental degradation, among others. What is the value of a vaccine, a healthy food, a technology for water or an urban or rural development plan if it does not reach those it was intended to reach? Considering that public policies and international organisations do it at least insufficiently, why does not science incorporate more useful scientific knowledge so as the so called scientific production reaches people?
2. *The science of resistance* is one that, while producing critical contributions of knowledge to the current trends of social inequality and environmental degradation, among others, preferably reaches degrees of transformation in consciousness -by education, awareness, sensitization- without sufficiently motorising decisional transformations in concrete actions, remaining at more discursive than factual levels.
3. *The science of transformation* is one that, while studying and knowing the status quo, criticism and resistance, also devotes time and energy to produce micro, meso and macro subjective, social, environmental and decisional transformations. These transformations manifest themselves in consciousnesses, spirits, perspectives (views or approaches), actions and objects. The transformation begins with the subjective (that is, inside each subject: in mind, body and soul), it then continues with the social (through a better relationship with others, particularly with other sectors) and through the environment (through awareness about of more care of the oikos or our common house). Finally, the transformation is decisional: if I do not carry out the subjective, social and environmental transformations of which I am aware, then the transformation will not take place, it will stay preferably at discursive levels, as is usually the case with Agendas, as we will see below.

2 What agendas

In Latin, agenda means “what has to be done” and derives from the gerundive *agēre*, to do. According to the RAE (2014) the agenda is “1. Book, notebook or electronic device in which it is written, so as not to forget it, what must be done; 2. List of topics to be discussed at a meeting; 3. An orderly relationship of affairs, commitments or tasks of a person in a period”. That is to say that, implicitly and explicitly, there is an objective and an action. When the objective is quite ambitious, the actions are more complex to execute. There are agendas of different scales, modalities and purposes: local, state, national, international, public, private, public-private, partnership, social, environmental, union, religious, political, scientific, cultural, sports, tourism, festive and many others.

Who formulates each Agenda? Usually the entity or organisation that is in charge of the initiative. What impact does each Agenda have on the rest of society which did not participate in its conception? It depends on the case. For instance, the proximity between objectives and actions between an Agenda specific to an artistic festival, and another one which aims at reducing poverty on the planet promoted by an international organisation, will differ significantly, as will its recipients. Likewise, behind those who set agendas of a more general scope, the analysis ultimately leads to a debate on hegemonies, power groups and media roles in the persuasion and construction of realities that, in this publication, for reasons of space, we can not include. Some useful antecedents are developed further below which may prove useful to think about the development of our own agendas.

2.1 Background

Although we have not defined classifications nor typologies of Agendas, in our search we detected the formulation of problems and solutions that concern science within fifteen representative Agendas of international organisations and national institutions dedicated to science.⁴ We have not found Scientific Agendas where methods, techniques and results -with underlying theoretical assumptions- which account for the realization of concrete actions coherent with the exposed objectives are explained. We do identify, however, in the cases of Mexico and the Netherlands, the will to do so at the national level. Our Scientific Agendas are born from the convergence of three aspects: a) their integral, integrating and integrated visions of the problems under treatment; b) its exemplariness and replicability; and c) the strong will of application.

In the scientific field, this topic is often raised as a pending challenge. In “Environmental governance in Latin America: Towards an integrative research agenda” (Baud, de Castro, Hogenboom 2011) the need for an overarching agenda that addresses socio-environmental issues from Latin American perspectives with an interaction between the State, civil society and businesses at multiple scales is brought forth. The authors also highlight the difficulty of executing a similar initiative in contexts of persistent inequality, poverty, corruption, violence and limited institutionality, with an elite that deepens inequalities of power.

4 In addition to the UN, the XXIV Summit of Veracruz, the cases of Mexico and the Netherlands, we have added the following national cases: Argentina, Canada, United States, Finland, England, Japan, South Africa, Egypt, Nigeria, India, Australia.

How to build these integral science based agendas that lead in turn to a more plural and democratic governance? As these agendas are conceived and formulated at the state, national and international level, it is suggested that their execution be local, municipal or regional, emphasizing the three aspects before mentioned. In the proposed Scientific Agendas we try to apply simultaneous top-down and bottom-up management styles from the beginning to the end of each process so as to increase their feasibility and effectiveness.

