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Building Bridges: Social inclusion problems as research and innovation issues

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Abstract

The paper discusses why specific efforts aimed at establishing direct relationships between social inclusion problems and research and innovation projects are needed, what the main difficulties to achieve this are, and how can these difficulties be addressed. Its concrete anchorage comes from the successive calls for applications of a program implemented by the Research Council of the Universidad de la República, Uruguay, "Research and Innovation Oriented to Social Inclusion".

A critical appraisal of this experience and the main lessons learned are presented through the lens of an analytical tool: a circuit in which different types of actors interact, starting with the recognition that a social inclusion problem exists and ending with an effective solution for the problem.

None of these notions are taken as given; on the contrary, they are closely examined with the help of different theoretical approaches. The paper analyzes with some detail the possible short-circuits that may occur at each stage of the circuit and what its causes might be. It analyzes as well the transformations undergone by the aforementioned program and its attempts to avoid the short-circuits, evolving in that way towards a more hands-on strategy to link research and societal needs.

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1.- Introduction

The arguments that justify the usefulness of research and innovation in the public discourse are increasingly centered in the contribution that both, combined, would make to economic growth, and eventually, to economic development. The economic growth would be benefited due to the increase of productivity in the existing activities; the economic development would come from the opening, through research and innovation, of new production branches or the birth of knowledge-based firms.

The hypothesis that these series of events would conduct, directly and with no further interventions, to the generalized improvement in people's life conditions is illusory; multiple examples illustrate this. Equally illusory is the hypothesis that, as a derivation of the capability of having great scientific and technological achievements we will be capable of solving the social exclusion problems that our societies face up. That this is not true has been stated far ago; an inspiring essay of Richard Nelson (1974) analyzes the reason why is (at least) naïf to believe that taking a man to the moon would assure the eradication of the ghettos.

There are, at international level, a variety of initiatives that are becoming increasingly visible and that reject (i) that from growth comes naturally social inclusion and (ii) that the existing knowledge would automatically collaborate with such inclusion. What they have in common is the acknowledgment that knowledge is a powerful tool –never alone, always needing to be combined with other tools- in the search of social inclusion.

In the Universidad de la República, Uruguay, more precisely in its Research Council, the concern to incorporate problems that affect the most deprived sectors of the population to research agendas has been expressed in a competitive research call for applications named “Research and Innovation Oriented to Social Inclusion”. The reflections included in this paper are related to the experience in implementing this program.

The questions faced when working with this issue are diverse. What is a social inclusion problem from an academic research point of view? This is not a simple question.

Researchers that might have the knowledge required to help solving some social inclusion problems will effectively participate in such an endeavor if the problems require research as part of their solution. However, it has often occurred, in the encounters organized to put people affected by such problems in contact with researchers, that the former bring up issues where research has no relevance. There is, thus, a problem of demarcation which must be solved.

On the other hand, is it sufficient to identify the problems that already have a voice? We suspect that those problems would be the iceberg's tip of a vast set of problems that remains invisible from the perspective of a potential contribution of research to its comprehension, and, maybe, its resolution. Research can have something to say, but important as it may be, little would be accomplished if many other actors, seriously and systematically, do not combine their actions in a rational way in the prosecution of a sheared goal that commit them all. Who are those actors? There is no general answer: much will depend on the problem itself and on those directly affected by it. But the question is valid, and it takes to an additional one: how a complete map of the actors capable to intervene in the building of solutions, in its diffusion and in its full implementation could be constructed?

Obtaining answers to those questions is essential to improve the design of new policies like the ones that the Research Council carries out.

The search for answers starts from a couple assumptions. First of all, a basic one: academic research can contribute to find solutions for social inclusion problems. A second assumption is that searching and obtaining solutions implies a multi-stage process, as well as a systemic behavior of the different actors implied in the search. This approach is analytically depicted by means of a circuit that represents the trajectory of the solving problem processes.

Our reflection develops in the framework of the "South", meaning that even though we heavily use the National Systems of Innovation approach, we take as well into account that differently from the "North", we are dealing here with a rather "ex-ante" theoretical construct. (Arocena y Sutz, 2001) This implies that we will probably not be dealing so often with well behaved systemic circuits, but with truncated trajectories, and even with situations in which the first step leading to the beginning of a trajectory is missing. This is why besides depicting the circuit as an analytical tool to take into account the

encounters between actors in the process of problem solving, special attention is paid to the possible short-circuits that can truncate the travel and affect the systemic behavior.

Starting from these assumptions, the paper is organized in the five following sections, plus a few concluding remarks.[4] Section two characterizes social inclusion problems as research problems; section three deals with the actors that intervene in the process and their interactions; section four describes the circuit that goes from problem setting to the solution finding; section five analyzes the short-circuits that may occur at each stage of the mentioned circuit; section six reflects on the process of institutional learning that fostered the changes followed by the program from its fist call until now.

2.- Social inclusion problems as research problems: bridges to be built

By social inclusion problems we understand those that severely affect the quality of life of some groups, at a material or symbolic level. These problems refer to the disadvantages of individuals or social groups that are excluded of the opportunities sheared by others (Sen, 2000). In agreement with Sen, we set social exclusion analysis in a frame that goes further the poverty notion, to comprehend it as capability deprivation. Although the deprivation may be derived from economic causes, this is not the only dimension that may lay beneath social exclusion.

According to the referred author, some kinds of deprivations may drive to social exclusion and, at the same time, the exclusion situations may cause new forms of capabilities deprivation. Following Sen, we distinguish between the constitutive and instrumental nature of social exclusion. The first one referring to situations in which the exclusion is by itself a deprivation: a lack beyond other deprivations that the exclusion situation may generate. On the other hand, when there are relational situations of deprivation that do not have much intrinsic relevance but –through causal chains- may drive to other deprivations, the exclusion is said to be instrumental.

Another distinction proposed by the author is between passive and active exclusion. In passive exclusion the deprivation occurs through social processes in which a deliberate intention to exclude does not exist. On the other hand, in active exclusion there is a purposeful action undertaken to exclude a social group (by the government or other actor). An active exclusion may generate other exclusion situations not expected or

[4] The three first sections are based on Alzugaray et al 2011.

intended, therefore, passive.

By virtue of the foregoing, what is considered as a social exclusion situation is social and historically sited; it is a relational situation, which has other social groups as a reference. Therefore, that situations categorized as a social exclusion has temporal and spatial variations.

