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Food Safety and Social Capital: A Double Side Connection

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**Abstract** - The globalisation of the agri-food system and the growing variety of food products and technologies have made it increasingly difficult for nation-states to regulate food safety and quality practices, giving rise to a shift from public to private governance, essentially in the form of private standards and TPC. The paper suggests that the current shift from public to private intervention calls for a different approach to the analysis of food safety policy, on both descriptive and normative ground. Two different concepts of social capital, one of trust and the other of power, are used in order to assess the welfare effects of the newest trends in food safety policy. Through the lens of social capital it is clear that private standards and TPC are not merely an impartial technical tool able to foster food markets efficiency and safety. Rather they are the means by which powerful actors in the chain discipline people and things in order to accomplish their own objectives.

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## Introduction

In this paper it is contended that the current shift from public to private intervention calls for a different approach to the analysis of food safety policy, on both descriptive and normative ground. Stemming from two different concepts of social capital, one of trust and the other of power, it will be demonstrated how both are useful in assessing the welfare effects of the newest trends in food safety policy. The attention given to the dimension of social capital is but the starting point from which to apply methods and concepts of the new economic sociology to the study of the global agri-food system, in order to overcome the many shortcomings of the standard economic model.

The paper is organized as follows. In the first section the ongoing shift to private food safety intervention is described, drawing on the theoretical and empirical literature developed over the last years. In the second section two different concepts of social capital are introduced, in the way they have been drawn by the related literature: social capital as trust and social capital as network. In the third section these notions of social capital are applied to the analysis of the welfare effects of private food safety standards and third party certification (TPC). The concluding remarks summarise the main results and suggest some approaches of economic sociology that could be integrated in the research agenda of scholars engaged in the study of agri-food systems.

## 1. Food safety: the shift from public to private governance and TPC

### 1.1 *Recent trends in food safety policy and the case of the EU regulatory framework*

In Western developed countries the issue of food safety has traditionally been addressed by National Health bodies and laws. The tools widely used to protect citizens from eating unsafe foods have been: 1) the circulation of guidelines and information to improve the hygiene during the process of production-distribution and home handling of food; 2) the setting of standards limiting the content of chemical, biological and physical contamination of food; 3) a tort liability legislation and other laws able to enforce the standards. With the raising of wealthier and more conscious consumers, private firms have improved their involvement in food safety activities as well by using different tools such as certification and quality assurance programs, quality disclosures, investments in reputation. At the beginning of the 1990's two forces promoted contradictory changes in the system. The creation of the WTO as a multinational body entrusted with the task of trade liberalisation raised a request for standard harmonisation (in order to facilitate trade) and for non tariff trade barrier reductions. With outbreaks of food diseases, such as BSE, SARS and avian influenza, new safety concerns were raised by the public and a request was made for more state control and assurance. The result has been on one hand a higher effort of nation states in promoting and coordinating food safety at a national and international level, and on the other hand research into new tools of intervention (such as HACCP, traceability and certification) less rigid than the classical mandatory minimum standards, in order to achieve the double goals of reducing the disclaims of trade partners with lower levels of standards and of better dealing with new health threats associated with the growing dimension and complexity of the agri-food system.

According to the tendencies just described, the EU food safety policy is supported by the three following pillars:

- 1) The General Food Safety Law (reg. 178/2002)<sup>1</sup>, that 1) lays down the general principles and requirements of food law and procedures in matters of food safety, 2) establishes the European Food Safety Authority, and 3) instigates mandatory food traceability;

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<sup>1</sup> According to the European Communities Act 1972, the case law of the European court of Justice makes clear that it is not open to the Member States to retain provisions in national legislation in so far as they duplicate, gloss or conflict with the directly applicable provisions of EU Regulation.

2) The directives and their following updating provisions setting 1) standards for dangerous contents (additive, residues, chemical and so on), 2) labelling, and 3) Hygiene practices (HACCP);

3) The different laws that give the private certification system the ultimate state guarantee, through the accreditation of certification bodies by public institutions.

Along with this EU framework, on one hand are the national food safety systems, and on the other hand the international “regulatory guidelines” set forth by the WTO and other international bodies.

National food safety systems differ from one another or because of differences in the national laws implementing the EU directives, or because of the different enforcement tools offered by the individual nation legal systems<sup>2</sup>. Furthermore, even inside a single state there can be differences among regions due to the ongoing processes of devolution partially related to budgetary state constraints.

The WTO addresses the food safety issue mainly with the Sanitary and Phytosanitary (SPS) Agreement and the Technical Barriers to Trade (TBC) Agreement. The SPS Agreement, while stating the rights of individual states to carry out any measure deemed necessary to achieve health and food safety goals, spells out the condition under which SPS issues could be used to limit trade in a given food product. Notable is the appeal to science in making such determinations and the stress on international standards setting bodies, such as the Codex Alimentarius, thereby giving such previously voluntary organizations de facto mandatory status. The TBC Agreement limits food safety interventions to those that are deemed not to be used to block trade. In order to assess the “necessity” (instead of a technical barrier use) of an intervention much attention is given to processes of Risk Analysis (based on strict science-based procedures) aimed at defining the Appropriate Level of Protection (ALOP)<sup>3</sup> consistent with a fair trade practice.

The FAO and the WHO are mainly concerned with the difficulties the less developed countries face when trying either to lower the domestic food risk, or to update their goods to the safety standards of importer countries. The FAO is currently engaged in projects aimed at improving agricultural extension and training in order to help farmers cope with the changing contractual arrangements set out by importers (FAO, 2005a, 2005b). The WHO has recently recognised food safety as a public health problem and has designed its role in food safety as “to reduce the burden of food borne illness by advising and assisting Member States how to reduce exposure to unacceptable levels of chemicals or microorganisms in food” (WHO, 2002, p. 10). According to this mandate seven approaches are referred to within the WHO global strategy for food safety (WHO, 2002): strengthening surveillance systems of food borne disease; improving risk assessment; developing methods for assessing the safety of new technologies; enhancing the scientific and public health role of WHO in Codex Commission; enhancing risk communication and advocacy; improving international and national cooperation; strengthening capacity building in developing countries.