At the international level, the 2030 Agenda of the United Nations, with its 17 Sustainable Development Goals approved in 2015, stands out for its thematic scope and planetary dimension. The 2030 Agenda is “an action plan in favor of people, the planet and prosperity, which also intends to strengthen universal peace and access to justice” (UN 2015)⁵. *The member states of the UN recognise the eradication of poverty as the greatest challenge in the world and ensure that only by advancing in this aspect can a sustainable development model prosper. The 2030 Agenda sets the foundations that set the guidelines for the development of other initiatives in the National States.*

There are transnational agreements with joint goals in shared agendas, such as the Citizen Agenda for Science, Technology and Innovation for Latin America Challenges 2030, approved in 2014 in Veracruz, Mexico, on the occasion of the XXIV Ibero-American Summit of Heads of State and Government. In the case of the national Scientific Agendas, the public information available refers to national ministries or scientific bodies. Agendas also exist in states, provinces, departments or other intranational administrative units. These are agendas of science, scientific-technological policy and innovation systems, along with agendas in economic, educational, cultural or other policies. Sometimes incompatibilities arise in the political-institutional instrumentation of this diversity of agendas.

There are cases where consultation bodies are also created, such as in Mexico since 2002 with the Scientific and Technological Advisory Forum, an autonomous body of permanent reference by the Executive and Legislative Powers. This forum proposes “to make science and technology a central part of the national agenda and that citizens participate in decision-making, to build a democratic, equitable knowledge society with sustainable development” (Foro Consultivo México 2018). In the case of the Netherlands, in 2015 the government introduced the National Scientific Agenda defined by scientists, the private sector, civil society organisations and the government. *“There, the planning focuses on the highlights of Dutch science and points to social problems and strengthen economic opportunities, which led in 2016 to an investment agenda. The proposed guidelines are related to the themes of a broader EU Agenda, Horizon 2020”* (Government of the Netherlands science plans for 2015-2025, (2014).

There are similarities and differences between these agendas: global as well as regional or national scientific, with the Scientific Agendas that we conceive. Some useful antecedents are developed further below which may prove useful when thinking about the development of our own agendas.

5 The 2030 Agenda is a continuation of Agenda 21, signed by the member countries of the UN in 1992 in Rio de Janeiro, where the declaration focused mainly on the environment.

2.2 Scientific Agendas at INTI International Network of Territorial Intelligence

We belong to the INTI Network and the Latin American Network “Possible Territories”. Jean-Jacques Girardot, creator of the Territorial Intelligence (IT), recognizes six milestones that mark the creation and development of IT, the last of which refers precisely to the Agendas. “1) Catalyse Method: prehistory of the IT; 2) IT, multidisciplinary and participatory scientific approach; 3) IT, “multidisciplinary” approach; 4) IT oriented towards sustainable development; 5) Birth of a scientific co-operation with Latin America; 6) Concrete definition of a global socio-ecological transition agenda to promote participatory local agendas.” (Girardot 2012: 30-37).

In the European INTI Network they execute Socio-Ecological Transition Agendas which correlates in good measure with the report “Le Monde en 2025” of the General Research Directorate of the European Union (2009). In the Latin American INTI Network they are called Agendas of Intelligence and Territorial Justice or Transformation Agendas. In fact, both are scientifically based agendas or simply Scientific Agendas.

In Latin America, these are partnership agendas built from an emerging paradigm with the participation of the “four legs of the Territorial Intelligence table”: politicians, communities, scientists, entrepreneurs, which always are part of the process from the beginning. They pursue a vision of macro-transformation: subjective, social, environmental and decisional, beyond the micro-transformations that each one brings about in relation to the activities and concrete actions that are agreed to execute. The objective is that Agenda topics derive in State Policies or Public Policies and that the participants are co-authors of these policies. It is not a question of taking the role of the government nor replacing its citizens, but rather of contributing with knowledge and decision vectors typical of Transformation Theories, which are often absent from bureaucracy, political partisanship and the business world.

In a first approximation, from our perspective, an Agenda is a guide that allows orienting, organising and establishing priorities for the pursuit of certain purposes. It is thought and conceived to later execute decisions through micro, meso and macro actions, always with diverse and uncertain degrees of difficulty in its concretion. An Agenda determines emerging purposes of participatory diagnostics in situations in which it is intended to impact, establishing actions to reach a situation that approaches territories that are more possible than impossible.