We consider that Sen.'s analytic proposal is useful and allows circumscribing diverse social exclusion situations, not all of which are included in the frame we are working with. Every person may feel excluded from opportunities that others have. This does not mean that, in a frame such as the one we are proposing, every situation of this type should be equally looked after, but rather the most urgent ones: concrete deprivations that cause a significant limitations to the quality of life in absolute terms. In other words, those situations that Sen characterizes as constitutive exclusion. We will focus as well in situations that do not come as a result of a deliberated intention to exclude, but are consequence of events that have ended up, as an unwanted effect, in social exclusion.

Once the social inclusion problems are delimited, there are at least two conditions they should fulfill to allow academic research to address them.

The first condition is the problem of agency, concept similar to "voice" in Hirshman's (1970) terminology: it expresses the capacity to set a point of view or a demand. Even though the "voice" concept is associated to "exit" (both options of social action are alternatives in expressing discontent or unconformity), the "voice" definition is useful for our purpose: "any attempt at all to change, rather than to escape from, an objectionable state of affairs" (Hirschman, 1970: 30). The agency concept is strongly linked to Sen's approach, whose recommendation in relation to development process is to visualize people as agents and not as patients. It is a concept connected with people objectives, which are valued, wanted and looked after for a reason. The lacking agency problems not only are difficult to detect, but also the essential articulation between different actor's efforts, in pursuit of a possible solution, is almost impossible.

We consider that a problem "has agency" if it is recognized as such by an actor directly linked to it. Not infrequently researchers may figure out how her/his knowledge can contribute to the solution of some kind of social inclusion problems, but this outlook "from the supply side" of knowledge does not guarantee the agency.

The second condition alludes to its nature as a problem and, therefore, to the kind of interventions needed to reach its solution: if new knowledge is not what is required, research will provide little help. In these sense, the "social inclusion problem that requires research for its solution" notion may be discussed. If in the problem's roots we identify justice and power asymmetry as causes, the academic research contribution can be seen as a palliative, of little effectiveness as a solution component. Problems with such roots are the extremely high cost of some vaccines for some diseases that affect mainly or fundamentally some countries that do not have the resources to pay for them; the absence of investment in vital infrastructure –such as sewage-, starvation and undernourishment in the midst of the world's food overproduction, among many others.

It is opportune to clarify that both the notion of problem and of resolution that we are using in this paper does not necessarily address the identification and search of structural causes and less so to work on their removal; the main condition that problems need to have to be taken on board is to hamper social inclusion and to require new knowledge as a part of the solution-building process.

We want to stress that although we emphasize the need of new knowledge to contribute to finding solutions, with similar forcefulness we recognize that the articulated commitment of a diversity of actors is an essential ingredient as well.

At last, the question remains why the Universidad de la República intends to build bridges that put in contact research and efforts to solve social inclusion problems. The most direct answer is related to the Latin American universities' social vocation, heirs as they are of the Cordoba's Reform (1918). But there is another answer, related to the Research and Innovation Oriented to Social Inclusion Program's objectives. One of them is to produce new knowledge that contributes to the resolution of social inclusion problems. But another one, not least important, is to collaborate to the recognition of social inclusion problems by the researchers' "academic radars". The resulting research agendas will therefore be richer and the University integration into society will be stronger.

3.- Intervening actors

Sábatos's and Botana's (1968) classic concepts are a clear frame of reference for our reflection. Their systemic approach as well as the required actor's interplay are taken

here in order to characterize the social inclusion problem resolution circuit. That is, the set of actors, stages and relationships necessary to attempt to solve problems.

The system, in these authors work, consists of three types of actors, represented in the geometric shape of the triangle, and with particular emphasis on fluid relationships between the vertexes to describe the functioning of the system. These actors include government, scientific and technological structure, and production structure. The type of actor is defined by means of a functional criterion (Sábato and Botana 1968:5).

The aim of this section is to characterize an ideal system of interrelations between different actors, to address social inclusion problems requiring new knowledge generation for its resolution –in addition to political will and resources-.

Actors are defined by their role in the system, rather than their institutional affiliation or membership. It resembles the functional definition proposed by the authors mentioned above.

The actors involved in the system are at least four: government, researchers, production structure and actors directly linked to social inclusion problems. This fourth vertex is a collection of diverse and heterogeneous actors, but defined by a common role within the system.

The **governments'** place in the system is determined by multiple roles: to ensure acceptable levels of life quality for its inhabitants; to actively demand knowledge for problem solving; to bear responsibility in the implementation or research results; to facilitate interactions with and among the other actors.

Researchers are not only called to integrate the system for their ability to generate new knowledge, particularly from and for their context. This actor also has the role of generating knowledge concerning the problem *itself*, integrating it with the knowledge that the affected population and other stakeholders may have. Besides, they have a role to play in creating the mechanisms to allow the effective integration of all the system stakeholders.

The role of the **productive structure** in the systems is to render operative the solutions generated in the research process. Particularly in the case of technological solutions, the productive structure is responsible for passing from the prototype stage to the delivery of complete products and services able to be put at work.

We now come up to those actors directly linked to social inclusion problems. Their characterization and definition is perhaps the most complex one. This vertex is made up by actors directly related to the problem, but with different types of connection with it. It includes:

- Sectors of the population directly affected by the problem, namely, those who suffer it or their organizations
- Actors who are not directly affected by the problem, but have a tight connection with those
- Civil society organizations
- State sectors and NGOs implementing public social policies.

The category membership *directly affected by the problem* is given to actors suffering the problem. For the rest of the actors of this vertex, the membership is given by their direct knowledge of the sectors of population suffering the problem, their direct knowledge about the problem or its symptoms.

The role that defines the membership to this vertex is the potential or effective capacity of making the problem visible for the rest of the population, and to generate a demand for solution. The actors in this vertex acquire, in turn, responsibility for the solution's implementation and acceptance.

It is important to distinguish between those directly affected by the problem who do not visualize it as such (they are identified by others as affected by the problem) and those affected that are conscious of being such. For the first ones the problem may be naturalized, be a part of their lives, and therefore not taken as a problem.

