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## **Social Capital and Trust in the Design and Evolution of Institutions for Collective Action: Case Studies on IP Coordinating Mechanisms in Plant Genetic Resources and the Biomedical Sector**

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## Introduction

Intellectual property (IP) rights – and in particular patents – tend to occupy a prominent position in many ongoing debates about so-called “grand challenges”, such as climate change, food security, protection of biodiversity and global health. Often IP rights are regarded as “part of the problem” and reason for limited access to fundamental products and services required to address these challenges. Public and private actors have made attempts to create collective action institutions which may assist in facilitating access to those essential technologies and services. Examples are the International Treaty on Plant Genetic Resources in Food and Agriculture (ITPGRFA) with its associated Multilateral System of Access and Benefit-Sharing and the Medicines Patent Pool (MPP). However, these transnational collective action institutions generally require active and voluntary collaboration by the right owners concerned. In practice, support for these institutions appears to be limited or even declining. Empirical research has shown that a lack of trust is one of the major issues that discourages stakeholders from collaborating with these institutions (Frison, López & Esquinas-Alcázar, 2011 and van Zimmeren, et al., 2011).

In this light, the objective of the current paper is to develop an original account of trust in the field of large scale and transnational collective action institutions. Our *main research question* relates to the desired structures and mechanisms within institutions for collective action, which would stimulate stakeholders to sustain trust in order to safeguard the effective operation of institutions for collective action. We claim that in various sectors and contexts stakeholders encounter difficulties in setting up an experimental institution for collective action, that is, to create structures that incite actors to find the optimal way to sustain trust, to organizationally acknowledge and learn that process and to nourish it with the precise normative idea behind the institutional apparatus. In the areas of plant genetic resources and biomedicine, stakeholders have encountered this challenge while experimenting with different coordination mechanisms for dealing with the increased appropriation of knowledge through patents.

Our *theoretical framework* for studying trust will be based on the social capital paradigm. We will use it both as an entry point and as a referential paradigm to develop our governance discourse. We believe that the institutionalist approach of social capital constitutes an incomplete and unfortunate understanding of the collective action issue. Our criticism of social capital is based on the instrumentalization of the concepts “institution” and “trust”. This assumption is based on two different arguments that are interlinked by the particular issues at stake in collective action and – more essentially – by the epistemological nature of this criticism. The *first* argument operates at the level of the capitalization principle of the sociality. The *second* one is related to the conception of the trust phenomenon. Our focus on trust enables us to question the potential of that theory to facilitate processes of value revision that should be at the heart of any normative apparatus, and to shed some light on the potential of the pragmatist program.

The two case studies on IP coordination mechanisms for plant genetic resources and biomedicine are used to contextualize and illustrate the theoretical framework. These studies reflect the trust issue formulated in this paper and show the challenges in framing alternative governance proposals. The two case studies demonstrate that the conceptual shift towards commodification of plant genetic resources and the increase of patented biomedical inventions has led to parallel trends and seemingly contradictory challenges. Stakeholders in these sectors realize that due to the growing complexity and increased costs of research and development (R&D) increasingly collaboration between private actors and between private and public actors has become vital. Both private and public actors have been cheering the phenomenon of “open innovation” whereby organizations increasingly benefit from the knowledge and experience proliferating outside the boundaries of the

organization by way of “purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation, respectively” (Chesbrough, Vanhaverbeke & West, 2008: p. 2; Chesbrough, 2006 and Chesbrough, 2003). Open innovation occurs between a wide range of – often *unobvious* (Piller, Ihl & Vossen, 2011) – external partners (e.g. customers, suppliers, competitors, universities, public research organizations, investors, intermediaries, consumer organizations, farmer’s organizations, and other Non-Governmental Organizations (NGOs)) with a large variety of interests. It can be facilitated through a wide range of *formal* and *informal* organizational modes (e.g. in- and out-licensing agreements, R&D alliances, consortia, networks, patent pools, open source, crowdsourcing platforms) (van Zimmeren, Van Overwalle & Kovacs, forthcoming). In the event that open innovation requires the involvement of a large number of partners and access to knowledge that has been protected by way of IP rights, it may call for the creation of institutions for collective action in the form of international IP coordination mechanisms that facilitate collaboration and guarantee access to essential goods and services and/or equitable (re)distribution.

In spite of this tendency towards more collaboration, we observe a (growing) distrust amongst stakeholders active on emerging markets for intangible goods often previously understood as “commons”. Open innovation does not always entail a similar “openness” and innovative attitude with regard to access to IP rights. This distrust makes it challenging to create such coordination mechanisms and to safeguard the proper functioning of the mechanisms. Hence, in order to facilitate these “open” collaborations, sustaining trust is fundamental in each stage of the creation and evolution of these expert institutions that collect, develop and relay resources, knowledge and/or IP in a network of stakeholders with a wide variety of interests.