2.3 The case: PIO-OMLP (UNLP-CONICET)

The PIO – Oriented Research Project of the UNLP and CONICET “Strategies for the Integral Management of the Territory”, *Estrategias para la Gestión Integral del Territorio*, was carried out between 2014 and 2016 in two selected areas of La Plata, Ensenada and Berisso, Buenos Aires (Argentina). Its object of study (identification of social and environmental problems) allowed to formulate thirty Scientific Agenda Topics emerging from the research (object of intervention). They were classified in four groups according to their origin: topics of agenda emerging preferably from the natural sciences (1), from the exact sciences (2), from the social sciences (3) and from organisations, communities, institutions and compa-

nies that escaped to our macro-object of research (4). The combination, articulation and interpenetration of these thirty themes: the result of about twenty interviews and several workshops where results of the different lines of research were exposed from the Social, Exact and Natural Science, and the interaction with the “four legs of the IT table” contributed to prioritise three Agenda topics which were selected for their high social and environmental impact and their replicability and exemplariness. These represent three emerging issues of Public Agenda: a) Informal developments and slums, b) Territory, industry and environment and c) Urban vacant land.

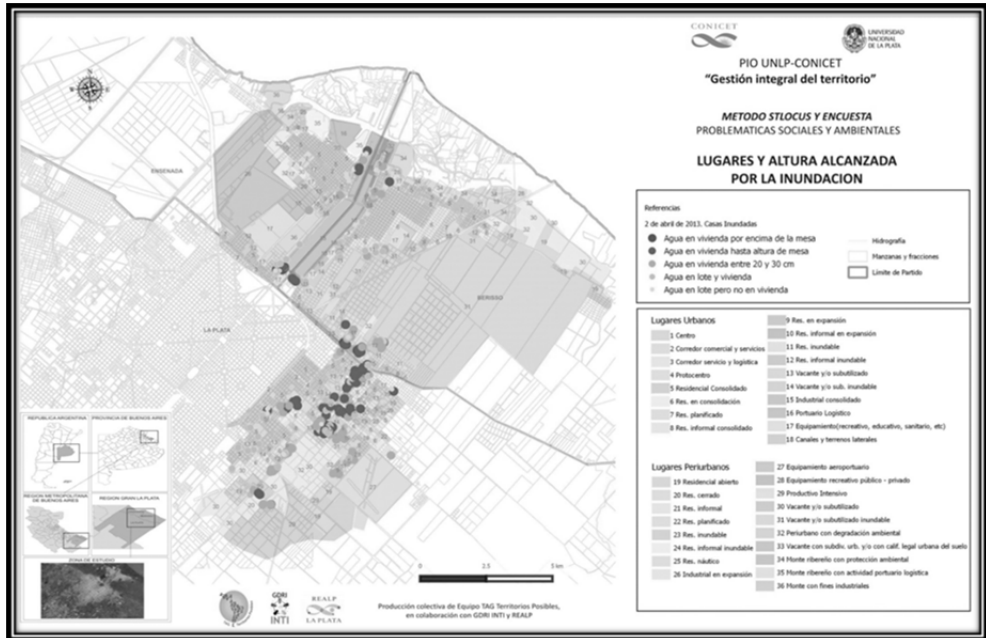


Figure 1. Areas of the object of study: Ensenada, Berisso and Arroyo Maldonado Basin. Source: PIO Project



Figure 2. Areas of the three objects of intervention and transformation. Source: PIO Project

These three Scientific Agendas hit close to home as they have critical, sad and painful roots, because we find them in thousands of places where structural problems are not solved throughout Latin America: they must be State Policies and they are not, at least not enough. It is estimated that in the world 4 billion people live in some 2 million localities, while 3500 million people live in very heterogeneous rural worlds, generally in conditions of poverty. Beyond considering the 17 objectives of the 2030 Agenda, the Scientific Agendas should bring the science, people, institutions and the business world closer together, that is, the “four legs of the table” of the IT. If the commendable 17 objectives are not made operative then the Agenda 2030 will be contradictory with its etymology, thus distancing discourses from actions.