Moreover, once the problem is assumed as such by someone, the possibility to become visible at a macro-social level widens. The issue of the visualization of problems is a capital one; thus, the actors capable of producing information and analysis about the problems are strategic for finding solutions. The following diagram illustrates the structure of this vertex that perhaps should be better characterized as a “cloud”.

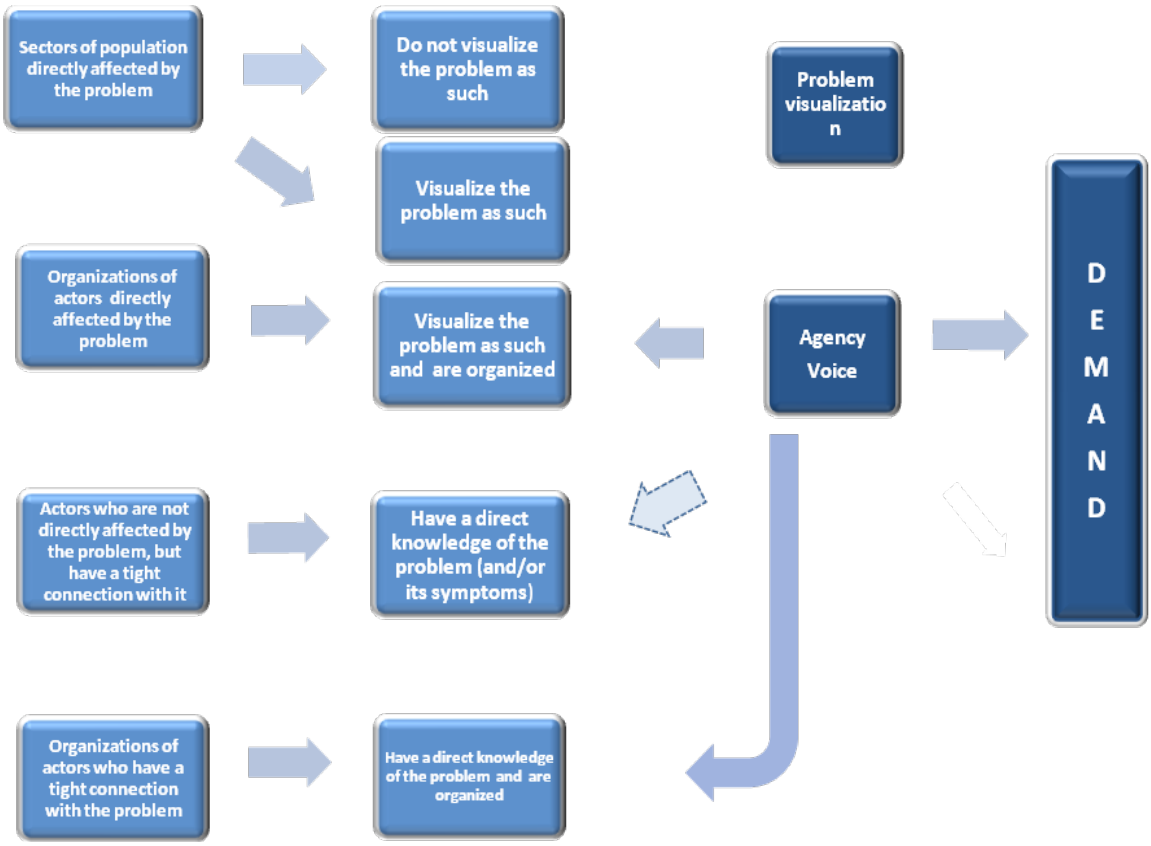

Figure 1. Actors directly linked to the social inclusion problem

4.- The circuit: from the problem to its solution

Putting the above mentioned stages into a graphic circuit that begins with the problem and ends with its effective solution may describe more clearly the process by which the necessary links between the different actors are established.

It should be noted that in certain cases some of the steps may be absent; moreover, the route presented is not necessarily sequential and progressive, and it admits going back to a previous stage to refine the definition of the problem or to clarify some other points. What we are offering is an analytical breakdown of the process from the problem to its solution.

What defines the beginning of the circuit is the existence of a sector of the population affected by a **problem**. The first step to take in the travel around the circuit is that they themselves or others take the problem as such. This does not necessarily involve describing or diagnosing the problem (at least at this stage), but to acquire an awareness of the existence of a inequality situation that (i) limits the quality of life of the affected

sector, and (ii) may be linked to at least one problem which solution can profit from new knowledge .

From problem to demand

Once the problem is understood, or at least its symptoms are understood as a barrier to social inclusion, it visibility at a macro-social level requires that a demand for solutions is raised. We define demand as an abstraction of the problem, recognized as such and externalized in terms of "need for a solution" to an unacceptable situation in a given society, according to its parameters of justice. It is then when the problem acquires a public dimension and the need to reach a solution to it appears clearly at societal level.

Many actors may intervene in the construction of demand, in a combined way or alone: actors that suffer the problem, their organizations, those that have a direct link with it, and/or academic actors.

From demand to research

For the problem to be solved –at a cognitive level- this demand must be known by researchers with the capacity to generate knowledge to achieve this objective. The researchers must then understand the main features of the problem, if they have already been identified, or otherwise must characterize it as a research problem.

The demand may be known by researchers in two ways: with or without third actors that mediate the passage from one stage to another. In absence of such mediators, researchers dialogue directly with those that suffer the problem and evaluate whether they can or cannot solve the problem at a research level. If their skills can be mobilized in this regard, the social inclusion problem is translated into a research problem.

In the case where the passage from demand to research is mediated by others, they may be:

- *Other researchers:* especially the social sciences may highlight the existence of problems of social inclusion to other researchers from all fields of knowledge.
- *State actors*: as mentioned above, the State has the responsibility to ensure acceptable levels of quality of life for all people; it should in particular generate information about the characteristic of the problems that hampers this aim. However, a distinction must be made between

problems that can be solved with the available resources, and those that cannot. These last should be made available to the researchers, who will try then to discern whether or not the problem requires fresh research to be solved.

- *Mass media:* in this case, the demands arrive to the media without prior distinction about the kind of social inclusion problem they refer to, that is to say, whether or not it resolution requires new knowledge generation. Again, is the researcher who can make the distinction and put or not his/her research capabilities at work to solve the problem.

From research to production

The outcome of the research process will be the prototype of the solution for the social inclusion problem. We understand as prototype any research outcome, in any knowledge area, that has not yet been taken to the necessary scale to solve the target problem.