Figure 1 summarises the different levels of food safety regulation in the EU and the role of international bodies and agencies.

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<sup>2</sup> It is worth noticing that in both case of regulation and directives the Commission gives the Members the mandate to implement enforcement powers and penalties in relation to the accomplishment to the EU-level stated food safety obligations. As an example, the article 17 of the reg 178/2002 on the allocation of liability, while defining responsibility of food business operators, does not have the effect of introducing a Community regime regulating the allocation of liability among the different links of the food chain. This because it is recognized that determining the facts and circumstances which may render an operator liable is a matter which strictly depends on the structure of different national legal systems.

<sup>3</sup> An ALOP, as defined by (in?) SPS agreement is the level of protection deemed appropriate by a country establishing a sanitary or phytosanitary measure to protect human, animal or plant life, as defined by Sor health within a territory.

## 1.2 *Private Initiatives and Third-party Certification (TPC)*

Food safety tools (see table 2) can be broadly divided into two groups: 1) public and mandatory, legally enforced<sup>4</sup>; 2) private and voluntary, either legally or informally enforced (see figure 2). The most widely used tools in the first group are: minimum standards, such as those referring to pesticide residues, additives, chemical and microbiological contaminants; mandatory HACCP; tort liability; mandatory traceability; labelling. In the second group there are: voluntary certification with a third-party certification, using legally enforced formal contracts; voluntary certification without a third-party certification, using quasi-formal and informal contracts; voluntary HACCP, traceability and standard, using formal and informal contracts; reputation, using informal implicit contracts.

During the last decade the use of these different tools has dramatically changed in strength and scope. The WTO growing power and the ongoing process of deregulation and devolution of the state has pushed towards the withdrawal of the State from standard setting and auditing intervention. Meanwhile, the higher environmental, health and social risks associated with the geographic spread of food markets and new technologies, have caused an increase of New Social Movements asking for greater food chain control and guarantee (USAID, 2005). As a result there has been a shift from public to private food safety intervention, and among these latter from first-party certification to third party certification. The ultimate leading part of this process has been the retail sector. The construction of private standard<sup>5</sup> offers supermarkets at least three opportunities: 1) to achieve competitive advantages through a non-price competition based on product differentiation and reputation enhancement; 2) to reduce transaction costs by facilitating procurement activities, especially when carried out in a context of global sourcing; 3) to pre-empt state and other actor interventions that might be dysfunctional to their own internal resources and organisation. Examining the main economic and institutional incentives which have driven major OECD food retailers in their use of private voluntary standards, Fulponi (2006, p 6) finds that the primary driver seems to be reputation. "Providing consumers with products that meet consistent quality and safety standards that go beyond the minimum requirement is seen as essential to building reputation, the key asset for current and earnings flows" (Fulponi, 2006,p.6). Henson and Reardon (2005) consider the following three incentives to private standards: substituting for missing public institutions; facilitating product differentiation; reducing costs and risks in the supply chain.

Currently a vast array of certifications operate in the food chain all over the world, covering just about every aspect of food production, processing, transportation and retailing.

The recent USAID report (2005, pp.15-33) identifies a list of 17 types of certifications, including also some quasi-mandatory certification where the state acts as third-party certifier: strict food safety certifications, HACCP; ISO 9000 and ISO 14000; traceability; region of origin labelling; organic certification; export certifications; fair trade; labour certifications; ethical trade initiative; EUREP; environmental certifications; phytosanitary certifications, corporate social responsibility; animal welfare, and non-GM certification.

As already mentioned not only has there been a shift from public to private standards, but, among these latter, there has been a shift from first (i.e. audited by suppliers) and second (i.e. audited by retailers' paid technicians) party to TPC (i.e. audited by a third party that is deemed to be independent from other actors in agrifood chains). With respect to first and second party, TPC has two important advantages for retailers (Hatanaka et al., 2005). First, retailer organisational responsibility and liability is transferred to third-party certifiers, with TPC strengthening a possible "due diligence" defence. In UK for example the due diligence defence introduced by the Food

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<sup>4</sup> In legally-enforced regulations and formal contracts allocation of liability and penalties are defined and enforced through the legal system; incomplete formal contracts and informal contracts are not legally-enforced, instead they use other forms of enforcement, such as trust, power, and self-enforcing agreement arrangements.

<sup>5</sup> Built on state standard, defined by a single firm or by an industry group or by a third-party( USAID; p.8 final report).

Safety Act 1990 in lieu of the so-called “warranty defense”<sup>6</sup> has been quoted (Hobbs et al., 2002) as an important driver in the wide use of TPC by retailers. Second, the cost of monitoring and assuring food safety and quality is passed to suppliers, while benefits to reputation remaining mainly with retailers.

Currently large retailers in developed countries have their own agrifood standards. As processes of globalization and concentration at retail level accelerate, inter-retailers collaboration grows, with different chains establishing common standards (such as EUREPGAP, CIES’s Global Food Safety Initiative, British Retail Consortium) and using TPC companies that operate globally (such as Primus lab, Cert ID, Davis Fresh Technologies). Moreover retailers are increasing their collaboration with a wide range of public and private initiatives and with NGOs involved in food programs (Bush, Thiagarajan., Bain, 2005). The result is a new food safety network with central nodes being made of huge retailers and TPC companies, secondary node made of NGOs, civil consortium, extension agencies and local governmental agencies, and with suppliers all over the world insulated in peripheral positions.

While benefits and opportunities of private standard and TPC are well expressed by the above mentioned incentives that moved retailers towards these policies, costs and threats have not been clearly assessed yet. Current literature highlights at least five concerns (listed below) constituting the down side of the TPC “affair”.

#### 1. Costs bearing and sharing.

With the exception of fair trade certification, which is generally paid by the buyer or exporter, costs of certification are borne by producers<sup>7</sup>. Small farms that cannot afford the costs exit the market (Henson et al., 2005). In developing countries, smallholders without title to land (women are often in that condition) incur difficulties also in carrying out the specific investments needed for certification. Put simply, “standards demanded by supermarkets are a powerful driver of concentration, and the corresponding exclusion of small farmers” (Balsevich et al, 2003). Furthermore, certification and associated costs seem to be not compensated for in price premiums received for the product, through better management of the farm or firm, or through increased sales, with the exclusion of fair trade standard (Giovannucci, Ponte, 2005).