It is estimated that more than 800 million people live in slums on our Planet. Moreover, it is estimated that there are comfortably more than one million urban interstices in the 300,000 most populated cities on the planet. These are vacant lands where public policies usually leave room for access by real estate groups and business corporations instead of planning for the social collective and the common good. Regarding large industries in urban areas, the difference in the environmental quality of companies is alarming in many cases it depends on whether these companies are located in economically more developed

or developing countries where subsidiaries of large transnational groups or other subsidiaries are based.

The perspective of vision and integral, integrative and integrated management of the territory differs from the sectoral vision – food, health, housing, education, and others – and also has the advantage of addressing in certain territories: urban, peri-urban and rural, the totality of the 17 objectives of the 2030 Agenda, contributing to overcome dichotomies which are inherent of the emerging scientific paradigm, particularly that of society-nature.

2.4 The concept of the Scientific Agenda

Between July 2016 and February 2018 we have made 37 monthly Work Tables with more than 120 work meetings since April 2013. This allowed us to calibrate our definition of Scientific Agenda balancing theory and praxis. The Scientific Agendas today integrate the OMLP Environmental Observatory La Plata.⁶

1. **Genesis.** A) Scientific Agendas of this nature are born from interdisciplinary research and previous inter-actors. B) They are born with people and institutionalised from the scientific-academic system. C) Although they arise and are promoted from the scientific field, the Agendas are quickly appropriated by the participating communities, scientific representatives, public institutions, social organisations and companies.
2. **Perspective.** A) They respond to comprehensive, integrated and integrated visions of a territory. B) Their integral perspective is fundamental, given the compartmentalised nature of public institutions, scientific disciplines, companies and other organizations. C) They set the guidelines that contemplate and address macro dimensions in articulation with ‘what is to be done’ (RAE 2014), also in a particular place (Puente de Fierro, Ensenada, Berisso or other) with actors in those places: the participants of each Table.
3. **Theory.** A) They strengthen the dialogue between categories and theoretical concepts and concrete praxis. B) They contribute to the construction of a Theory of Transformation, through its concrete application in both virtuous and vicious circles. C) These circles are integrated by micro-agreements, micro-actions, micro-systematizations, micro-achievements and micro-failures that produce subjective, social, environmental and decisional micro-transformations in the subjects participating in each initiative.
4. **Policies.** A) They enable the possibility of setting substantive issues in a public agenda, through their concrete applicability in virtuous and also vicious circles. B) They promote public governance, that is, the construction of inclusive public policies where people and environments are considered in actions rather than in mere discourse. C) They promote the articulation between the integrality of their conception and the sectoriality of their execution.
5. **Contents.** A) They refer mainly to social, environmental and cognitive problems; the economic and political problems are articulated to the three preceding ones. B) They articulate macro and meso processes in particular places with particular actors. C) They

6 The OMLP has a triple institutional membership: UNLP, CONICET and CICIPBA (Commission of Scientific Investigations of the Province of Buenos Aires). It is a new body, created with the intention to contribute to the co-construction of Scientific Agendas aimed at building Public Agendas from the scientific-technological system. <http://omlp.sedici.unlp.edu.ar/>

promote identities, needs and dreams: they refer to what I am, what we are, what I need, what we need, what I want, what we want.

6. **Application.** A) All those who decide to participate, do so voluntarily. B) They are executed in a planned manner with Permanent Work Tables, monthly at least, and through other research techniques. C) Organisations, governments, companies, political parties, religious entities, unions and media participate bringing their unique identity into the mix.

2.5 Topics 2016-2017 of the Scientific Agendas in execution

The Permanent Scientific Agenda “Territory, Industry and Environment” has recognised, with the participation of neighbours, social referents, public institutions, companies, media, thesis, teachers, students and scientists, five macro-themes or macro-objects of basic, applied, and interdisciplinary research: I. Territorial Organisation; II. Environment and Territory; III. Environment and Health; IV. Social and Environmental Risks; V. Social and Environmental Rights. The macro-themes (I to V): which in science are called macro-objects of study, intervention and transformation, also include subjects or objects (1 to 29), in science, called processes, projects or objects of study, intervention and transformation.⁷

The Scientific Agenda 2014-2026 “*Puente de Fierro Territorio Posible*” in the homonymous informal urbanisation was built in eleven meetings or “mesas” between May and September 2016. In this intense work of listening, recording and interaction, 26 topics were incorporated by neighbours and referents. In short, they are: 1. Land registry; 2. Buses and bus stops; 3. Paving of streets; 4. Safe connections and electrical panels; 5. Security; 6. Sewers; 7. Running water; 8. Training in trades; 9. Community gardens; 10. Primary education; 11. Cooperatives of work; 12. Flooding, ditching and storm drains; 13. Public spaces and recreation; 14. Sidewalks; 15. Street nomenclatures; 16. Health centres; 17. Neighbourhood representatives; 18. Rebuild history and identity; 19. Garbage and recycling; 20. Health: prevention actions; 21. Health: zoonotic diseases; 22. Childcare Centres; 23. Secondary education; 24. Education: pre-school; 25. Participatory budget; 26. Street lighting.