Once the prototype is in place, it must be scaled-up to allow the solution to reach all the people in need of it. Actors in the productive structure of goods and services, in the private and in the public sphere, are those who should take in charge this stage of production.

In the passage from prototype to production, the intervention of public policy becomes critical. In the search for solutions to social inclusion problems, public procurement for the full-scale production of solutions becomes fundamental to provide the right incentives and warrants able to drive innovation decisions. This is so because the part of the population usually affected by social inclusion problems does not constitute an attractive market for business firms, and so the certainty provided by public procurement can have a very effective countervailing effect.

From production to the effective solution

The result from production will be a technical solution; the latter has to pass through a process of diffusion, to reach all the affected sectors, and through a process of adoption, final step in the achievement of a solution for the social inclusion problem.

Again, public intervention is crucial in this step, given that the transit from a technical solution to an integral solution is far from spontaneous. The State has or can develop a series of instruments and mechanisms to facilitate the diffusion and the adoption of solutions.

The following figure depicts in a stylized way the circuit and the travel around it.

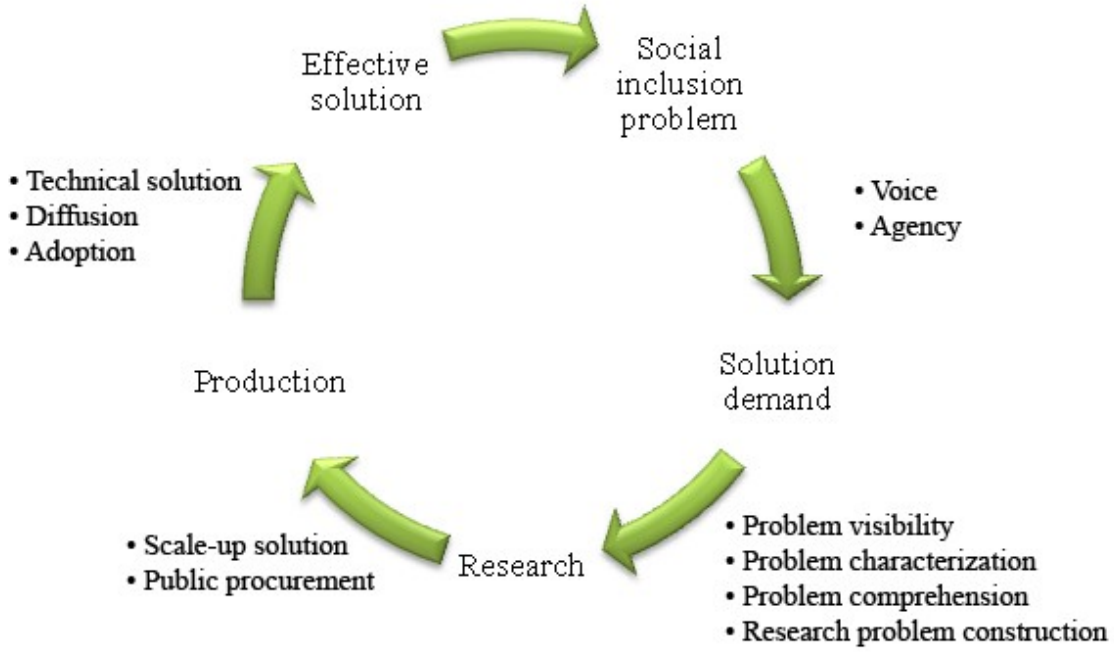

Figure 2. The circuit. From the problem to its effective solution

At stated at the beginning of this section, we have characterized the functioning of a system of interrelationships between different actors which aim is to find solutions to a particular kind of social inclusion problems: those in need of new knowledge to be solved. We propose to call this set of interrelationships between actors and institutions *System of Research and Innovation for Social Inclusion*. The differences between such a system and others (national, sectoral, etc.) stem from at least two aspects: the first one is that this specific system deals exclusively with social inclusion problems; the second one relates to some of the actors included, that are seldom referred to in more "classical" systems of innovation.

5.- Short-circuits or why the solution may not be found

We indicated before that we were proposing an "ideal" circuit to depict analytically the process that starts with the recognition of a problem related to social inclusion and finishes, hopefully, with a solution. The travel around the circuit is far from smooth, though, and short-circuits can happen in each passage from a stage to another. This sections is devoted to analyze such short-circuits.

From problem to demand

Why may a problem not be identified as such, remaining invisible by those that suffer from it? The answer to this question is important for the Program we are dealing with, because invisible problems will never become research subjects.

The phenomenon denominated by Jon Elster "adaptive preferences" can be a significant obstacle for the recognition of the problematic nature of some situations, particularly for those long term deprived people that are directly affected by them. According to Elster, adaptive preferences evolve from a non conscious process of adaptation to situations where opportunities are limited; the effect is to diminish the frustration derived from desiring something that is out of reach. Such frustration is explained by Elster resorting to the notion of cognitive dissonance by Festinger: every person tries to achieve an internal coherence between their opinions and their attitudes; inconsistencies are psychologically uncomfortable; those that experiment these inconsistencies try to eliminate them and to re-establish the previous coherent state. The way to achieve this, that is, to resolve the cognitive dissonances, would be through adapting the volitions to the real opportunities at hand; this in turn can be achieved through a process of degradation of what is at the same time desired and unachievable, and by valuating more what already exists.

In this way, after a long and daily experience of situations of social exclusion that either are not addressed or are not resolved, adaptive preferences may provoke a sort of naturalization of these situations. If this happens, it would be difficult for different types of actors to conceive them as problems, hampering the possibility to design circuits oriented to its solution.

When a problem as been turned invisible by a mechanism such as an adaptive preference, we will not know about it: this is merely a tautological assertion. However, some times the problem is rendered visible while the actors remember when it was

invisible. This is the case of a trade-unionist of the Uruguayan rice rural workers, interviewed during the evaluation process of a project presented to the Program. He explained how the consciousness of a health problem took place: “We knew that policemen retire, that teachers retire, that public servants retire, and that we, rice-workers, die before retiring. We die faster, without any doubt. (..) If you apply glifosato to pastures you put it and you don't go there in the next three months. But in rice is different: you put the poison today and you must go into the water tomorrow, the same water into which you have spread the poison the day before. This is, we believe, the great difference.” Now they are worried, they are organizing themselves, they are talking with people from the university, from the extension services and from the chair of occupational medicine, but until recently they simply understood death as a consequence of “regular” illnesses and not as a process accelerated by working conditions.