As a first step of our analysis (A.), we describe the institutional potential of social capital theory. This potential lies in the capacity of this theory to take into account the complexity of any collective action in a non-reductionist (i.e. non-strictly economist) manner. In the second tread of the analysis (B.), we emphasize the relevance of the recognition that the emergence of the social capital paradigm goes along with a historical fact: the liberalization of our economies. Social capital is a concept that implies a separation between the economic and the social spheres, condescending the fluidity of capital – i.e. its social aspect. Yet, the idea of social capital entails such a liberal principle and we believe that its corollary logic of commodification, privatization and the associated “legalization” may be at the heart of a general increase of distrust. The case studies seem to confirm this intuition. The third step of our study (C.) consists of the detection of the underlying mechanism of trust. In this part, we first explore the nature of trust proposed by a rationalist explanation in accordance with the social capital theory. Secondly, we explain why such theorization is inapt to produce the revision of beliefs required in order to face governance issues in a complex and globalized world. Finally (D.), we mobilize some pragmatist insights proposed by experimentalism. This new institutional perspective does not only sustain a more complete conception of trust, but it also suggests some recommendations that are in line with the lessons learnt from the case studies.

We aim at going beyond a purely utilitarian explanation of the actors’ commitments and a simply instrumental understanding of their relations with institutions in order to promote a local responsiveness to global issues along non-reductionist governance principles. The focus on social capital and trust will give us the material to interrogate the nature of human relations and the issue of the revision of values at the heart of social innovation and experimentation.

## **A. Theoretical framework of social capital**

Social capital's theoretical framework has been elaborated in two broader contexts than those at stake in our case studies: the conflicts of influence between economic and social sciences, and the relationship between citizen communities and their state institutions. Even though these epistemological and democratic contexts may appear farfetched from the main topic of our paper related to trust and governance issues in IP coordination mechanisms, they are essentially linked by the concept of collective action governance. The governance principle is based on the premise that public interest satisfaction is reached through the reflexive articulation of the normative production movements of public institutional devices and social collective actors (Lenoble & Maesschalck, 2010). Within this mindset, the core idea of this first chapter is to present the potential of institutionalism to go beyond the reductionist limits of the Rational Action Theory (RAT).

### **A.1. Potential of the institutionalist context**

Institutionalism has emerged in the social sciences in order to better understand the radical bureaucratization of the modern society as observed by Max Weber. Moreover, it also contributes to putting into perspective the paradigmatic expansion of RAT. In brief, the fundamental idea of the RAT is to apply an economic approach to the whole spectrum of human activity oriented on an individualist philosophy and Anglo-Saxon utilitarianism. Principles such as *homo oeconomicus*, utility maximization, stable preferences and market truths entered the social theory through that powerful – because simple – and highly explanatory – because reductionist – theory<sup>2</sup>. Based on the development of game theory, RAT became the paradigm in the collective action field with the free-riding issue as its challenging core and the alpha and omega of its solution. Indeed, as Mancur Olson famously stated, “unless the number of individuals is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, *rational, self-interested individuals will not act to achieve their common or group interests*” (Olson, 1965: p. 2).

The first step of the institutionalist movement was to underline how institutions are working and how they influence society in unexpected ways. The concept “institution” was mostly conceived in terms of its formal dimension, as concrete organizational structures. The second step, called new institutionalism, extended the conceptualization to the formal and informal dimensions of the social game. Two breakthrough studies – *The New Institutionalism: Organizational Factors in Political Life* (James March and Johan Olsen, 1984) and *The Economic Institutions of Capitalism* (Oliver Williamson, 1985) – enabled the “translation” of the “theoretical threshold” established by the RAT into political science (the public choice theory) and economics (the neoclassical theory). Indeed, by focusing on the contextual aspects of institutions – i.e. political organizations and firms – and their (previously neglected) impact on the implementation of a policy or the general equilibrium in a market, those theories provided leverage to criticize the individualist methodology and the utilitarian principle at the core of RAT. As a result, contextual aspects of institutions, such as history, culture and idiosyncratic normativity, were integrated into the scope of the collective action reflection.

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<sup>2</sup> Russell Hardin, one of the advocates of the RAT and the famous promoter of a rationalist approach to trust, describes RAT as follows: “Rational choice theory is the descendant of earlier philosophical political economy. Its core is the effort to explain and sometimes to justify collective results of individuals acting from their own individual motivations – usually their own self interest, but sometimes far more general concerns that can be included under the rubric of preferences” (Hardin, 1998: p. 64).

The question whether that integration has led to a destabilization of the rationalist paradigm or to its reinforcement appeared soon to be nontrivial. Claiming that institutions have an impact on the social context, but that in turn this context also has an influence on the institutional performance, the thesis at the heart of the social capital theory opens the way to an economic interpretation of social complexity. Even if actors are conceived as cognitively limited, it is still possible to analyze their behavior from a reductionist utilitarian point of view, and to create rational choice institutionalism<sup>3</sup>. Because their rationality is conceived on the basis of a bounded hypothesis, governance structures (contracts, organizations and institutions) are perceived as a support for individuals to continue to maximize their utility on incomplete information<sup>4</sup>.