#### 2. Democratic governance.

Private standards and TPC might be intrinsically deemed to be non-democratic mainly because of three features. First, the emergence of a standard comes from the decision of a single company or NGO, without any formal statutory consulting with those affected by the decision. Also the threshold of the standard is an arbitrary choice. While standard-makers justify their choices as science-based, one must recognize that “science alone is incapable of telling us what risks are worth taking” (Bush et al. 2005, p. 39). Such a decision implies judge of value and should rely on political debates and accepted wisdom. Second, the use of private standards does exacerbate power imbalance within the food chain, with retailers gaining more advantages with respect to producers (Hatanaka et al., 2005).

#### 3. Less Developed Countries (LDCs) upgrading.

The raising of private standards and TPC offers challenges and opportunities for development (Reardon, Berdegue, 2002). While some studies (Fulponi, 2006) suggest that in order to comply with standards for export product LDCs accelerate processes of agricultural innovation and domestic food safety improvement, others suggest that the effort to raise performance for export

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<sup>6</sup> While the warranty defence only requires that buyers prove the food was not compromised while under their control, the due diligence requires that they take all “reasonable steps” to ensure the food they receive from upstream suppliers is safe.

<sup>7</sup> Costs vary significantly, depending on particular countries, standards and products (Bush et al., 2005).

markets negatively affects quality and safety of locally sold products, with low quality-low cost farmers becoming “segregated” in the domestic market (Hatanaka et al., 2005).

#### 4. Efficacy and Reliability of Certification systems.

In TPC schemas agency auditing compliance with standards must be accredited by a TPC accreditor, that in turn must be “certified” by a Certification Body (CB). CBs must themselves undergo audits to ensure that they have systems and process in place to be a CB. CBs come in many shapes and forms; they may be private or public, a non-governmental organization or a commercial firm. “CBs and TBC accreditors tend to engage in a complex surveillance system, auditing and accrediting one another in multiple tiers to various standards. ISO/IEC Guides tend to be used as guidelines by CBs and TBC accreditors in auditing and accrediting themselves” (Bush et al., 2005b, p. 8). Each nation has its own ISO accreditation organization (ANAB-US, UKAS-UK, JAB-Japan, SANAS-South Africa, CNAB-China, and so on). While CBs generally claim their independence and that their services are objective, consistent, transparent and effective, three evidences contrast these claims (Bush et al., 2005a, p.33): 1) The CBs are themselves in the marketplace, the certification market. 2) Many certifications are likely to remain limited to credence attributes (pesticide residues, organic production practices, fair trade, social accountability) because for these attributes no failure to perform adequate certification is ever likely to become directly evident to either buyers or consumers. 3) Since certification does not necessarily mean that best practices are being followed but it simply means that a paper trail has been produced, fraud is possible as in any other industry.

#### 5. Compliance with WTO agreements.

Since they are voluntary, certification schemes are outside the control of the WTO. Nevertheless, when supported by the leading global actors in the supply chain, they become in effect mandatory and can give rise to litigation with respect to the terms of the TBT agreement, by arguing that “at some level all standards are technical barriers to trade” (Bush et al., 2005, p. 35).

## **2. Social capital: concepts and definitions.**

### *2.1 trust and networks*

In the introduction to one of the latest books by Putnam, one of the most prominent scholars in this subject, social capital is defined as “social networks and the associated norms of reciprocity” (Putnam, Gross, 2002, p.8). The idea underlining this definition, from which all the literature on social capital stems, is that “dense networks of social interaction appear to foster sturdy norms of generalized reciprocity....., in other terms social interaction helps to resolve dilemmas of collective action, encouraging people to act in a trustworthy way when they might not otherwise do so.” (Putnam, Gross, 2002, p.7).

Although the term social capital is quite often related to both the concept of trust-based social norms and of networks, a distinction can be made between two strands of literature depending on which concept is considered as prevalent (see figure 3).

The first strand is related to the works of Putnam (1993) and Fukuyama (1995) regarding the role of social capital in improving democracy and economic development. These authors basically view social capital as a kind of impersonal and generalised trust. Impersonal is different from interpersonal trust. Impersonal trust is at least an individual’s optimistic expectation about the outcome of an event and it explains social structure, it can be considered as “a set of social expectations shared by everyone involved in an economic exchange” (Zucker, 1986). Interpersonal trust occurs in contexts of relationship settings where two actors are involved in an exchange and is defined as “the extent to which a person is confident in, and willing to act on the basis of, the words, actions, and decisions of another” (McAllister, 1995). Impersonal trust is social and

normative, while interpersonal trust is essentially individual and calculative. Following the definitions of Gintis (Gintis, 2000), impersonal trust is consistent with a definition of social actor as homo reiprocans and/or equalis, while interpersonal trust well fits the classic definition of homo economicus. Impersonal trust does not exist without the existence of prior social relationships which are able to drive social actors towards cooperative behavioural patterns. Impersonal trust reinforces social relationships, building up, along with other kinds of social norms, those social networks constituting the structure of civil society. As impersonal trust, social capital fosters democracy and economic development by facilitating social and economic exchanges (reducing monitoring and sanctioning cost) and allowing dilemmas of collective action to be resolved (limiting free-riding and offering cooperative-based solutions to collective action problems). According to this definition, social capital is measured mainly through the dimensions of associability, trust and attention (Offe, Fuchs, 2002). Indirectly related to this strand of literature on social capital are economic theories (Bowles, 2004; Fher, Gachter, 2000; Fher Schmidt, 2001) that stress the role of reciprocal behaviour, social preferences and social norms in resolving organisational problems associated with contract incompleteness and in explaining experimental results of bargaining games.