The capacities to build demand are linked to agency and to voice, as well as by the margin of action the latter have. Such margin of action can be conceptualized as the degree of expansion of the freedoms people enjoy. (Sen, 1999) If society, through the current correlation of forces, limits the action's possibilities mobilized by agency, the demand construction process will become to a great extent inhibited.

Agency and its margin of action can be related to the society's capacity of self-producing, that is, by its level of historicity (Touraine, 1977). If society is a “situations' consumer” instead of being a producer of her own social and cultural field, we shall surely be in face of a society in which actors have low levels of agency and/or low margins of action of their agency. We can then state that the society's capacities of self-producing will set the border's conditions for demand construction and for the margin of action of such demand. We identify at least three great configurations that link the capacities of society to self-producing with the short-circuits that can occur in the resolution of problems of social inclusion:

- If the short-circuit that impedes the passage from the problem to demand appears systematically, it can be inferred that its roots are deeply entrenched with the social system, precisely where historicity is produced. In these cases, where the blockage is structural, the opening of the flux through the circuit requires the impulse of deep changes in the social system.

- Differently, if the short-circuit is selective and appears only in some occasions, that is, it exists only and sometimes for determined actors, we are in a situation of unbalance in the correlation of forces between actors; this may eventually be tackled to allow the travel along the circuit to begin.
- If the short-circuit is selective, centered around the same actors and persistent in time, we are again facing a structural blockage, but probably biased towards certain actors and associated with certain type of problems. In cases like these the opening of the flux through the circuit will require more focused, but my no means weaker impulses stemming from social change than the first situation.

From demand to research

At this point researchers are acquainted with demand; they can know about such demand through dialogues with actors linked to the problems or through intermediaries. In any of these cases the passage from demand to research can be short-circuited by different types of difficulties.

From the demand side

Even if problems are identified and the need for research to solve them is recognized, the concrete demand for producing the needed knowledge can be quite weak; eventually the weakness of knowledge demand will produce the short-circuit that can stop the travel along the circuit.

In Latin America the weakness of knowledge demand, even though usually analyzed in the case of production, is even more accentuated in relation to social inclusion problems for at least two reasons. In the first place, due to the weakness of all types of demands stemming from the population most affected by social inclusion problems: weak knowledge demand is in this case a particular manifestation of a more general situation. This weakness of demand is associated, among other issues, to the lack of self-constitution as a social group, being atomization a main consequence.

The second reason is related to the fact that the organizations that voice marginalized groups and try to better their situation, be them NGOs or the State, rarely view academic research as a tool at their disposal. One of the persons interviewed with the aim of detecting demand before the Program 2008 call was responsible for the Ministry of Social Development's section on disabilities. She identified clearly as a bottle-neck in

the betterment of children with severe neuromuscular problems the high cost of imported special spoons that would allow them greater levels of autonomy. The University's Center for Design could have tried to search for a solution, but the idea that there are researchers able and willing to address the challenge was not present, inhibiting the expression of demand.

The encounter between demand and research

The passage from demand to research can be stopped if the researcher is not able to characterize or to properly understand the problem, thus failing to build a research problem. This can occur even when dialogues between researchers and actors directly linked to the problem are in place: in such case a communication failure is probably present, driven by the use of different linguistic codes. Communication difficulties have been reported again and again in the literature on cognitive dialogues between people with quite diverse types of knowledge. (Caron-Flinterman, F. et al, 2006, Chataway, J. and Smith, J., 2005).

From the research side

Some times the researchers' “academic radar”, that is, the tool they use to detect the problems to be tackled in their working agenda, is not able to capture the kind of problems associated to social inclusion. The Academic Unit was asked to give a talk in the Faculty of Sciences “because we want to participate but we don't know to what kind of problems we can apply our expertise, and we don't know either how to look for such problems”.

Well known difficulties for linking research to developmental purposes in general, and to problems of social inclusion in particular stem from the academic reward system. This is not only a “Southern” difficulty; concerns about the uselessness and distorting effects of counting papers as the paramount criteria for academic excellence is growing everywhere. But in places where the seriousness of social exclusion makes focused research more important, the developmental and social blindness of the academic reward system is particularly worrisome.

Science is not yet able to deliver solutions, or the local conditions for doing research do not allow to follow a working strategy that may be too costly or that requires cognitive capacities that are not present.

From research to production

From the research side

The problems of social inclusion can be extreme complex in cognitive terms, requiring sometimes totally different heuristics approaches to cope with the conditions in which the problems need to be solved. It can occur, then, that researchers were not able to find a solution in cognitive terms. It can be that progress has been made and even solid steps towards a solution have been achieved, but the research project was not able to deliver what it had promised.

Sometimes the research process was not able to find a workable solution. Perhaps a laboratory solution has been found, but to implement the solution in real life much more research is needed; or much more money is necessary; or actors like business firms should enter into the play and there is not certainty that they will do that; or the characteristics of the users where not carefully taken into account and they will not be able to incorporate the would-have-been solution. Sometimes the project presented to the call does not promise a workable solution but a research effort that can contribute to the advancement of knowledge around the problem: if even in this condition the project was supported, it is important not to blame the researcher afterwards for not delivering a workable solution.

Occasionally a mismatch between the research and the problem may occur. A research proposal dealing with problems of social inclusion usually needs great amounts of dialogues between the researchers in charge of the project and other actors related, in a way or another, to the problem for which solutions are searched. If such dialogues are too sparse, it can be expected that the sphere of research and the sphere of the problem "in real life" become growlingly divorced. If worst comes to worst, such divorce can be detected at the end of the circuit, when there is no chance to redress its effects.

From the production side

This type of short-circuits usually comes from the difficulties found on the production's side to implement the solution even in small batches. It takes time, it costs money, it needs a lot of adjustments, it can lead to transformations in the marketing and logistics strategies: we are talking here about innovation in its classical meaning of changes in routines. These obstacles can be overcome with the right set of incentives, aimed at countervailing the difficulties to explore new and uncertain productive venues.