## **A.2. The social capital paradigm**

Within this framework, the social capital theory gained ground with the publication of Robert Putnam's *Making Democracy Work* (1993). Putnam studied the nature of the civic traditions in modern Italy. Similar to his renowned precursor, Alexis de Tocqueville, he sees in the associative factor the core principle of the democratic project. Influenced by the seminal work of Elinor Ostrom in *Governing the Commons*, Putnam relies on her definition of a "successful" institutional arrangement as an arrangement "that [enables] individuals to achieve productive outcomes in situations where temptations to free-ride and shirk are ever present" (Ostrom, 1990: p. 15). Putnam mobilizes the concept of social capital in order to crystallize the nature of social normativity that makes democracy work. Social capital results in generalized trust created by the presence of civic networks, norms of reciprocity and associative institutions among a population. It is considered "capital" because it is a set of resources with productive capacities, but which is different from human and physical capital. Voluntary cooperation is easier in a community that has inherited a substantial stock of social capital, in the form of norms of reciprocity and networks of civic engagement.

Trust, norms and networks are then understood as resources that permit to go beyond the collective action dilemmas: they give access to the best outcomes (i.e. the less expensive) in the prisoner dilemma, the free-riding issue and the tragedy of the commons. A community with an important stock of social capital, in other words, with a lot of interconnectivity between its members, is better equipped to display collective actions. Democracy requires an energetic civil society<sup>5</sup>.

## **A.3. Questioning the social capital potentiality**

Social capital then becomes a core theoretical concept that helps to synthesize how cultural, social and institutional aspects of communities jointly affect their capacity to deal

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<sup>3</sup> For example, with his "transaction" concept, Oliver Williamson (Williamson, 1985) aimed at taking into account the non-market dimensions of the economic activity, while separating the market and the non-market domains analytically in order to preserve the logic of the first one, and to be able to gradually interpret the resources of the second one into that logic.

<sup>4</sup> Other neo-institutionalist authors, such as Douglass North (North, 1990), presented theoretical views where institutions aren't conceived as simple stopgaps to the market imperfections, but as the key factors that enable their performance creating opportunities to reduce the uncertainty and the complexity of interactions.

<sup>5</sup> Whereas North believes that the institutions shape the economic and political performance, Putnam emphasizes the idea that institutional performance is directly linked to the social context within which formal governance structures operate (Putnam, 1993).

with collective-action problems (Ostrom & Ahn, 2003). Therefore, it is essential to *understand* how social capital can be built and sustained. Yet, it seems even more vital for a political theory to *interrogate* how such networks are created and maintained, and to *question the nature of interactions* between citizens and political institutions. The capitalization of social factors is a fundamental concept of social capital theory that requires further thinking. Even though its potential to explain collective action issues may be considerable, we believe that its conceptualization has been badly directed. Although ensuring good quality social exchanges is not something inherently misplaced, the idea of “making stock of human interactions” in order to satisfy particular interests is far more problematic. When this phenomenon is being theorized, one should carefully consider the reasons and the logic behind its emergence. Some authors have used it in a way respectful of social complexity, such as Pierre Bourdieu (Bourdieu, 1972), whose work has been largely eclipsed by the paradigm elaborated by Putnam.

Hence, an important question is which social principle is at stake within the associative focus realized by the social capital theory? In Putnam’s work, the answer to that question is far from clear. On the one hand, his dedication to the institutionalist paradigm seems to give him the credit of a non-reductionist approach of the social context (which is, indeed, the kind of potential proposed by the new institutionalism). On the other hand, his references to the social capital conceptualization by James S. Coleman, gives us the impression that he did not fully grasp that exact potential.

## **B. The capitalization development**

Theories are the results of their time. The propositions that they sustain are scientific efforts to explain concrete phenomena and problems, but they are also deeply influenced by the particular beliefs framework at a certain place and time. Hence, a theory is an historical product that tends to generalize an experience. To study it also gives access to the state of things. It appears that, in parallel with the facts illustrated by our two case studies, the success of the social capital theory proves the stranglehold of a liberal set of beliefs based on our contemporary reality and socio-economic theorizations. Indeed, the logic of capitalization that lies within social capital theory and its corollary of the reification of social connections align well with trends of commodification of plant resources and biotechnological inventions. The core proposition of this section is that, by separating the economic and social realms, and by giving to the first one and its analytical abilities the superiority over the second one, such theorization not only justifies an instrumental logic but also disables access to its criticism. As will be shown by the case studies, the legalization of the last decades in knowledge exchange in plant genetic resources and biomedicine indicates the victory of the idea that the translation into marketable goods is the solution to any collective action issues.

### **B.1. An economist foundation**

James S. Coleman’s objective was to create a sociological paradigm based on the powerful principles of the RAT. According to Coleman, every social interaction can be explained by an analogy with market interactions. Human behaviors are strictly guided by their private interest, and the social realm is nothing less than an abstraction that results in the aggregation of all non-personal factors. Like in neoclassical economics, the decisions are taken through the organizational principle of a perfect market, and individual choices are the *modus operandi* of every kind of collective action. Within this mindset, individual values

and beliefs become only relevant to a scientific reflection in terms of their influence on economic behavior. Coleman defends a theory of social exchange, where the social should/can only be explained by the cooperative relations on the long term between rational actors guided by their own private interest. “The social system then comes to consist of individualistic solutions to individual problems, with all suffering at the hands of each, as each carries out his actions unconstrained by their consequences for others. It is in this sense that social norms constitute social capital” (Coleman, 1988: p. 101).