The second strand of literature is related to works by Burt and Lin (Burt, 1992, 2005; Lin, 2001) on social structure. Here social capital is defined as “resources embedded in a social structure that are accessed and/or mobilized in purposive actions” (Lin, 2001, p.29), where the social structure refers to relationships (that are the frame of a network) among social actors. Accordingly, networks are themselves considered as a form of social capital. Linkages with other actors constitute the network of an actor, i.e. her social capital, whose value depends on (Burt, 1992, p.12): 1- the structure of the networks, 2- the resources contacts hold (whom the actor reaches), and 3- the nature of relationships (how the actor reaches). Following this definition, social capital is not necessarily associated with cooperative behavior and high level of trust, but rather it nourishes competitive behavior based on the exploitation of information and control opportunities offered to an actor by her endowment of social capital. Related to this strand of literature is the theory of social exchange, and mainly the power-dependence theory in both its strictly-structural (Cook, Emerson, 1978) and structural-strategic (Molm, 1997) version.

Over the last twenty years, economic theories have applied the concept of social capital to different issues.

Neo-institutional theories have looked at the trust perspective when studying trust and social norms as alternative exchange organizational forms with respect to markets, contracts and hierarchies. In a sense trust completes the theory of transaction cost allowing for another aspect of human behaviour (attitude toward cooperation or trusting behaviour) that gives rise to control structures (informal relationships, such as “handshakes”) that are alternatives to the contractual line which defines the continuum between markets and hierarchies. From this point of view social capital (as trust) is deemed to be welfare enhancing, by lowering transaction costs and correcting market failures due to asymmetric information, uncertainty and public goods.

Development economists have considered both the trust and the network feature of social capital and have found sound evidence that a positive relation exists between social capital endowment (measured through associability and attitudes towards trust and reciprocity<sup>8</sup>) and the level of social and economic development. Nevertheless the related literature also distinguishes between forms of social capital enhancing welfare and equity and forms that are detrimental to democracy and development. As an example a distinction is made between inward-looking versus outward-looking social capital and between bridging versus bonding social capital (Putnam, Gross, 2002). Inward looking forms of social capital (such as gentlemen’s club or chambers of commerce) tend to promote the material, social and political interests of their own members, even at the expense of outsiders, while outward looking forms (such as civil rights movements) are mainly concerned with

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<sup>8</sup> For an overview of methods of social capital measurement see the World Bank guidelines (Grootaeri et al., 2004).



the public interest and provide clear public as well as personal benefits. Bonding social capital brings together people who are like one another in important respect (social class, gender, race) and can be conducive of conflicts and inequalities. Bridging social capital, on the other hand, brings together people who are unlike one another and is more likely to promote cooperation and equality.

Management and industrial organisation theories have mainly looked at the network perspective, considering social capital as a source of competitive advantage<sup>9</sup>. Scholars of business and management are generally enthusiastic about the benefits of networks, such as: facilitating communication and allowing for flexible organisational arrangements, fostering the ability to seize new market opportunities, and creating a more innovation-oriented business atmosphere. Despite these claims, it would be hazardous to consider networks as always enhancing economic welfare. In fact, it is not the total amount of connections that matters, but the kind of connection and the particular shape of the network structure that it generates. There really exists a flip side of the coin, a kind of dark side of social capital that can hamper, instead of improve, economic welfare in respect of both efficiency and equity concerns.

### *2.2 The dark side of networks: the structural holes argument.*

The relation between social capital in the form of network and firm strategies in the competitive arena has been addressed by the seminal work of Burt (Burt, 1992) by means of the structural holes argument and recently revitalised by the same author (Burt, 2005) at the light of new network theories.

At the core of Burt's theory is the claim that "competition works when players have established relations with others" (Burt, 1992, p.1), i.e. when the competitive arena is investigated as a network whose nodes are the players in the competition game. Network structure is responsible for differences in competitive advantage among the players, with structural holes, defined as disconnections or nonequivalencies between players, being the core structural element. "Variable exposure to structural holes is the foundation for network models of social capital and a fulcrum for comparing models" (Burt, 2005, è. 16). Asymmetry in the social capital endowment by actors and the structurally induced consequences of this asymmetry on their market opportunities, (also in the form of exercising market and bargaining power), is the very cause of high performance associated with structural holes.

Besides being provided with a network rich in structural holes an actor (individual or organisation) can strengthen her social capital by brokerage, ie. by bridging the holes. When an actor (a broker) provides bridges across structural holes (for instance a manager who creates interdivisional links in a large organisation), combining information from disparate groups that would not otherwise communicate, she relocates herself in a better position. Returns to brokerage are constrained by the maintenance of a certain degree of network closure, i.e. the strength and exclusivity of relationships within groups. Brokerage together with closure make the network assume the typical small world structure, that is: a bundle of dense clusters (characterised by closure, i.e. by strong ties among actors, generally supported by self-enforcing relationships such as trust, reputation and social norms) separated by structural holes, and weak ties (the bridges provided by brokers) linking structural holes<sup>10</sup>. In such a small world structure brokers are the more powerful actors, with more chances to seize opportunities and a higher bargaining power to spend within relationships with other actors. Information advantages and the various exchange opportunities (and consequently the low exchange dependence) are the main sources of gains from brokerage.

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<sup>9</sup> Management and industrial organization theories have looked also at trust, as a lubricant of inter and intra firm relationships, but actually having in mind a form of interpersonal more than impersonal trust. As a matter of fact, when informal relationships, such as "handshakes" emerge, that is the consequence of interpersonal relationship based on collusive behaviour and/or power-dependence constraints.

<sup>10</sup> More generally, networks with an architecture characterized by a certain number of actors located in bridging nodes across structural holes exhibit a small world structure

While Burt, as a business scholar and a management instructor, highlights the positive effects on firms profits of such an endowment of social capital. (depicted as a network rich with structural holes and brokerage opportunities), different benefits assessments can be made when looking at the issue from the point of view of *total welfare effects*. Because firms competitive advantages stem from market imperfection due to incomplete and asymmetric information, and because some form of market power is exercised, conditions of pareto optimality are not fulfilled and efficiency is not guaranteed. Moreover because some form of bargaining power is exercised, there are equity concerns as well. Put simply, the dark side of social capital is associated here with market failures and inequalities stemming from market imperfection, information asymmetry and incompleteness, opportunistic behaviours, and imbalance of power.