The well known technology public procurement policies can have great impact in redressing this short-circuit. Even if not so directly, public policy can be fundamental to avoid it. When a public policy, for instance in the realm of health, creates a market by assuring that everyone will have access to a health product even if she is not able to pay for it, because the state will take the cost in charge, an important incentive is set to pass from cognitive results to production. Of course, if this incentive is used by the same public policy to import solutions that could have been developed at home, we face an extreme example of the weakness of the national demand of knowledge directed to national capacities.

From production to the effective solution

The concept of "effective solution" would deserve more attention: we only say here that we conceptualize effectiveness as the incorporation of the solution in such a way that the problem detected at the beginning of the circuit diminishes its harmful consequences. It seems clear from this characterization that the role of the public policy is of great importance, from assuring complementary interventions needed to put the solution in place to a good distribution of the solution if necessary. Short-circuits can appear then in case of weaknesses in several of the fundamental workings of the State: legitimacy, capacity to exercise control over the territory or the functioning of the state bureaucracy.

On the other hand, the issue of the adaptive preferences mentioned at the beginning of this section can constitute an obstacle itself at the very end of the circuit. The circuit can have been traveled and this travel can have been accompanied by people with an acute consciousness of the problem and a strong will to overcome it, but they may as well represent a minority of the people affected by the problem. If the majority has developed adaptive preferences, the implementation of the solution can be blocked. This case is analyzed by Pereira (2007): he posit that one of the reasons why social policies targeted to people in extreme poverty or victims of domestic violence fail even if they have been carefully designed is precisely the issue of adaptive preferences. The fable of the fox and the grapes with which Elsert (1988) illustrates the operation of the cognitive dissonance can be a clarifying analytical device to understand why the blockage of the technical solution can occur at the end of the circuit. Even if a solution is made available, the grapes may not be accepted...

6. - Policy answers to the advancement in the conceptualization of the problem

The way to make operative the conceptualization described so far has been a specific Call for Projects, which first edition was launched in 2003, followed by two others, in 2008 and 2010. The conditions of the Call evolved through time, following a better comprehension of the difficulties at stake: the analysis of this evolution is the aim of this section. The account is made from the Academic Unit of the University Research Council's perspective. This group is at the same time a scholarly academic group and is in charge of the academic management of the research programs of the Council. It was responsible for the design of the first call and for proposing transformations both in the conception of the call and in its implementation.

The overall objective of the Call is to foster national research agendas that take actively on board problems that negatively affect processes of social inclusion for large parts of the Uruguayan population. This basic objective, tentatively proposed since the first Call, has been reinforced: nothing in the experience developed so far indicates that it was just wishful thinking without practical anchorage. However, transformations were introduced in the following calls. They where induced by changes in the national context as well as by considerations stemming from the learning process associated with the concrete practice of the calls.

The context of the first call, in 2003, was a deep social and economic crisis at country level, which genesis went back to the beginning of the nineties; such crisis had a full blow with the financial crisis of 2001 in Argentina that severely affected Uruguay in 2002. The differences between Argentina and Uruguay notwithstanding -in Argentina the crisis had direct political consequences while in Uruguay the political parties were able to maintain some stability- both countries witnessed a severe process of deprivation that affected wide sectors of the population. The social role of the Universidad de la República was fostered by the dramatic situation experienced by the country. The first paragraph of the Call “Research Projects Oriented to Social Emergency”, eloquently describes the national situation when the Call was being conceived (view for instance Figure 3).

> Uruguay is immersed in an unprecedented economic and social crisis. A recession of many years combined with the dismantling of a great part of its productive units have led to an

> unemployment rate near 20%, a figure largely below that of the youngsters seeking for jobs without finding them. The qualification of “social emergency” fits well the present situation, when hunger makes itself present massively, giving rise to vast social mobilizations to try to cope with its most dramatic manifestations. This situation affects particularly children and young people, who are the most damaged by the severe process of impoverishment suffered by the population. The growth of precarious lodgings aggravates the sanitary conditions in which more and more people live and the public health system, at the verge of collapsing, is getting out of hand, a situation nurtured by the long agony of the mutual health assistance system. The environmental conditions deteriorate and phenomena like human lead contamination dangerously evolve from isolated anecdotes to permanent problems. The lack of perspectives foster migration processes of an entity only comparable to that occurred thirty years ago. For those which “social capital” is too low to allow them to emigrate, hopelessness activates circuits of violence which effects are fairly notorious.

The call was directed towards projects “which main aim is to study one or several aspects of the social emergency situation in which many sectors of the population are living, and to propose solutions/answers/alternatives to cope with them”.

To be eligible for this call, the proposals must:

i) identify precisely the problem associated with some expression of the social emergency suffered by the population;

ii) ii) indicate the shortcomings in terms of the existing knowledge to address possible solutions;

iii) propose a research strategy for obtaining, even partially, the missing knowledge;

iv) indicate the necessary conditions to enable the research results obtained to be an effective contribution to the solution of the problem under consideration, indicating as well the actors that should participate in solution's implementation;

v) devise strategies to involve such actors in the discussion of the proposal and to assure their participation in putting into practice the results that can be obtained by the research.

In this first call, even though the systemic conception was already present, emphasis was put on stimulating only one actor of the system to travel across the circuit: the researchers. The relationship with other actors, not yet clearly identified in the call, should be declared without any requirement to demonstrate the steps undertaken to assure such relationship.

The researchers should design strategies for detecting the problem of social emergency or social inclusion, transform the detected problem into a research problem, obtain the cognitive results and, after all that, assure the effective translation of such results into practice to achieve an effective solution. The travel across the circuit induced by this specific call included only the research stage, even though the need to build linkages between researchers and other actors in the system was indicated.

In the year 2008 a new call for research projects with similar characteristics was made, introducing some changes derived from the gathered experience and from further academic research around the issue. Moreover, the economic, social and political context had changed. With the leftist coalition Frente Amplio in government since 2005, different types of sound social policies were implemented, pointing specially to the lowering of poverty and indigence figures. Some years later, Uruguay showed an unparalleled rate of economic growth: at the end of 2008 the country growth reached 8,9% and the level of unemployment was below two digits (for additional information view Figure 3).

For the 2008 call special emphasis was made in the previous recollection of demand, that is, problems with agency or voice. One of the lessons learned from the previous experience was that such recollection was a must, because researchers were not able by themselves to get fully acquainted with needs and demands stemming from social problems, even though many of them were more than willing to put their capacities to contribute to the solution of such problems. The point was to help the researchers' "academic radar" to identify new and unfamiliar challenges.

