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Gift exchange in the workplace

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ABSTRACT

Certain altruistic phenomena in the workplace that exceed the bounds of contract theory can be explained within the framework of gift exchange theory. We discuss the application of gift exchange theory to interactions between an employer and an employee as well as between employees themselves. We emphasize the opportunities of gifts to improve coordination and contract efficiency in the workplace and argue that there exists the productive function of gifts. We use the framework of a market for externalities in order to demonstrate that given the interrelated activities of agents a gift exchange between them can lead to Pareto improvement.

1. Introduction

The standard solution of the principal–agent problem implies that a principal, who cannot observe an agent's efforts, motivates the latter to high effort by setting rewards related to outcomes. However, this pay-for-performance approach can be associated with a loss of efficiency, especially if the agent is more risk-averse than the principal. In cases of high uncertainty, when exogenous factors can have a dramatic impact, outcome-based incentives generate inefficient risk sharing. Agency theory assumes that any action undertaken by an agent is a response to an incentive mechanism imposed by a principal and that an agent always pursues his own ends, taking into consideration neither common norms nor informal agreements.

Nevertheless, many existing types of principal–agent relationships go beyond the limits of the standard theory of incentive contracts. The pay-for-performance approach cannot explain certain mysterious altruistic phenomena in the relationships between superiors and subordinates, or such phenomena in the relationships among subordinates. For example, in practice one may observe that an employee works conscientiously and even exert greater effort than minimally required, while for seemingly unaccountable reasons an employer pays a worker in excess of the market-clearing wage (Akerlof, 1982). One of the most interesting ways to explain these phenomena and propose a solution for the inefficient risk-sharing problem along the way—is an alternative approach to agency theory known as *gift exchange theory*.

This approach implies that agents (participants in a relationship) are benevolent toward each other, and this is expressed by specific actions and services called gifts. In other words, agents conclude an informal agreement to respond to kindness with kindness.

Gift exchange theory has been broadly applied. Its elements have been used to analyze social relations (see Arrow, 1972; Camerer, 1988; Caplow, 1982; Lowrey, Otnes, & Ruth, 2004; Titmuss 1971) and trade (see Malinowski, 1922; Murrell, 1982), to examine relationships in political (see Lazarev & Gregory, 2003; Matthews, 1959) and university academic (see Antal & Richebé,

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2005) environments, to study charitable activity (see Andreoni, 1989; Falk, 2004) and competitive experimental markets (see Fehr, Kirchsteiger, & Riedl, 1993, 1998). However, gift exchange theory has been most comprehensively applied and developed in the analysis of superior–subordinate relationships in the workplace (e.g. among others Akerlof, 1982, 1984; Mahuteau, 2002; Balkin & Richebé, 2007. For economic experiments in this field see Fehr and Gächter, 2002; Hannan, Kagel, & Moser, 2001; Gneezy, 2002; Huck, Seltzer, & Wallace, 2004; Irlenbusch & Sliwka, 2005; Gregoire, Spraggon, & Weng, 2005; Pereira, Silva, & Silva, 2005; Maximiano, Sloof, & Sonnemans, 2006; Gneezy & List, 2006), and this new approach differs sharply from the standard principal–agent model in contract theory.

The main distinction is that the standard incentive scheme implies activity of one side only (that provides the incentives, the principal), whereas the gift exchange approach implies reciprocity. This reciprocity defines the self-enforcing nature of relationships. Mutual trust leads to a greater intrinsic motivation of the participants in the exchange. As a result, the agent chooses an effort level that is above a required one, while the principal pays a wage that is greater than the market-clearing level. Thus, in the context of this approach, the standard stimulation problem of agency theory is converted into the problem of defining the conditions that would ensure a gift exchange between the principal and the agent. We argue that incentive mechanisms guided by the agent's intrinsic motivation can prove to be more efficient than pay-for-performance incentives.