### **3. Assessing welfare effects of private governance: the role of social capital**

Private standards and TPC augment the total amount of social capital in the food system, considering both trust and network dimension.

Trust increases either because of the higher transparency associated with standards, or because of consumers' greater confidence towards third instead of first and second party certification.

Networks grow due to the new procurement systems, and to the civil society involvement associated with the process of standard setting. The new procurement system is characterized by a centralized supply system that relies on specialised/dedicated wholesalers and preferred suppliers operating under de facto contracts. Such a system substitutes the previous decentralized one, relying on traditional wholesalers and spot markets (Henson, Reardon, 2005), and making use of short-period weak contracts. The result is a higher degree of connection with more formal relationships among actors in the food chain. The civil society involvement is explained by the fact that social movements (in the forms of NGOs and consumer activists) have played an important role in influencing both the adoption and the content of TPC, and have been, as already mentioned, one of the driving forces in the new food safety policy trends.

Taking for granted that the total amount of social capital is positively related to economic and social development, private standards and TPC seem able to foster a safer and more efficient global food system. Nevertheless using more carefully the different categories of social capital introduced in the previous section, their welfare effects are more dubious and contradictory.

#### *3.1 How much trust*

Regarding trust, at least two contradictory effects of TPC can be accounted for: 1) the erosion of trust as an effective corrective tool of contract incompleteness; 2) the excess of consumer trust and the social misunderstanding of actual health risk, especially with regard to processes of risk assessment of new technologies.

##### 1) Contract incompleteness and trust

Many food quality and safety attributes are experience and credence attributes, for which some form of guarantee is required by the buyer. When monitoring costs are low<sup>11</sup> and the external legal system is effective, formal guarantee contracts are viable. When monitoring costs are excessive and/or the external legal system is ineffective, informal contract based on reputation or trust are needed. The role of trust as a corrective tool of contract incompleteness has been widely described by organizational literature, mainly from an institutional perspective. In a wide sense, trust shifts the organizational analysis from contracts (as elementary analysis units) to a multidimensional spectrum of possible quasi-formal trading relationships of the kind of obligation contractual relations. Obligatory contractual relationships are strongly embedded in social relations between

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<sup>11</sup> Credence attribute are defined as those attributes that cannot be checked either before either after the contract execution. Here it is assumed that they can somehow checked after the exchange, but at high costs.

trading partners and are characterized by a sense of mutual trust (Schary and Skjott-Larsen, 2001, p183). These kind of relations, and the related relational marketing strategies, are the ones that assured retailers' quality and safety standards before the spreading of TPC.

During the nineties, in order to face consumers concerns about food quality and safety, manufacturers and retailers have engaged in quality programs based on private standard with first and second-party certification and on internal quality systems. The effectiveness of such a policy relied strongly on the edification of local networks of suppliers linked to the buyer through direct contacts and acquaintance, with buyer-seller relationships built around a high level of impersonal trust, in the form of value sharing and attitudes towards reciprocity. The high level of commitment, stemmed from "ethical" more than legal constraints, typical of this kind of relationship was able to assure the compliance with standards also in situations of contract incompleteness associated with credence attributes and low formal enforcement mechanisms.

At the dawn of the new century, private safety and quality polices changed as the result of the new established procurement system organization, linked to the process of consolidation of retailers and the entailed enlargement of their market geographical scope. This new system shows up two main features: 1) the geographical spread of suppliers; 2) the shift from fragmented, decentralised procurement to centralised supply systems, and from reliance on traditional wholesalers to specialised/dedicated wholesalers and preferred suppliers operating under de facto contracts. Along with this new procurement system TPC has emerged as the most preferred means to support food quality and safety standards.

The shift from the previous more socially embedded procurement system and from first and second party certification to the new globally dispersed (but more centrally controlled by a sort of "super-middlemen") system where activities are placed in the hands of outsourced key intermediaries by powerful end-users (Hingley,2005), and the advent of TPC, has dramatically changed the level and the kind of trust in the process. Pheraps in some ways, total trust diminished because of the less direct and close links in the supply chain. Furthermore, the impersonal trust (and thus the social capital endowment) that nourished transparency and loyalty in local buyer-supplier relationships was substituted by the somehow naïve trust towards privileged actors, such as CBs as "super middlemen".

The effect of these changes can be quite negative. First the erosion of social capital is always detrimental to social and economic development. Second as a corrective tool of the market failures associated with credence goods, trust as an informal contract of guarantee is more effective than the formal contracts of guarantee on which TPC is based. The point here is that TPC does not actually solve the credence goods problems, but simply transforms credence into search goods. Such a "miracle" is possible due to consumer benevolence and trust towards the CBs. As long as this trust is not well placed in, TPC is no longer effective in reducing health risks associated with food credence attributes. Since, as previously argued, many doubts can be raised regarding the reliability of certification systems, the erosion of social capital in favour of a this sort of "blind" trust is all but a good new with regard to the effectiveness (and social welfare effects) of the new trends in food safety policy.

## 2) The excess of trust and effective risk control

The current oligopolistic structure of the retail food industry, with progressively fewer international companies dominating the market (for example, Wal-Mart, Carrefour, Royal Ahold, Tesco), is pushing retailers towards differentiation strategies, beyond the crude price competition performed so far. Concerns for reputation and customers loyalty are today overwhelming the "cost-saving obsession" of the eighties and the early nineties. New strategies include: market segmentation, addition of new products and services, private labels, store format innovation. Private standards and TPC are a central element of this investment effort in brand equity and reputation. Standards with social interest,- such as safety, fair trade, labour and corporate social responsibility standards-, are particularly aimed at this end.

The argument proposed here is that Standard and TPC can contribute to build a consumer trust that is excessive with respect to that needed for an optimal social and economic outcome.