Undertaking such recollection in general, that is, targeting all possible types of needs and problems would have been totally impractical. This is why it was decided to narrow the search and to focus on three types of problems: equity in access to high quality health services; the effects of the Plan Ceibal, or "the one laptop per child" program

implement in Uruguay since 2007, and the needs and demands present in two poor neighborhoods in Montevideo, profiting from the work done in these territories by a specific university program, the Integral Metropolitan Program.

To achieve this recollection, several meetings were organized by the Academic Unit with actors directly related to the type of problems previously defined. Such actors included representatives of the people bearing the problems, intermediate actors not directly affected by the problems but with direct contact and with well acquaintance of them and public officers.

The information gathered during these meetings was systematized and publicly exposed to university researchers, public policy officials and people directly related to the problems in an open and massive gathering, the First Congress of Research and Innovation Oriented to Social Inclusion, as well as in thematic workshops. In this way, the Academic Unit started working in between the actors with direct linkages with the problems and researchers with capacity to build answers for such problems. The results of the above described process were a main ingredient in the definition of the 2008 call.

For reasons which analysis falls beyond the scope of this paper, the efforts done to identify demand and to communicate it were not massively reflected in the proposals presented to the call. However, some proposals were build around demands that were not detected beforehand but emerged from face to face contacts produced during the workshops.

One important difference between this call and the previous one is that the university research policy recognized itself as an actor in the process and assumed a protagonist role in facilitating encounters between researchers and other actors. As a result, the policy facilitated the travel across the circuit from the problems' identification to the demand, and from there to the research problem. As before, the rest of the travel is recommended or suggested but is not directly induced.

In 2010 a new call was put in place, consolidating the program as a University Research Council regular program. In this year, Uruguay was one of the very few countries not affected by the global economic crisis: the GDP grew 8,8% in 2010 and unemployment fell to 6,8%. (INE, 2011)

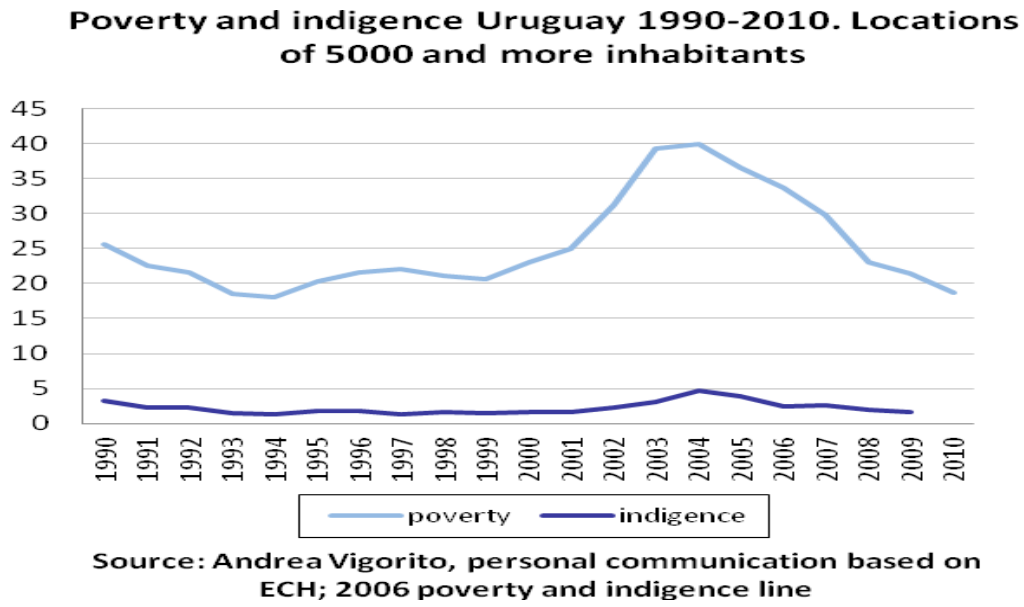

Figure 3. Graphic of poverty and indigence

The new call presents similarities but also important differences with the previous two. The systemic notion that inspires the call receives a more detailed and precise explanation, widening the characterization of the actors that need to participate in the finding of an effective solution to social inclusion's problems. This was incorporated into the formalities to apply to the call: the proposal must demonstrate that dialogues with non-academic actors were established to get a better comprehension of the issues at stake; the commitment of these actors to contribute in different ways to the success of the proposal is also formally required. The participation of non-academic actors can take quite different forms, from financial support to participation in the implementation of the solutions found through research: the important point is that such commitment, whatever its form, needs to be stated and signed by these non-academic actors.

Attention to the detection of demand continues, as well as the determination to organize workshops and wide gatherings to foster face to face relationships between actors directly linked to the problems, and researchers that can listen and recognize such problems as belonging to their field of competence. What is new in this call is the effort made from the university research policy side to link these two actors -problem bearers or its representatives and potential research problems solvers- with other type of actors which role emerges from their capacity to assure the effective implementation of solutions.

The intention was to pay special attention to the last type of actors before the closing of the call. In several occasions these actors played a double role: they were directly linked to the problems by a thorough knowledge of its nature and dynamics, and at the same time they have access to public action needed to assure the passage from the cognitive solution to an effective solution. In these cases of "double role" not only a clear presentation of the problems was achieved, but the assurance of the interest to find concrete solutions was conveyed. This is why in the 2010 call the Academic Unit was not so much involved as in 2008 in the detection of demand but it concentrates in convoking diverse actors from the sphere of public policy, from social and non government organizations, from society in general as well as from academia to a series of workshops. In these workshops a wide list of themes were addressed: energy, health, habitat, public social policies, gender and education.