Aside from the stimulation benefits in principal–agent relationships, gift exchange allows to reconsider the problem of team-based incentives. In reality, the efficiency of one agent's work influences the production set of the other agents in teamwork; there are both positive and negative externalities. Here we define an externality to be the collateral effects of the work actions of one employee on the production set of another employee. On the one hand, the mutual interests of employees may lead to the development of benevolence among them, which could be expressed consciously in specific actions and reciprocal services such as an increase in responsibilities, effort, initiative and productivity, or may simply reinforce the positive interaction between employees. On the other hand, if benevolence is lacking, then mutual discontent, irresponsibility and conflicts result in impediments that substantially increase collective action costs (the free-rider problem has special importance here) and make for worse performance. However, after recognizing their interdependence and inter-influence on the activities of each other, employees as a rule tend to find common ground and start to compromise and meet the needs of each other. For example, an employee who can choose from a range of possible resources and methods for carrying out his duties will prefer the alternative that is the most favorable and have the greatest positive impact on his colleagues. As a result, a gift may lead not only to an increase in the effort and speed within the bounds of the agent's responsibilities, but also to his assisting his colleagues, including the sharing of resources and information, etc. From a formal standpoint, gifts can be considered here to be positive production externalities, and thus gift exchange can be considered to be a market for externalities. We argue that the agents' perception of their interdependent activity and closer social relationships induce them to consciously engage in gift exchanges, where each participant implicitly has a demand for gifts and offers a supply of gifts. Thus, an exchange may occur when gifts are agents' actions that exert positive collateral effects on the efficiency of other agents or/and of the organization as a whole. We demonstrate that gift exchange leads to an efficient equilibrium and provides performance improvement. The positive effects of gift exchange on employees' performance can be proved by means of the economics of externalities. In this paper we distinguish and emphasize the productive function of gifts and prove that gift exchange can explain the phenomenon of teamwork, when the joint production of specialized team members exceeds the sum of their individual outputs. In the same way that gift exchange between a principal and an agent provides the first-best solution in the stimulation problem, gift exchange between team members ensures better performance and a first-best outcome in team production and thus leads to the optimal solution of team-based incentives.

The model presented in this paper differs significantly from the existing approaches to modeling gift exchange relationships. However, our model is not completely new; we only suggest an adequate framework for explaining phenomena observed between employers and employees and thereby contribute to the analysis of formal contract relations in the workplace. We pay special attention to the intrinsic motivation of participants, which is of primary importance in the exchange, but we do not concentrate our analysis on its origins and development. We are interested in the gift exchange equilibrium and in the effect such relations have on economic behavior and production.

We stress two important propositions in the model. Firstly, we do not consider simply gift giving but rather the reciprocal exchange. In this, the model is analogous to Cournot's oligopoly model. However, we assume that gift exchange may possibly be extended in time. Secondly, we propose considering gifts to be the conscious actions of economic agents, which is not far from reality. Although we skip the process of decision making and consider gifts to be the result of the agents' own decisions, we argue that in spite of their symbolic nature, gifts have evident economic effects.

This paper is devoted to the *economic* analysis of gift exchange, although this topic is of interest to many disciplines, and originally there was extensive anthropological (Lévi-Strauss, 1969; Malinowski, 1922; Mauss, 1923–1924; Rehfisch, 1962; Sherry, 1983; Titmuss, 1971; etc.) and sociological (Blau, 1964; Schieffelin, 1980; Schwartz, 1967; etc.) research in this area. The first important economic function of a gift discussed in the literature is that of a signal. As Camerer writes, “gifts are actions people take that convey meaning” (Camerer, 1988: S182). And in the economic sense gifts as signals “mean something that people who do not have the characteristics the signals convey cannot afford those signals” (Camerer, 1988: S182). Such an approach to the analysis of gifts is of great importance, because it can explain the existence of inefficient gifts due to their potential to be efficient signals.

We propose considering another economic function of gifts, which we call the productive function: the potential of gifts to provide higher levels of productivity and improve teamwork performance of givers. The idea that gifts have a productive potential is not new. Similar considerations can be found in the literature on the development of open source software as well as on the creation of knowledge and different intellectual outputs. Benkler (2002) and later Krowne (2005) in their seminal papers describe the process of ‘peer production’, when a large number of people contribute their creative energy (usually over the Internet) to one meaningful project (the most common examples are Linux and Wikipedia). As Krowne asserts, "volunteers contribute project components, and there exists some process to combine them to produce a unified intellectual work" (Krowne, 2005: 3). As "people who participate in peer production communities love it and they feel passionate about their particular area of expertise" (Tapscott & Williams, 2006: 70) one can interpret their contributions as gift giving.