Literature on the welfare effect of firms' advertising bill has stressed either positive effects, associated with quality improvement, or negative effects, associated with possible excesses of market power and unfair behaviour patterns towards consumers. The same considerations hold in the case of the more general investments in trust and reputation. If trust building policies are based on effective and loyal behaviour, (more accuracy in testing new products, more ethics in management's choices, more transparency in information diffusion), trust investments are likely to improve welfare. In contrast, if trust building policies are based on unfair practices, such as hiding firm's private information on the level of risk or not carrying out effective measures of prevention, trust investment can lower social welfare. Thus when consumer trust is excessive with respect to the actual reliability of the trustee actors (retailers and CBs in the case of private standards and TPC), a negative welfare outcome is expected.

Trust can be excessive also with respect to the level of alert and involvement that the civil society must keep in order to correct market failures due to asymmetric information and public goods. Private economic incentives are not sufficient to assure the optimal supply of public goods. The intervention of society, through different form of governance, or the intervention of the state are then required. An excessive trust in private sector, and especially that kind of trust that makes consumers (and more generally citizens) believe in somehow an altruistic behavior of firms and in their real interest in public interest (is just the trust fostered by social responsibility and sustainable standards), reduces the incentive for such corrective intervention and leads to non-optimal market equilibria.

Excessive trust can be very dangerous in the case of risk control of new technologies. The withdrawal of state and civil society leaves the entire onerous of risk assessment and management to the private sector. Since private firms assess risk on the ground of pure private economic goals, they do not take into account more general social goals, based on ethical and political besides economic considerations. Moreover private firms tend to over value reputational and legal risks, and to under evaluate actual health and environmental risks, especially when these latter affect people in future times and/or at a geographical distance (that is the problem of the choice of the discount rate that should reflect preferences of the future generations instead of the present ones, and the problem of the environmental costs paid by poor countries for the high level of consumptions of affluent societies).

Nanotechnologies make up the new technological wave (after the much less revolutionary information and genetic engineering technologies) that is going to flood the food (as any other sector in the economy) sector. Notwithstanding the many economic, environmental, health and socio-political risks of these technologies (Greenpeace, 2002; ETC group, 2004), regulations are non-existent and discussion of nanotech's societal impact is barely a whisper. Private and public sectors in developed countries are making huge investments in these technologies (with about \$10 billion spent on nanotech R&D in 2004 worldwide) and nanotechnology products are coming to market at a steady pace. An estimated 475 products containing invisible, unregulated and unlabeled nano-scale particles are already commercially available (including food products, pesticides, cosmetics, sunscreens and more) and thousands more are in the pipeline (ETC group, 2005). Here really there is a case where the excess of trust in food companies (leading consumers to ingenuously accept any new "miraculous and exciting" product released by the more known and trustee brands, such as Nestlé, Kraft, Budwiser and so on<sup>12</sup>) along with a lack of social capital (allowing the civil society to consciously chose the level of risk-bearing) can lead to a "mad" and "out of control" use

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<sup>12</sup> Kraft's nanotech consortium scientists are developing nanocapsules whose walls burst at different microwaves frequencies so the consumer can switch on new tastes and colours. L'Oréal and Nestlé (Nestlé holds a 49% stake in L'Oréal) recently formed laboratories Innéov, a 50/50 joint venture to develop new nanotech "cosmetic nutritional supplement". Mars, using the issued US patent 5,741,505 of 1998, currently coats M&Ms, Twix and Skittles brand candies with an inorganic nano-film that increases the product shelf life (ETC Group, 2004).

of new technologies. The recommendations made by the ETC Group to civil society and governments in order to comply with the risks of these new technologies well reassume this point: “It is urgent that civil society work together to encourage the widest possible public discussion of the new nano-scale technologies..... and national governments should establish a *sui generis* regulatory regime specifically designed to address the unique health and environmental issues associated with nano-scale materials used in food and agriculture.” (ETC Group, 2004, p.54).

Concluding, trust seems to be a key factor in the spreading process of new technologies. For potentially risky products, such as GM and nanotech products, an excess of firm investment in consumer trust can lead to socially negative effects if firms act in a totally selfish way (i.e. when there is a lack of ethics). While trust development seems to be a successful firm’s competitive weapon (more trust, more profits), it is not sure that more trust entails higher social welfare. To make trust “good in any case” two assumptions must hold: firms’ trust building policies must involve ethics besides its profit maximisation task; the society where markets are embedded must be so rich in social capital as to take part in process of risk analysis and regulation setting.

### 3.2 What kind of networks?

As previously noticed a result of the new procurement system (a pillar of which are private standards and TPC) is a network with central nodes being made of huge retailers and TPC companies, secondary node made of NGOs, civil consortium, extension agencies and local governmental agencies, and with suppliers all over the world insulated at peripheral positions.

While the higher interconnection among different actors worldwide could be interpreted as a social capital, and thereby a social welfare, improvement, this particular network structure suggests less favorable social welfare effects. As a matter of fact it actually looks like the kind of small network structure identified by Burt as a successful basis for the exploitation of market opportunities by actors located in advantageous positions. In other words it is a sound source of power asymmetry and market imperfection in the system.

With respect to products sensible to health risk, in the new procurement system retailers are linked to suppliers through the informative and quality control intermediation of third party certifiers, and are requested no longer to build trustful close relations with loyal suppliers. Nevertheless, they can control more strictly the suppliers by dictating standards and terms of exchange in a situation where the shift of the burden of specific investments and assurance costs to the sole suppliers makes these latter far more locked-in and bargaining powerless in the relationship. Certifiers, on their hands are important nodes linking a multitude of suppliers to several buyers. Suppliers are pushed towards disadvantageous periphery positions, losing their direct links with their final customers and obliged to face horizontal competition with other suppliers dispersed throughout the world, and with a less capability of exercising some form of countervailing power. Among the very connected actors are CBs at the top of the certification system, that are indirectly linked to a huge bundle of suppliers and buyers (and also to NGOs and other civil networks when these latter are involved in the process of standard setting) through the many certifiers they accredit. The most connected actors are those big retailers joined in project, like EUREPGAP, aimed at setting standards shared by a wide group of buyers and suppliers. In this case, the direct links among joined retailers and between these and certification agencies and the “super middlemen” managing relationships with the individual suppliers, make a sort of interlocking directorate, with all the related possible collusive and anticompetitive effects. In other words TPC and the new procurement system give retailers the opportunity to exploit two sources of social capital: the social cohesiveness of these new networks (like EUREPGAP) leading the chain, and the structural holes associated with the insulation of individual suppliers at the periphery of the whole supply chain network architecture. These facilitate “union” (i.e. a strategy that creates value by bringing alters together, closing the holes between them) and “disunion” (i.e. a strategy that

exploits the structural holes between alters by keeping them apart) strategies<sup>13</sup> (Baker, Obstfeld, 1999) and will further consolidate the dominant position of big retailers within the food chain.