Norms and institutions are the aggregate outcomes of an economic negotiation, and their function is to maintain cooperation through their coercive impact. In this sense, social capital is not an outcome of the human relations by themselves, but an outcome of the organizational structure of relations. Similar to other forms of capital, social capital is a resource that enables the functioning of the social system through principles of interest and control. So, according to Coleman social capital is an economic variable functionally defined by its *control by the actors* and legitimized by the *realization of their interests*. Its theoretical use corresponds to an “analytical umbrella” protecting any socio-relational principles that presumably would not align well with a neoclassical way of thinking.

## **B.2. The fluidity of capital**

Ben Fine, expert of the early political economy – the political economy of Adam Smith, John Stuart Mill and Karl Marx – has extensively criticized the social capital paradigm. According to Fine, the fundamental risk of the social capital theory is inherent in its core premise: if social capital exists, it means that the other forms of capital are not social. Any use of the term social capital is an implicit acceptance of the stance of mainstream economics, in which capital is first and foremost a set of asocial endowments possessed by individuals rather than, for example, an exploitative relation between classes and the broader social relations that sustain them (Fine, 2001). This also indicates that an essential separation between the social and the economic spheres should be made and that the hypothetical-deductive epistemology of the latter gives us the key to understand and explain the first one. According to Fine both assumptions are wrong: capital is social by essence. The denial of the fluid aspect of capital, the fact that any form of capital has a social consistency to the extent that power relations are implied through the capital production, leads to an erosion of the concept. The term social capital could be used as a powerful tool of economist imperialism in the social sciences<sup>6</sup>.

Because capital is inherently linked to social aspects, it is important to take into account and to evaluate its contextual impacts. A social capital approach seems to result only into the interrogation of the use by individual actors of their social interactions in order to create efficient institutions. Yet, institutions are far more complex social constructs that require an analysis in terms of their influence on collective actors. In this regard, especially our first case study related to plant genetic resources clearly shows that the application of a market logic to resources, which were previously perceived as accessible to everyone, through a simplification mechanism of appropriation may destroy the surrounding social texture. Privatization institutions in the forms of IP rights, in particular patents, have been used to sustain that logic. The result of increased appropriation has led to a belief amongst the stakeholders of a loss of the non-economic aspects of the resources they manage: a common heritage of mankind with respect to plant genetic resources, and deontological issues of access to innovation in the area of biomedicine.

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<sup>6</sup> Finally, other issues soiled the social capital paradigm, such as an analytical separation between private and public spheres, a neoconservative tendency and some methodological and historical weaknesses that lead to the eviction of the power issue.

### **B.3. Case studies: Commodification and privatization**

Typically, farmers have always developed, conserved and widely exchanged various plant genetic resources, i.e. crop and forage varieties. Until the middle of the twentieth century, public researchers and plant breeders through trustworthy collaborations continued these open patterns of use. Since the 1960s, the rise of modern biotechnology and new regulatory national or international instruments, such as the Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) (WTO) (1994), have led to the “enclosure” of plant genetic resources for food and agriculture (PGRFA) through different appropriation mechanisms, mainly related to the patenting of biological material which has significantly hindered access to PGRFA. The conceptual shift that occurred from the concept of PGRFA as common heritage of mankind to the commodification of PGRFA resulted in an increase of “private control” and enforcement of private interests over these resources; hence, to a further limitation of the access to these resources.

In the biomedical sector, pharmaceutical companies have traditionally used patents as a strategic mechanism to safeguard their investments in R&D for new compounds and to maintain their monopoly position that enables them to charge high prices for medicines. However, the last decades a growing number of NGOs have challenged the use of such strategies with respect to medicines for patients in developing countries and the lack of R&D investments in neglected diseases. This has led to a variety of public-private partnerships, bilateral collaborations between companies and projects by individual pharma companies to overcome global health problems and the need for more R&D in neglected diseases. Moreover, the emergence of modern biotechnology has resulted in new types of technologies, diagnostic tools, therapies and treatments characterized by their complexity and variety of components. Public and private have adopted different patenting strategies in this area resulting in an even more “crowded” patent landscape for individual technologies, tools and treatments. Even though the fear for a “tragedy of the anticommons” in biomedical research (Hardin & Eisenberg, 1998) may not have been realized, in some fields companies have encountered serious difficulties in negotiating licenses for further R&D and the provision of health services (e.g. Cook-Deegan, Chandrasekharan & Angrist, 2009; Huys et al., 2009; Merz et al., 2002). This last phenomenon has mainly been discussed with respect to developed countries. However, on the long term similar problems may emerge for developing countries.

In these cases, we observe the following two phenomena. First, with respect to plant genetic resources for food and agriculture (PGRFA), a conceptual shift from the concept of PGRFA as common heritage of mankind to the commodification of PGRFA through private property rights over these resources, which has contributed to a growing distrust amongst stakeholders. We will describe below how the institution designed to retrieve trust has failed to realize this goal for now. Second, stakeholders in the biomedical sector perceive a growing need to engage in open innovation to deal effectively with major scientific, technical and financial challenges. Despite this growing interest in collaboration and establishment of common R&D projects in response to the needs of developing countries, various attempts to establish patent coordination mechanisms that could further facilitate such collaborations have only had limited success. We contend that the increased appropriation of resources has led to the disintegration of communities of actors guided by other values than the neoliberal ones. Therefore, it is vital to examine how they could be reconnected through civic networks with sets of beliefs linked to our global grand challenges, such as food security, biodiversity protection, biomedical ethics and global health.