3 What praxis

Our position on praxis revisits Marxist-based reinterpretations in Kosik (1963) and Saquet (2017). This framework in which we conceive praxis, throughout the last decade, is linked with the application of the methodology conception proposed by Lazarsfeld (1972). Likewise, praxis and methodology are “grounded” theoretically and methodologically with the nine phases of the *Territorii Method* (Bozzano 2013). *Territorii* is executed with about twenty techniques: one of them is the *Permanent Work Table*, applied on 37 occasions in the IOP to the two *Scientific Agendas mentioned*.

7 For reasons of length, they are not included in this publication. They can be consulted on the official OMLP website available at <http://omlp.sedici.unlp.edu.ar/group/estrategias-para-la-gestion-integral-del-territorio>



Figure 3. Applicability of praxis

3.1 About praxis

There is no praxis without theory, be it underlying or explicit. Although the RAE (2014) states that praxis (from the Greek $\pi\rho\acute{\alpha}\xi\iota\varsigma$ *prâxis*) is “Practice, as opposed to theory”, from our perspective practice and praxis are not synonymous, given that we interpret that praxis does not oppose the theory. Praxis builds theory, or in other words, theory is constructed with praxis. Rather than posing an opposition, it represents a hybridity or a dialectical process in which both are fed back and produce a new state. In praxis, human beings create their reality, their own and that of others, in its totality, being this both subjective and objective: said praxis is the determination of their own existence.

Praxis represents at least three hybridisations. As Saquet (2017) points out: “There is a dialectical unity in praxis between man and the world, between idea and matter.” Praxis then hybridises practice and theory, hybridises man and world, and hybridises idea and matter.

Praxis is our determination of existence. “In its essence and universality, Praxis is the revelation of the secret of man as an ontocreative being, as a being that creates reality (human-social) and that, therefore, understands reality (human and not human, reality in its whole). The praxis of man is not practical activity opposed to the theory; it is the determination of human existence as the elaboration of reality” (Kosik 1963: 202).

Praxis unites people and science. “Praxis needs to be effective in a dialogical, participatory and reflective manner, thus, research necessarily needs to be oriented towards cooperation among different subjects in a certain territory, that is, for territorial development with a local, cultural and ecological base, strengthening praxis that reconcile popular knowledge, science, resistance movements and social practices such as agroecological and artisanal” (Saquet 2017)

Determination of existence, people and science, university in terms of research, teaching and extension, as we will see below, our methodology perspectives, the Territorii Method and the Work Table, go in the same epistemic line as this concept of praxis.

3.2 About the methodology

From our point of view, methodology is praxis because it hybridises practice and theory, and in each research object, it also hybridises man and world as well as idea and matter. However, it is easier to write it down than to do it. The set and the sequence of tools that we select, with theoretical basis, and that we apply in each project constitutes what we call methodology, understood in the sense given by Lazarsfeld: “Methodology examines the investigations to make explicit the procedures that were used, the underlying assumptions, and the explanatory

modes offered” (Lazarsfeld 1972, cited by Marradi et al. 2007: 53). In other words, tools (procedures), theories (underlying assumptions) and explanandum, chapters or parts of the project (explanatory modes offered) give a more complete sense to each methodology, articulating better principles, theories and actions. In our research we apply thirty social and spatial techniques included in a toolbox, that is, a set of methods and techniques from which to choose in order to know what moments of the research process are or may be useful and relevant for the object, the objectives and the hypotheses that we have outlined.