As big retailers become central nodes in the network and the total number of links increases, the network structure shifts from the small world type to the scale free type, i.e. networks with power-law degree distribution. In contrast to small world networks, the scale-free ones display nodes with significantly more links than average. These nodes with an extraordinarily large number of links are referred to as hubs. Actors in hub position control most opportunities and are the ones able to exploit different sources of power. In economic exchange networks a scale-free structure predicts power (Sodano, 2006) whether because hub actors (firms) have a negotiating power higher than that of their attached nodes where customers and suppliers are located (according to the prediction of power-dependence theory), or because they have access to more sources of competitive advantages (according to the prediction of structural holes theory). Moreover, in the measure to which hub actors can forbid the attachment of given nodes, a strategic use of power can also be assumed.

Concluding, the new networks shaped up by the new procurement strategies are such as to raise the degree of power imbalance in supplier-retail relationships (and also to waste trust, as a consequence of the overcoming of the marketing relationship model of supply chain management<sup>14</sup>.) Notwithstanding the possible benefits stemming from a retailer controlled supply chain and the “natural” tendency towards asymmetry in B2B relationships (Hingley, 2005), the excess of power in the chain can hamper the efficiency and the stability of the system, besides the generally accounted for negative equity effects. Power can show up as market power and then all the inefficiencies of market imperfections occur. An excessive imbalance of bargaining power can affect efficiency besides equity when the Nash bargaining solution assumption of maximisation of joint profit does not hold. When power is used as corrective of contract incompleteness instead of trust, the total exchange surplus can be lower as well (Sodano, 2006). When power is fed up by information asymmetry the lack of transparency reduces the total system performance (Hofstede, 2005). Too much inefficiency reduces the total surplus in the system, lowering profitability and hindering investment capacities, with negative effects on innovation and reaction capability to external shocks. The loss of trust and cooperation produced by an excess of power limits the total capability of the system to cope with the complexity of the external economic, technological, institutional and socio-cultural environment. A suboptimal supply of food safety and the inability to face unexpected food outbreaks can also be consequences of power excess.

## Concluding remarks

The globalisation of the agri-food system and the growing variety of food products and technologies have made it increasingly difficult for nation-states to regulate food safety and quality practices, giving rise to a shift from public to private governance, essentially in the form of private standards and TPC. Standards are a form of regulation. They enable a higher degree of global order and facilitate coordination and cooperation on a global scale, creating similarities and homogeneity even among peoples and organisations that are quite different. Nevertheless when the process of standards setting and enforcement is not under the control of public democratic bodies, the enhancing welfare effects of standards cannot be taken any longer for granted. The extant literature agrees on some -at least potentially- negative effects of private standards and TPC, such as:

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<sup>13</sup> Baker and Obstfeld (1999) suggest that the institutional context that assures the higher social capital access is the one characterized on one hand by small, dense and integrated networks -where behaviours are based on cooperation, trust and collectivism – and on the other hand by large, sparse, disconnected networks –where behaviours are based on competition, opportunism and individualism-.

<sup>14</sup> As food safety and quality attributes responsible for the exchange complexity are simply codified and enforced through standards and TPC, the global value chain governance, using the terminology and the analytical framework suggested by Gereffi (2003), shifts from the relational type to the captive type, where both the power asymmetry and the explicit coordination by the leading party are higher.

exclusion of small producers from the global supply chain; the lack of transparency and democracy in food safety goals setting; the possible lack of reliability of certification bodies; the rise of power imbalance in the system; the negative effects on the upgrading of LDCs; and so on. The most agreed judgement on private standards is that they are a driver of concentration and that, along with the new global “buyer-driven” procurement strategies, they are supporting the emergence of transnational supermarkets chains (TSCs) as the most powerful actors in the global agri-food system. The development of private standards for safety, quality, and the environment seems largely to be the outcome of supermarkets profit maximisation strategies and concerns over liability. “Consequently, because corporate success is not based on a firm’s contribution to the public good, it is just likely that there will be a disjuncture, and not a congruence, between the public and the private sphere.” (Konefal et al., 2005, p. 298).

When carrying out the analysis of private regulatory trend through the conceptual category of social capital the various concerns about its welfare effects are confirmed. First, private standards and TPC are weaker tools, with respect to trust, for correcting contract incompleteness stemming from credence-type food safety attributes. Second, the excess of trust of consumers in retailers and CBs can bias risk analysis processes, leading to a suboptimal (with respect to the actual social preferences) risk assessment and to ineffective risk management policies. Third, the kind of network structure emerging as consequence of the new global food chain organization is such as to support a growing power imbalance in the system, with the associated negative equity and efficiency outcomes. Fourth, social movements and non governmental organisation could have an important role in mitigating the social negative effects of food safety private regulations; nevertheless their strength seems to be jeopardized instead of being promoted by the particular kind of social and economic networks produced by the privatisation process.

Through the lens of social capital it is clear that private standards and TPC are not merely an impartial technical tool able to foster food markets efficiency and safety. Rather they are the means by which powerful actors in the chain discipline people and things in order to accomplish their own objectives.