## C. The trust issue

Our criticism on the social capital theory can be extended and expanded through the analysis of its trust conceptualization<sup>7</sup>. The trust phenomenon is at the heart of the social bond and is often used as a common explanatory feature of the success of collective action. But to handle trust as a resource that is simply created through the free encounter of supposedly equal actors in negotiation is, once again, a very strong statement relying on a very simplistic social logic. The trust concept at stake within the social capital paradigm appears to only rely on liberal values of community formation, putting aside other complex cultural and historical factors. The case studies illustrate the limits of commodification logic and show how a free market, where institutions are only organized along coercive principles, is inapt to create trust. More precisely, they demonstrate why trust sustained by such coercive principles becomes irrelevant when a deep discrepancy of values is prevalent and a revision of such values is required. The case studies clearly indicate the need to recreate a trustworthy, neutral and expert collective action institution around alternative values reflected in common informal norms that may sustain biodiversity, biotechnology ethics and a sense of openness and collaboration. The legitimation of such values goes beyond the rationalist explanation of trust formation based on notions of *control* and *private interests*.

### C.1. A rationalist explanation

According to Hardin, trust is nothing less than an encapsulation of interests. He states that, "I trust you because I think it is in your interest to take my interests in the relevant matter seriously in the following sense: you value the continuation of our relationship, and you therefore have your own interests in taking my interests into account" (Hardin, 2002: p. 2). This proposition fits well within the social capital paradigm. In fact, the main focus of Hardin is rather on trustworthiness than on trust. One trusts someone with respect to the expected realization of some future event. The reason why networks are producing trust is because people fear retaliation by the others if they appear to be untrustworthy; hence, this is an issue of public recognition. The reason why norms are producing trust is because citizens know that they may receive coercive measures if they don't respect them; hence, this is an issue of *public control*. Like in Coleman's theory, trust is regarded as a micro-phenomenon (A trust B to do X) that explains macro-outcomes such as social norms and institutions.

All these authors seem to refer to the utilitarian and liberal principle of a society as a free market. However, they are all aware of the necessity to have strong central institutions in order to maintain peace or, more precisely, collaboration. The old political principle of mutual advantages – the aggregation of individual consents – at the basis of the creation of the Leviathan – the coercive principle of law<sup>8</sup>. "What seems to be evident is that individuals who are left to their own values commonly have strong welfarist preferences. Market

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<sup>7</sup> Unfortunately, neither Putnam nor Coleman explore the concept of trust in great detail. They simply use the concept of trust and tend to mix it with social capital. To understand how they perceive trust, we will refer to the famous trust theory of political scientist Russell Hardin (Hardin, 2002). The reasons for integrating Hardin's trust theory into the current discourse are twofold. First, the rational choice institutionalism defended by Hardin shares similarities with Putnam's work. Secondly, Hardin refers in his work to the social capital account realized by Coleman (Hardin, 1999).

<sup>8</sup> In this respect, Hardin is juggling between the socio-skeptic anthropology of Thomas Hobbes and the radical political economy of Friedrich Hayek. In our view, this meeting point between those two authors represents the general idea of the social capital paradigm and its subsequent trust conceptualization.

economic and liberal political institutions allow them to pursue those values. (...) The institutions of market economics and liberal politics are mutual advantage and in both the underlying individual value theory is own-welfare” (Hardin, 2001: p. 6). Institutions are then strictly understood by their control and enforcement functions. They guarantee the respect of the free conditions of the interpersonal negotiation exclusively conceived around the realization of welfarist preferences.

## C.2. The revision of values

Does this strictly utilitarian comprehension of the trust phenomenon fully grasp its complexity? There’s a *routine aspect* to trust, something far from any cognitive evaluation that cannot be fully explained by the rationalist approach. Several modalities cannot be founded on a private interests calculus. Philip Pettit (Pettit, 1995) calls this the “cunning” of trust, the fact that often when a trusting request is put in motion, people naturally tend to positively respond to it. Simply presenting a trustworthy attitude automatically raises some sort of expectation of the relationship at stake<sup>9</sup>. We do not support a notion of social trust obligation, but rather an optimistic ground of social trust. And that fundamental trust basis is nothing less than the product of informal institutions and norms and heterogeneous values (i.e. not only interest-based values) that sustained them. To trust is a leap of faith, a suspension of the judgment that permits a relational commitment through a complex web of beliefs. And this intrinsic force, the energy produced through this kind of commitment is to take into account if we want to fully understand what is at stake within collective action.

Our intention is not to claim that this routine conceptualization of trust is better than the rationalist one, but to start from the presumption that they coexist and complement each other. Yet, the rationalist account does not allow a complete reflection in terms of the routine beliefs revision process. And these kinds of processes seem to become key features in our complex and globalized societies. Using the famous distinction made by Niklas Luhmann (Luhmann, 1979) between “trust” (active – to trust) and “confidence” (passive - to be confident), the philosopher Adam Seligman (Seligman, 1997) explains one important issue of modernity. He describes a decreasing interpersonal capacity to trust our peers coupled with an increasing propensity to simply be confident on the functional capacities of institutions and the social organization. In other words, people tend to trust each other through the law<sup>10</sup>.