Figure 4. The first poster of the First Working Table in Puente de Fierro (2016) Photo: Horacio Bozzano

3.3 About the *Permanent Work Table*

The *Work Table* synthesises and applies the three aspects developed above: it is a permanent practice and is a scientific methodology that constructs knowledge and transforms reality. The name of this technique was born from referents of the participating social organisations who worked with us in our two Scientific Agendas as a way of expressing what they wanted to do: work side by side with scientists, public officials and, eventually, entrepreneurs, to make their territories more possible than impossible.⁸ The concept developed to define this technique is built on an uninterrupted praxis that began on April 8, 2013 with the “La Plata with Territorial Intelligence” initiative promoted by our scientific network⁹, then since August 2014 with the execution of the aforementioned PIO UNLP-CONICET Project and as of August 2016 with the OMLP. *It includes 12 pillars or items detailed below.*

8 Among many referents, most of them women, special thanks to Amalia Lassalle, Irma Borán, Rosa Dejesús, Celeste Mercado, Silvia Tabarez, Ana Díaz, Alicia Ledesma and Claudia Jacu.

9 <http://territoriosposibles.fahce.unlp.edu.ar/noticias/la-plata-con-inteligencia-territorial>

1. **New knowledge:** The Tables are co-constructors of knowledge. The acts of listening, dialogue, dissent and agreements produce new knowledge. Regardless of the diverse degrees of knowledge of the participants, none imposes their knowledge over the other: to achieve this is culturally, politically and ideologically complex. Disputes, always present in social arenas, are worked with dialogical processes where knowledge and altruism are valued over ignorance and selfishness. From the seven knowledge interfaces (Long 2006) new knowledge emerges.
2. **Readings:** In each Work Table, descriptive, perceptive, historical, prescriptive, interpretive, propositive, intelligent, transformative and/or virtuous readings present in the phases of the Territorii Method can be approached. Generally, Territorii contributes to define a macro-theme – of the 2014-2026 Agendas, in this case – constituted by meso and micro themes: 29 in an Agenda and 27 in another, which are executed with the application of these nine readings through micro- agreements, micro-dissents, micro-actions, micro-achievements and micro-failures.
3. **Protagonists:** Although scientists are promoters and mediators of the initiatives, with the participation of politicians, businessmen, thesis students and others, the leading actors are two: the neighbours as such or as part of civil society organizations, and the environment, which does not have a voice of its own in our language, but it does communicate in its way. Of the five components of the table of Territorial Intelligence: communities, politicians, entrepreneurs, environment and knowledge, the central protagonist is co-constructed knowledge, given that previously, this knowledge did not exist: the “leg” of knowledge generated with these micro agreements and micro-actions holds the table in better conditions. It is an alternative power where our love, altruism and co-operation: regardless of the leg of origin, prevails over our miseries or, according to oriental cultures, our sufferings.
4. **Modus operandi:** The Working Table consists of a monthly meeting: it can also be weekly, biweekly, bimonthly or in another period to be agreed upon, documented in minutes. In these meetings, problems and conflicts previously identified in a participatory research project are discussed in order to work in agreements oriented to develop actions finding ways, alternatives or solutions to micro, meso or macro problems.
5. **Planning:** These meetings are carried out with previously agreed upon agendas and documented with audio record and in posters or minutes which are redacted as the meeting progresses. The posters, notes or minutes are read and approved at the closing of each Table to confirm whether they give a fair account of positions, agreements and disagreements established between the participants. The venue of the Tables alternate as, for being cooperatives, they do not have a fixed place as their headquarters.
6. **Time:** Each Worktable has its previous moment for convening, planning and management. Normally, they are planned having in mind a duration of two hours. Sometimes, depending on the motivation and interest of those who are present, the Tables have been extended to three and up to four hours.
7. **Permanence:** In turn, there is also a meanwhile. In the lapse between one meeting and another, there is a stage of work which exists in order to move forward with the responsibilities assumed by the parties, to comply with the established agreements, and so as to begin the next meeting with an account of the advances, with micro-achievements

that allow us to continue building trust and more virtuous transformations rather than vicious ones.