However, our principal idea about the productive function of gifts, which is crucial to the model, differs in some points. First, we proceed from the personal contact of the agents and their inter-related activities in the workplace, as opposed to impersonal contacts over the Internet and the independence of contributors. Second, we concentrate on direct reciprocity: the beneficiary returns a gift directly to the donor. Furthermore, we consider a general case of production regardless of the product's specificity, such as knowledge or intellectual product. Thus, we focus on the positive productive effects of gifts in the principal–agent relationship as well as in peer relationships in the workplace. Given these conditions, a gift exchange perspective allows us to explain altruistic phenomena observed in the interactions between employer and employee, and between employees themselves.

The purpose of this paper is to analyze informal gift exchange in the workplace between a principal and an agent in vertical as well as between agents themselves in horizontal connections. We argue that gift exchange based on agents' intrinsic motivation could be a good alternative to explain not only mysterious altruistic phenomena in the workplace, but also the higher production levels in joint production as compared to predictions of standard incentive schemes.

This paper proceeds as follows. In the first part we analyze the nature of gift exchange, the fundamental ideas and results of this theory that will contribute to our understanding of the nature of such relationships. The subjects of gifts, the attributes and motivation components of gift giving in the workplace are considered. Then we disclose the potential of this approach to the analysis of relationships in the workplace, both in vertical and horizontal connections, and discuss how gift exchange contributes to contract efficiency and coordination between employer and employees and improves their performance. A new approach to the formal modeling of gift exchange is then proposed. In terms of the market for externalities, we prove that gift exchange between economic agents involved in joint production activities allows to achieve Pareto improvement and higher levels of productivity. The final part concludes.

2. The nature of gift exchange

Gift exchange is defined as a benevolence among agents that is expressed in specific actions and services called *gifts*. A classic example in this field is a gift exchange between an employer and an employee. Akerlof (1982) examined in detail a case when a firm pays the workers more than the market-clearing wage and the workers in their turn work harder than required. The idea of regarding a labor contract as a gift exchange stems from phenomena observed in real life in the workplace.

Akerlof points out the significance of norms and informal rules of behavior in the group where an exchange occurs, as well as the solemnity of a sense of kindness that the workers experience with each other and with the firm. Trust, reciprocity and fairness are of great importance in the gift exchange relationship (Akerlof, 1982: 552–556).

Both holistic and individual approaches have been applied to the analysis of gift exchange. The individual approach assumes that a decision of giving is a solution of the agent's decision-making program. As a rule, studies in this context emphasize the signalling function of gifts and the strategic nature of gift exchange. Gifts can serve as a signal of the agent's type or an intension about future investment in a relationship. It is worth noting that gifts that seem to be inefficient at first (for example, expensive "senseless" presents) can be even better signals (Camerer, 1988). Under the holistic approach, which is also broadly accepted, gift exchange is regarded as a prevailing social norm (Carmichael & MacLeod, 1997).

To understand the phenomenon of gift exchange in the relationship of economic agents better, we consider in detail the possible *subjects*, *attributes* and *motivation components* of giving in general and then more particularly in the workplace.

2.1. Subjects of giving

Depending on the aim of giving and the nature of the relationship, there is a wide variety of subjects of giving. Reciprocal services, material goods, extra efforts, loyalty, and reputation can all be gifts. We also note that there are both tangible (flowers or chocolate as well as promotions or a pleasant work assignment in the workplace) and intangible (sharing of information or reputation) gifts. However, these examples are but a short list of the possible subjects of giving. In any given relationship very different subjects can be used as gifts. Cultural contexts and the customs of a particular community play a significant role.

To describe more broadly the possible subjects of gifts we address to resource theory of Foa and Foa (1980) who sum up interpersonal behavior as exchange of resources where "in short, resource is any item,…, which can become the object of exchange among people" (Foa & Foa, 1980: 78). The authors state that resources could be grouped into six classes like love, status, information, money, goods and services depending on concreteness versus symbolism (flowers versus smile), and particularism versus universalism (more or less target specific). These resources are similar to various gifts that may be in reality more or less concrete or symbolic as well as more or less paternalistic or universal. Thus this resource theory helps us to gain a better understanding of the variety of existing gifts.