This is a somewhat paradoxical but incredibly powerful – because truly insidious – development realized by the contemporary neoliberal political economy and its capitalist program. This development, on a rationalist account, has been able to diffuse its core set of beliefs where the success of one is the success of all. But at the same time it has removed the individual propensity to actively revise this exact set of beliefs. Through the secularization of the principles of financial liquidity and of consumerism, capitalism has deeply implemented the idea that only the interpersonal and contractual negotiation is able to generate social trust, while erecting barriers for a collectively reflexive process to take place on their routine issues.

## C.3. Case studies: Trust and values

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<sup>9</sup> For example, what could possibly justify the credit given to directions given by a total stranger in the street? What is one’s interest in giving such indications, and losing time in the process?

<sup>10</sup> Jean L. Cohen also claims that legalization itself, in particular the expansion of personal individual rights and entitlement claims, may indeed be one of the most important factor of the disintegration of civil society and civic capacities (Cohen, 1999).

As we have already pointed out, the main challenge with respect to plant genetic resources and biomedicine governance is to reinsert social considerations in domains mostly guided for decades by profitability and return on investments principles. Although these principles may be essential in view of the viability of any economic activity, they should also be evaluated in terms of their legitimacy regarding broader social values. But when actors started to perceive the risks of the capitalist logic, the commodification values inherent in these appropriation mechanisms have been reinforced to the point that their renegotiation has become extremely complicated. Even if the will to change things is clearly there, as is shown by the interest in open innovation and social responsibility, the strategic equilibrium in place doesn't allow sufficient flexibility for change without raising important trust issues.

Facilitating access to PGRFA has become a priority for the United Nations Food and Agriculture Organisation (FAO). In this light, FAO created various institutions to safeguard wide public access and equitable benefit sharing, i.e. an intergovernmental Commission on Genetic Resources for Food and Agriculture, the International Undertaking on Plant Genetic Resources and ITPGRFA with its associated Multilateral System of Access and Benefit-Sharing. Stakeholders to the ITPGRFA contend that one of the consequences of the conceptual shift towards commodification is the growing distrust between stakeholders (Frison, López & Esquinas-Alcázar, 2011). This distrust has also created considerable difficulties in the functioning of the coordination mechanisms set up at the international level, such as the ITPGRFA.

In the biomedical sector, we observe the last couple of years a growing number of experiments with coordinating mechanisms for the licensing of patented technologies initiated by both private and public actors. This explosion of experiments is quite fascinating as similar coordination mechanisms have existed for a long time in other sectors, such as consumer electronics and telecommunications. We will focus here on three examples that reflect the diversity of initiators and objectives: the MPP, WIPO:Research and Librassay™. UNITAID has initiated the so-called Medicines Patent Pool (MPP), which negotiates licenses with key HIV medicines patent holders making these available to generic companies and other manufacturers to produce low cost HIV treatments for use in developing countries. Recognizing the need for more progress in neglected disease research, WIPO Re:Search was formed in 2011 through the efforts of several major pharmaceutical companies, the World Intellectual Property Organization (WIPO) and BIO Ventures for Global Health. WIPO Re:Search provides access to IP for pharmaceutical compounds, technologies, know-how and data available for research and development for neglected tropical diseases, tuberculosis, and malaria. MPEG LA, a private patent pool administrator in the field of telecommunications and consumer electronics has extended its focus to the life sciences and is proposing the establishment of the Librassay™ diagnostics patent supermarket, a web-based store offering nonexclusive, nondiscriminatory access to a wide range of molecular diagnostic patent rights in support of tests for the diagnosis of disease, patient monitoring and personalized treatment.

The MPP, WIPO Re:Search and Librassay™ have been widely acknowledged as interesting experiments for their potential role in safeguarding access to essential health assets. However, they have also been criticized by others, in particular by NGOs, such as Médecins sans Frontières for not going far enough. Unfortunately, the commitment of the most important patent holders to these models has been limited. In a survey carried out amongst patent licensing experts in Europe in the life sciences, the following statement illustrates the lack of trust with respect to this type of coordination mechanisms: "no competent company would entrust [such] an 'intermediary' with key patents. Therefore the only use for such a mechanism would be to try and get value for non-core technology" (van Zimmeren, et al., 2011).

## **D. Towards experimentalist governance**

Food security, biodiversity and global health issues are quite complex particularly because there are dynamic concepts. This nature makes not only their solutions, but also their definition rather problematic. The level of complexity may be so high, that it is even difficult to simply identify the problem, which makes them “wicked problems”. Therefore, a bottom-up normative mechanism – i.e. dynamic governance logic – is essential: someone somewhere may be confronted with a particular problem before others observe that particular problem and should be enabled pull the alarm. Similarly, if someone somewhere finds a solution to a problem, others should be enabled to hear about it, experiment with it and to learn from the solution-finder. So, even if a normative idea is authoritatively determined and hierarchically institutionalized, its interpretation and application should be open to the particularities of the context. Actors should be able to elaborate the values underlying the institutions, and share experiences about successes or failures. This mechanism is the core principle of experimentalist governance.