An innovation was also introduced in the evaluation process: part of the appraisal of the proposals included interviews with the non-academic actors indicated in the presentation forms. These interviews were conducted by members of the expert group in charge of the evaluation and by members of the Academic Unit. The non-academic actors included representatives of organizations of people bearing the problems, actors related in different ways to the problems but without bearing them directly, and actors working in the public sphere with capacities to foster the effective implementation of solutions. Only as a way of example, actors of the first type included representatives of cooperatives of hand garbage collectors and of rice rural workers trade unions. Examples of the second type of actors are a medical doctor in charge of the only public laboratory of the country entitled to perform lead contamination diagnoses, for people in general, especially children, and for exposed workers; a second example is a group of psychologists and social workers dealing with different kinds of homeless people. Examples of the third type are the governmental Program "Plan Juntos" (Plan Jointly), set to address the issue of people without decent housing, as well as a Municipality dealing with urban planning that tends to include excluded people in the vicinity of a highly expensive and exclusive sea-resort. These evaluation meetings were important indeed to gain a better comprehension of the problems involved and to better harness the commitment of actors to a future implementation of a solution, if founded. From the Academic Unit perspective, they constituted a very valuable analytical tool for further reflection and learning.

Furthermore, these interviews allowed the detection of new research demands; they also allowed detecting inconsistencies between what the research proposal wanted to do and the problem that gave rise to the demand. In such cases the proposals were reformulated and a much better research strategy was obtained.

Another innovation in the 2010 call is the opening of a second modality of research projects, with a lower time-frame and less allocation of resources for each individual proposal. Its main objective is to avoid the two first short-circuits in the travel across the circuit, that is, from the problem to the voiced demand, and from there to the research strategy. Again, the stimulus addresses the university researchers, which will need to formulate a project having as starting point a problem of social inclusion which existence they suspect but without much clarity around its dimension, deepness, characteristics and scope. The aim of this type of projects is to allow the clear delimitation and characterization of the problem and the identification of the actors suffering from it as well as those actors endowed with capacities to contribute to its solution. The outcome of these projects are other projects, full-fledged research projects, with a well developed strategy to deal with the problem and with sound contacts made with other actors to maximize the probabilities to transform their results into solutions. These full-fledged projects will compete again for funds, even though some will be funded directly if the outcomes of this previous stage are good enough. They can be carried-out by the same researchers or by different researchers, identified in the process of characterizing the problem. This modality goes a step further in pushing the university research policy towards a hands-on strategy to link research and societal needs.

7.- Concluding remarks

Uruguay would fail to recognize itself in a mirror reflecting the social, economic and political context present when this program was developed for the first time. Such reflection would show a far away country, the press being a witness of such distancing: from the problems of hunger of a great proportion of the population the issues are now the long lines at the doors of the big commercial surfaces to buy plasma TV; from violent robberies for food of that time to different types of security problems associated with the uneven economic growth and the persistence of social exclusion; from the bankruptcy of hundreds of firms and the damaging personal indebtedness in dollars to inflation in the national currency and a type of foreign exchange favorable to imported consumption; from massive firings and salaries reductions to negotiated rises in salaries between workers and entrepreneurs mediated by the State, plus very low levels of unemployment.

All these notwithstanding, Uruguay continues to have important groups of its population excluded from the access to a dignified quality of life, besides the implementation of diverse types of social policies, and a sustained economic growth. The persistence of these situations of exclusion makes even more valid the premise from which the university program “Research and Innovation Oriented to Social Inclusion” derives its normative vision: there are situations of exclusion which reversal will not come only through political will or by devoting to their solutions increased amounts of money, even though these factors are absolutely crucial. For some of these problems new knowledge is necessary to reach effective solutions, in tight and systemic articulation with other actors, each playing his role.

The program has advanced in its formulation, refining and clarifying the means to reach its ends; it has achieved this through learning and reflecting from its successive implementations. We can say that the Program has made is own travel through the circuit, trying, from one call to the other, to identify short-circuits and ways to solve them. The main objective is to facilitate the travel around the whole circuit.

However, we should not forget that the university by itself will never be able to assure the completeness of such travel. Only the joint and systemic action of the identified set

of actors can allow this initiative reach the scale needed to tackle the problems of social exclusion that we are facing, a scale measured in the number of different problems and in the complexity of many of them.

Despite the fact that all actors are relevant, it is worth stressing the need of a strong commitment of the public policy, not only inducing circuits and participating actively in part of the travel along them, but as a fundamental vector in the process of institutionalizing National Research and Innovation Systems for Social Inclusion.

References

ALZUGARAY, S.; MEDEROS, L. & SUTZ, J. (2011): "La investigación científica contribuyendo a la inclusión social". *Revista Iberoamericana de Ciencia Tecnología y Sociedad*, nº 17, vol. 6.

AROCENA, R. & SUTZ, J. (2003): *Subdesarrollo e Innovación. Navegando contra el viento*. Cambridge University Press, Madrid.

CARON-FLINTERMAN, F.; BROERSE, J. & BUNDERS, J. (2005): "The experiential knowledge of patients: a new resource for biomedical research?" *Social Science & Medicine*, vol. 60, pp. 2575-2584.

CHATAWAY, J. & SMITH, J. (2005): "Smoke, Mirrors and Poverty: Communication, Biotechnological Innovation and Development". *Innogen Working Paper*, nº 36.

ELSTER, J. (1983): *Sour Grapes: Studies in the Subversion of Rationality*. Cambridge University Press.

HIRSCHMAN, A. (1970): *Exit, Voice and Loyalty*. Londres, Harvard University Press.

INE (2011) www.ine.gub.uy

NELSON, R. (1974): "Intellectualizing about the Moon-Guetto Methafor: A Study of the Current Malaise of Rational Analysis of Social Problems". *Policy Sciences*, nº 5, pp. 375-414.

PEREIRA, G. (2007): "Preferencias adaptativas: un desafío para el diseño de las

políticas sociales". *ISEGORÍA. Revista de Filosofía Moral y Política*. nº 36, pp. 143-165.

SÁBATO, J. & BOTANA, N. (1968): "La ciencia y la tecnología en el desarrollo futuro de América Latina". *INTAL - Revista Integración y Comercio*, Buenos Aires, año 1, nº 3, pp. 15-36.

SEN, A. (2004): "Why We Should Preserve the Spotted Owl". *London Review of Books*, vol. 3, nº 26, pp. 1-4, accesible en: http://www.geo.unizh.ch/~backhaus/GLOPP-CD/A2/en/multimedia/A2_amartya_sen.pdf, última fecha de acceso 13 de junio de 2010.

SEN, A. (2000): *Social exclusion: Concept, application, and scrutiny*. Manila, Asian Development Bank.

SEN, A. (1999): *Development as Freedom*. Oxford University Press.

TOURAINE, A. (1977): *The Self Production of Society*. University of Chicago Press.