Economic sociologists have widely analysed the meaning of the embeddedness of markets in the social texture, showing how the different forms of regulations that “stabilise” the exchange game come from the delicate equilibrium between economic, political and social behavioural patterns. Safety standards are a kind of rules of exchange. These latter, together with property rights, governance structures, and conceptions of control form those four rules (i.e. market institutions) that make structured exchanges possible (Fligstein, 2001)<sup>15</sup>. Rules constituting markets architectures emerge from the “political game” played by the main actors in the systems, as for instance government officials, capitalists, workers, consumers. In his description of the ideal market regulatory process, Fligstein identifies different ideal types according to which actor dominates the economic-political arena. When capitalists dominate, the state is kept out of markets and its intervention is requested only to face incumbent dominant firms crises. Shareholders have all property rights, private firms capture the regulatory control and governance structures give rise to cartel and clear organisations of competitors. Such a description well reflects the ongoing process of reorganisation of the food supply chain, with private standards and TPC being one of the rule of exchange built up by dominant firms in order to ease their exchange settings, to control suppliers and to thwart competitors through the trade barrier effect of standards.

Capturing regulatory activities is advantageous when it seems better for business to voluntary take on responsibilities and to be able to exert influence than to risk having public agencies set rules or impose laws that might be stricter and less adapted to business practices. The “side effect” of

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<sup>15</sup> Property rights are rules that define who has claims on the profits of firms; governance structures refer to the general rules in a society that define relations of competition and cooperation and how firms should be organised; rules of exchange define who can transact and the conditions under which transactions are carried out; conceptions of control reflect market-specific agreements between actors in firms on principles of internal organization, and the hierarchy or status ordering of firms in a given markets (Fligstein, 2001, pp.33-35).

course is the progressive divergence between standards and the public goals they should help to attain, with unpredictable consequence on the effectiveness of standards in assuring a high level of food safety.

A general conclusion is that private food safety regulation can be very different, in scope and results, from public regulation. The emergence of one or another depends more on “political” than economic issues and reflects power asymmetries in the society. More research efforts, and a wider use of approaches from economic sociology are requested in order to shed light on the current organisational and regulatory trends in the food system.

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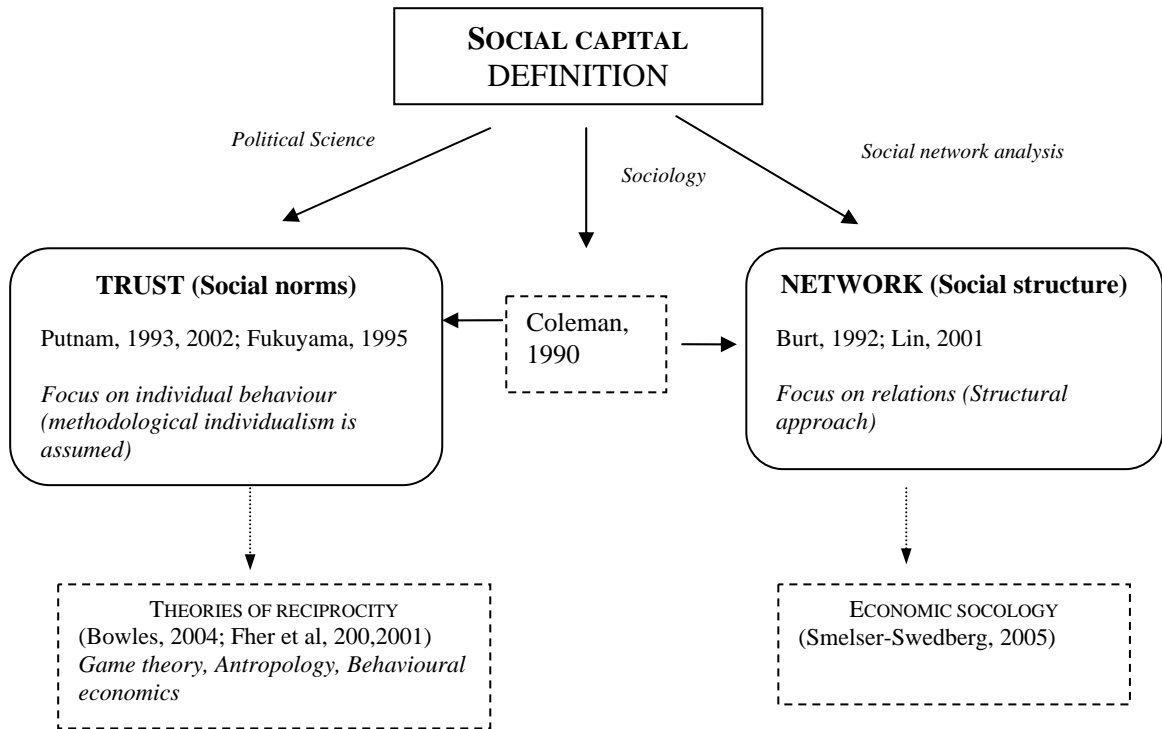
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**Figure 1. EU food safety intervention framework.**

Third international level (non statutory intervention)	FAO and WHO setting goals and guidelines. International agencies supplying informative and operative support.
Second international level (non statutory intervention)	Codex, suggesting guidelines and advices. Certification Bodies (certifiers accreditation).
First international level (statutory intervention)	WTO, statutory advices and trade rules agreements.
EU level (statutory and non statutory intervention)	Regulation (minimum standards on residues, additives, and microbiological contamination; HACCP; Labelling). Directives (standards, labelling, HACCP). Guidelines (planning and defining goals and procedures). Certification bodies (accreditation of private certifiers). Food Safety Agency (task of coordination, procedure settings, information, risk analysis).
National level (statutory intervention)	Laws implementing EU directives. Enforcement powers (allocation of liability and penalties) National Certification bodies.
Subnational level (statutory intervention)	Local laws and policies.
Private level (non statutory intervention)	Private Standards and Third Party Certification.

**Figure 2. Food safety policy: public and private tools**

<b>Public</b> , enforced by the legal system.	<b>Private</b> , enforced by implicit contracts (reputation) or by formal assurance contracts an third party certification.
Minimum quality standards Mandatory HACCP Labelling Mandatory traceability Product liability	Reputation Standard and quality certification Voluntary traceability Voluntary HACCP



**Figure 3 - Two social capital perspectives**