Which lessons can we draw from our criticism on social capital and trust? In accordance with social capital theory, it is clear that the performance of any kind of institution is highly dependent on the democratic vividness of its related communities. However, gathering actors and promoting their connectedness, in order to stimulate them to cooperate in line with their private interests is insufficient. The empowerment of the stakeholders should focus on an evaluation of the evolution of their values, because it is impossible to implement a radical shift in economic behavior. Institutional trust can only be achieved through the collective experimentation of its modalities.

### **D.1. A pragmatist perspective**

Pragmatism teaches us that the accuracy and the efficiency of an idea (or a policy/economy) can only be assessed on the basis of its practical effects. Indeed, the old epistemic dichotomy between facts and values does no longer stand. One cannot expect changes in the habits of individuals without stimulating them to engage in a reflexive understanding of the proposed norm. Their contextual routines and their underlying values should be at the center of attention. Experimentalist governance focuses on enabling different groups to test the implementation of a normative idea and to share their successes and failures. We promote such a pragmatist perspective not only for reasons of flexibility and social complexity of its experimental approach, but especially in view of the trust that it conveys in the relationship between individuals and institutions. The best way to create and to sustain trust is by working from local experimentation towards global implementation. Once again, even though this last sentence may tally with the central idea of the social capital theory, the difference lies in the epistemic principles conveyed through this communitarian focus.

The rationalist paradigm seems inapt to provide an adequate understanding of social trust. The latter is understood as pure social capital or as simple socialization. Trust, far from resulting in the aggregation of individuals’ optimization calculations or in a given social attitude, constitutes both the evidence and the beginning of a reflexive process which is the basis of every social bond. Reflexivity, presented by Guido Möllering (Möllering, 2006) as the third part of the wheel of trust (with rationality and routine; suspension playing the role of realization factor) is the process that enables the creation of a bond between the individual actor and his social context. Governance ideas proposed by the social scientist Charles Sabel (Sabel, 1993) are based on a new epistemological paradigm, not built on a socio-skeptical but rather on an optimistic perspective of the actor and its reflexive building

of trust. The intrinsic limits within the strictly rational and routine aspects of trust should be understood as qualitative impoverishments of institutional and social trust, understood as many social processes of cooperation, vulnerability, respect, control, insurance, love and hatred. The concepts of trust and institution, far from the instrumentalization to which they are reduced by the capitalist theory, are the elements which must be understood for what they really are: complex social constructs that show the vividness of the social bond.

When institutions should be mainly understood as pragmatic connectors of trust, trust should be understood as directly linked with the revision of beliefs' issue. New governance projects should aim at a complete reflexivity by establishing institutions through a process that enables actors to measure the collective advantages that arise from the routine adjustment and the cognitive revision. In other words, institutional structures should provide opportunities for the stakeholders (1) to understand the institution as a collective entity with particular values; (2) to experiment with and experience various models to optimize the functioning of the collective entity, and (3) to evaluate its actions, process them, learn and adapt to the needs of the civic community.

## **D.2. Another institutionalism**

In other words, our brief analysis of the prevailing literature on the bond between trust and governance shows that most theories focus on the creation of a vulnerability in a somehow skeptic account of sociality. These studies help understanding the coercive role of institutions in maintaining an adequate exchange market along a purely liberal tradition. However, they are unable to deploy a sufficient level of reflexivity because institutions are regarded as risk attenuation artifacts of trust strictly understood as a cognitive phenomenon. We contend that trust also reveals a deeply routine aspect and a complex reflexive mechanism (Möllering, 2006) at the core of the social bond, which connects individuality to sociality through a more "optimistic" notion of the abilities to interact with the environment and to manage it (Ostrom, 1990; Sabel, 1993). A full analysis of this aspect requires a reflexive concept of trustful cooperation that will automatically address its vulnerability issue in the process, but not anymore as its central issue. This reflexive requirement is ascertained in our framework by focusing on a constant exchange of knowledge (Dorf & Sabel, 1998) as the best and simple way to both internally and externally create and nurture a climate of trust behind the normative idea of the institution (Quéré, 2009).

One essential feature of our conceptual framework is the idea that institutions must be understood as complex pragmatic connectors, i.e. a social matrix of collective actions that sustain individual commitment, and where routine and reflexivity drives trust-based coordination mechanisms in interaction with their environment. The success of the normative stabilization by the central managing authority requires its own procedures of constant external destabilization and contextual tuning in order to be able to grasp the wealth and complexity of the ecological rationalities at stake on which trust inherently relies.

The distrust at stake in the case studies is then essentially assessed as the result of a lack of openness to the programmatic skills of stakeholders and of learning experimental mechanisms during the creation and evolution of these institutions. In order to create and sustain trust, stakeholders need to be part of the institutional game from the beginning. Mechanisms of knowledge exchange, innovation and commitment to sustainability should be deployed and their functioning and normative program should be evaluated by the collective intelligence. The key issue in understanding the dynamics of an experimental network lies precisely in the perspective of the social mechanism of trust as a phenomenon

that grows and improves through its reflexive practice and decreases through its eviction to coercive measures.