8. **Respect:** Special consideration is given to respect for dissent, which naturally is always present. Consequently, the tasks of mediation are key to the coherence, viability and feasibility of the meetings and actions.
9. **Altruism:** Altruism, manifested in the commitment to the environment and society, is not inherent to a sector of society: citizens, politicians, businessmen, scientists, others- but rather to those who decide to devote time and energy to it. As each meeting is in the making, such considerations emerge explicitly or implicitly, sometimes with amazing clarity.
10. **Co-operation:** These meetings follow the logic of co-operation, of sharing, of knowing more and better identities, as well as the needs and dreams of the others and the collective. Efforts are being made to promote participation, and to bring officials or specialists in the field on which they are going to work closer to the meeting.
11. **Actions and objects:** In both workspaces: Tables and “inter-tables”, the actions that are agreed upon are part of micro-objects of transformation: problematic punctual, actions, where the subjects are protagonists in a dialogical process. The Tables overcome the insufficiency of thought, reflection and theoretical lucubration so as to, by means of incorporation, promote decision: action with reflection. The object is always multidisciplinary (Morin 1965) and there are “multiactors” (scientists, neighbors, politicians), while the actions are also multidisciplinary and “multiactors”.
12. **Democratising:** All the previous considerations, allow us to affirm that the Working Table is an instrument that contributes to democratise democracy in capitalism, in communism, even in the corruption inherent in both systems.

3.4 Permanent Work Tables Results

Of the 29 topics of the “Territory, Industry and Environment” Scientific Agenda, four topics have been addressed in the first seventeen Working Tables that were carried out: “Destabilisation of oil/water emulsions using chitosan (biopolymer) inside the YPF Refinery”; “Industrial pollution and health”; “Extension of the Ricardo Balbín Highway”; and “Contamination in the Port Channels”. The next subject approved for its treatment is “Wetlands and Territorial Ordering”.

Out of the 26 topics of the “Puente de Fierro Territorio Posible” Scientific Agenda, twelve topics have been dealt with in the first twenty Working Tables carried out: 1. Community garden offered by the Micro-Entrepreneurs Program of Cáritas Argentina (2016); 2. Collective decision about the type of public spaces that neighbors want (2016): already executed the works of three public spaces; 3. Periodic collection of waste (2017); 4. Promotion and execution of two training courses in the neighborhood (Ministry of Labor, 2017 and Vocational Training Center No. 423, 2018); 5. Conception, design, elaboration, execution and interpretation of the Census “Decent work, identities, needs, and dreams” (2017-2018); 6. Planning, writing and editing of the “La Revista de Puente de Fierro” magazine (2017); 7. Identification of more than 500 people willing to be trained to have a decent job, classified by category (2018); 8. Greater dialogue and participation among neighbors, organisations and other institutions 2016-2018); 9. “Club Ambiental Escolar” (Environmental School Club) Project in the province of San Juan (2018); 10. Nationalization of a lot for

the creation of a pre-school, school and health center (2018); 11. Pilot initiative of paths with plastic fibres (industry waste) to replace iron meshes (2018); 12. Project which has as its main objective that over 70% of the neighborhood, that today does not have sidewalks, gets them with local co-operative work. (2018)



Figure 5. Aerial view of the Puente de Fierro neighborhood (2017). Photo: Tomás Canevari



Figure 6. Aerial view of the Petrochemical Pole in Ensenada (2017). Photo: Tomás Canevari

4 Conclusions and perspectives

If the scientific work of the few million researchers that we are on the planet does not manage to involve a greater proportion of the 7500 million human beings that populate Earth, then most of the scientific knowledge produced will be further away from the 3500 to 4000 millions of human beings that today not only do not decide, but they do not know the power that comes with the good use and application of thousands of scientific advances. Therefore, the importance to be more aware, in each scientific investigation of which we are a part, of whether what we produce is used to perpetuate the dominant tendencies in our planet (status quo), if it is to criticise and resist hegemonic systems and subsystems, or if it is to produce transformations: subjective, social, environmental and decisional, that build, in facts rather than in mere discourse, millions of places, subjects, processes and possible territories. This is achieved by working, not without inertia and failures, in tandem with exact, natural and social scientists, with communities, politicians and businessmen, making everyone more aware of their role in the arenas where we have to develop.

In institutions, scientific disciplines, companies and in many other aspects of life, the topics are presented sectorialised, as if they were plots of reality. Sectoral agendas can be drawn by Comprehensive Agendas, not only participatory-scientific ones. Both the life of each human being and the development of each place do not constitute analytical mosaics. The implementation of these more comprehensive Agendas takes place with the realisation of specific punctual actions, which at the time of execution are still sectoral. However, in praxis they are not: if each sectoral or punctual action is not contextualised and executed with a more integrating vision, the risk of failure increases.