### D.3. Case studies: Experimental recommendations

The case studies show understanding of the need to promote and sustain collaborative licensing models and open innovation in different areas related to our global grand challenges. Whereas this assertion seems to be shared widely, the main challenge lies in the way to implement such principles. We have explored the key issue that seems to block the effective implementation of such models: the resilience of economic beliefs behind the present strategic equilibrium. Our core proposition is to incite actors to participate in the redefinition of trustworthy, new normative contexts build around an alternative set of food security, biodiversity protection and global health values. It is essential to include all stakeholders in negotiating the concrete modalities of such context in order to sustain their commitment and avoid exit strategies. At the same time, it is essential to emphasize their inscription in a large network of such commitments, and to inform them about failed and successful mechanisms.

We will end this exploration by pointing to three lessons related to trust that can already be drawn from the ongoing experiments in plants genetic resources and biomedicine.

#### 1. *Early inclusion of All Relevant Stakeholders in the Model*

The example of the MPP clearly shows the importance of involving all relevant stakeholders in an early phase in a discussion about the set-up and functioning of a coordination mechanism. If one of the major stakeholders is left out and is only approached when the model is fully functional, there may be a perception of bias. Moreover, the role of certain key individuals within the organization and their background and expertise may reinforce this negative perception.

The MPP is an independent Swiss Foundation set up and funded (for the initial five years) by UNITAID<sup>11</sup>. The pool has a governance board, expert advisory group and an executive team. Most of the members of the governance board, advisory group and executive team are high-level health professionals with a lot of experience and expertise in health issues. The majority of these professionals previously worked either for NGOs in the area of access to medicines or for the generic industry. The first executive director of the MPP, the public face of the MPP, was Ellen 't Hoen, who until the end of 2008 was the policy and advocacy director of the Médecins sans Frontières campaign for the access to essential medicines and who spent most of her professional life as an activist for patients rights and more equitable pharmaceutical policies. Recently, Greg Perry, currently Director General of the European Generic Medicines Association, has been appointed as its new Executive Director. However, we should not forget that the main aim of the MPP is to negotiate licenses with key HIV medicines *patent holders* making these available to *generic companies* and *other manufacturers* to produce low cost HIV treatments for use in developing countries. Yet, there is no clear inclusion of representatives of the major patent owners, who are invited to collaborate with the pool, within the governance scheme of the pool. This

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<sup>11</sup> UNITAID is a rather atypical organization. Even though its name may suggest a link with the United Nations, UNITAID was launched in 2006, by Brazil, Chile, France, Norway and the United Kingdom in order to create an international drug purchase facility financed with resources that would be both sustainable and predictable. The funding is based on a tax on airline tickets, as this was regarded the most appropriate means of providing sustainable funding.

may give the impression that their values and concerns are not shared by the experts involved in the operation of the pool. This is a poor starting point if one wants to build a trust-based relationship with the key patent owners. Patent owners are unlikely to consent to giving away control to key knowledge assets, to actors that they perceive as opponents, in particular if they have never engaged in similar relationships with these actors in a prior capacity, or rather been explicitly thwarted by particular individuals. Despite the independent legal nature of the MPP and its laudable aims to operate in a transparent and accountable manner by making its statutes, by-laws, transparency policy and licenses publicly available, these attempts for good governance may not be sufficient to overcome the initial negative perception.

## *2. The Central Role of a Neutral, Expert Intermediary*

A logical follow-up to the first lesson is the nature and expertise of the coordination mechanism. Patent owners who have partnered with a certain organization in the past, or who are well aware of the expertise and skills covered by a certain organization, may be more willing to open up to such an organization. In particular, if that organization takes a neutral initial stance while strongly supporting certain shared values and objectives. This more neutral position and shared values seem to be important reasons why WIPO Re:Search and Librassay encounter less opposition from private actors than the MPP. In particular, Librassay, which is a project initiated by MPEG LA, can built on over ten years of experience in pooling patent licenses in other sectors. Despite their limited expertise in licensing in the biomedical sector, the partnering, matching and negotiating process will be similar and MPEG LA has all the necessary skills and capacity on board. Moreover, both WIPO Re:Search and Librassay initially adopted a low profile approach to sense the interest of the relevant stakeholders in the coordination mechanism. The low profile approach seems to leave more space for a gradual establishment of trust.

## *3. Transparent, Simple Governance Mechanism*

IP coordination mechanisms are meant to overcome complex problems of fragmentation of IP rights. In the biomedical sector, the models that have been proposed are international in scope, but are largely private mechanisms. In the field of plant genetic resources, the Multilateral System of Access and Benefit-Sharing is based on an international treaty and, hence, operates in a rather politicized context. Even some relatively small policy or operational changes have to be approved by the Governing Body of the ITPGRFA; the Governing Body being the highest organ of the Treaty. Composed of country representatives of all the Contracting Parties, its basic function is to promote the full implementation of the Treaty, including the provision of policy guidance on the implementation of the Treaty. It holds regular sessions at least once every two years. Decisions are generally taken by consensus unless it is decided (by consensus) to employ another method to arrive at decisions on certain measures. The politicized nature of the main decision-making body may disconnect stakeholders from the actual operation of the mechanism. Their values may not be clearly represented within the complex governance scheme due to the distance between an international treaty-based coordination mechanisms and their day-to-day life. The treaty based structure may have led to an alienation of the stakeholders leading to a disconnection and disruption of the chain of direct experimental feedback and a decline of trust.

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