Besides the two Agendas introduced in this article, there are currently about fifteen structural topics of Scientific Agenda that in our TAG Territories Possible network we have identified, after learning about said topics and listening to the presentations of more than 700 projects in 55 universities in 12 countries of Latin America (2009-2018). In short, they are as follows: 1. Response to native peoples; 2. Large scale mining, environment and society; 3. Underground aquifers; 4. Fracking in hydrocarbons; 5. Informal urban developments; 6 Vacant urban and peri-urban land; 7 Large industries, environment and territory; 8. Municipal decentralisation and allocation of resources; 9. Social economy and environment in rural areas; 10 Social economy and work in urban environments; 11. Environmental tourism with social economy; 12 Territorial planning with intelligence and territorial justice; 13 Children, teenagers and the future; 14 Continental ice; 15. Other topics in analysis. Each topic is integral although it has a portion of sectoriality in its original formulation. The exemplariness and replicability of these problems in a large part of the most neglected sectors of Humanity, and of the least taken care of environments, if worked with people and science, can give rise to more democratic and inclusive Public Policies.

The real incorporation of community actors, politicians, entrepreneurs and diverse scientific disciplines in our research begins with a series of no less than 10 interviews at the moment prior to the beginning of the investigation: this helps to define, in the most solid way possible, problems and possible solutions, and with it, the object of research in its three phases: study, intervention and transformation. The selection of interviewees is complex, thorough and must be representative of the problem that will be investigated. The

worldviews, histories and perspectives of each interviewee are always different, and consequently, so will be the disputes of meanings. During the process of investigation, consistency is to be kept in accordance with the Theories of Transformation that are decided to investigate and deepen and with the real solution, not the discursive one-.

Underlying all of this is the matter of power, which is the subject of another publication. The political, economic and social powers investigated by Erik Olin Wright are the object of an attempt of theoretical applicability by this author through four strategies that he calls anti-capitalist. We investigated and tried to apply two of them: symbiotic and interstitial (Olin Wright 2014: 329-371), highly related to top-down and bottom-up management styles respectively, as well as when the author refers respectively to domesticate and erode capitalism. In our first 37 Work Tables we have tested Wright's hypotheses. At the same time, the three premises of the Southern Epistemology in Boaventura de Sousa Santos have been the object of attempts of application in our 37 Tables: "1. There will be no global social justice without global cognitive justice (our aggregate: global environmental justice); 2. As it was in the beginning, capitalism and colonialism continue to be deeply intertwined; and 3. The epistemology of the South aims primarily at knowledge practices that allow intensifying the will for social transformation" (de Sousa Santos 2009: 338). Of the 29 and 27 Agenda Topics, we have addressed 4 and 6 topics in these first 37 Tables: in all of them, we have analysed the relationships between political, economic and social powers, as well as in the multiple micro-powers at play, in which not only do the powers themselves participate but also our human miseries. To overcome discourses, generating from the praxis, actions and results that account for viable alternatives to capitalism is not only a challenge for damaged societies and environments, but to strengthen with praxis Theories of Power and Theories of Transformation.

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About the authors

Horacio Bozzano: PhD., is Professor in the University of La Plata, Buenos Aires, Argentina. Institutional affiliation: Instituto de Investigaciones en Humanidades y Ciencias Sociales, Universidad Nacional de La Plata, CONICET Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina. Coordinator of the Territory, Actors and Governance research programme which focuses on Participatory Action Research.

Tomás Canevari: Bachelor and doctoral student in Social Communication. Assistant Professor at the University of La Plata, Buenos Aires, Argentina. Institutional affiliation: Instituto de Investigaciones en Humanidades y Ciencias Sociales, Universidad Nacional de La Plata, CONICET Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina. He works in community-engaged action research specialising in the fields of communication and education.

Authors' addresses

Horacio Bozzano

Facultad de Humanidades y Ciencias de la Educación

Universidad Nacional de La Plata, Ensenada, Buenos Aires, 1925

E-mail: bozzano59@gmail.com

Phone: +5492214373420

Tomás Canevari

Facultad de Humanidades y Ciencias de la Educación

Universidad Nacional de La Plata, Ensenada, Buenos Aires, 1925

E-mail: tomascanevari@gmail.com

Phone: +5492235189578