Notice that the literature distinguishes a gift from a market good in itself (Ferrary, 2003; Offer, 1997). A gift exchange is socialized: any economic good in this context has a symbolic, social or psychological nature. "Even when obtained from the market, it provides evidence of an effort to gratify a particular individual" (Offer, 1997: 454). Furthermore, goods are assumed to have uniform quality in the market due to the impersonal contact of a seller and a customer, while gifts can be either better or worse adequate to the recipient, depending on his preferences and tastes as well as the relationship between the agents or how the gift was made. For example, an encyclopedia on algae could be very valuable for someone who has an acute interest in sea flora, but it would be useless for someone who did not even like botany in school. What is important is that a gift exchange is a personalized exchange.

2.2. Attributes of giving

The large existing literature on gift exchange distinguishes different features of such relations. We consider four principal attributes: *reciprocity*, *trust*, *adequacy*, and *apparent voluntarism*.

2.2.1. Reciprocity

Reciprocity is one of the main attributes of gift exchange. In 1923–1924, the social anthropologist Marcel Mauss stressed the reciprocal nature of giving in his seminal essay *The Gift: The Form and Reason for Exchange in Archaic Societies*. He noted the similarity of roots in Western European languages for "poison" and "gift"[2] that corroborates the obligatory nature of reciprocity of a gift: formerly there used to be a threat of harm to a recipient who failed to reciprocate. Moreover, due to the strong influence of traditions and norms in archaic cultures, gift exchange functioned as mutual insurance: a more successful hunter shared the results of the hunt with those who proved less successful (Mauss, 1923–1924; Miller & Whitford, 2002: 248–249).

Reciprocity is usually delayed in the gift exchange relationship. "Both the value of the reciprocal gesture, and its timing are left to discretion, though often regulated tightly by convention and custom" (Offer, 1997: 451). It is assumed that a receiver may reciprocate over an infinite period of time. Furthermore, reciprocity can be indirect, "with no return from the beneficiary, but a credit with the community, to be reciprocated at some other time and place" (Offer, 1997: 451).

Like anthropologists, Akerlof singles out reciprocity as the most important attribute of gift exchange in the labor contract: a worker increases output in exchange for wage growth. In a model Akerlof proposed, he explains situations where workers exert effort greater than the minimum required. In response, the firm does not raise its standards of work and pays the workers more than the market-clearing wage.

Gift exchange is different from market exchange. It represents a personalized exchange in which the real value of the gift and participation in the exchange is determined by personal feelings and the subjective perceptions of the donor and the recipient. In particular, the value of a gift for a recipient is in many respects determined by the identity of a donor and the nature of their relationship. Being paid some small attention from a near relation is much more valuable than receiving a large gift from a slight acquaintance. In contrast, on the market anonymous participants exchange goods with each other at prices that they are taken as exogenous.[3]

2.2.2. Trust

The formation of relations of trust is of great importance, because it is trust that guarantees reciprocity of exchange. Trust is understood to be "the belief that another will reciprocate a beneficent act not motivated by short-term self-interest (a gift)" (Miller & Whitford, 2002: 250). An agent who first makes a gift in this way demonstrates his trust. Thus, a gift points out an anticipation of relations of trust and is a sign of trust in itself. In other words, a gift displays the potential for trust to develop between parties.

A number of studies test the problem of trust by various experiments. The results prove to be close to theoretical predictions. For example, Fehr et al. (1993) test the efficient wage hypothesis and find that employers in most cases have enough trust to pay more than a minimal wage and employees are in their turn ready to exert higher effort than formally required. Furthermore, they reveal that social history does matter: trust is reinforced if in the past an exchange was reciprocal and adequate (Berg, Dickhaut, & McCabe, 1995; Miller & Whitford, 2002: 249–250).

2.2.3. Adequacy

Van de Ven defines the adequacy of a gift in the following way: "if gifts do not maximize the receiver's utility given his preferences and the costs incurred by the giver, we call them inadequate gifts"(Van de Ven, 2000: 3).

Following this definition, we propose to measure the adequacy of a gift in two perspectives:

- matching by form,
- matching by value.

Matching by form implies a choice of the adequate form of a gift: a worker will not offer his employer money, but prefer instead to exert extra effort or provide services that are of value to the employer. The form of a gift in many respects depends on the common mentality and culture in a particular community. Matching by value is the choice of the adequate size and value of a gift: for instance, extra efforts of an employee must be high enough to increase the total productivity of the firm.

[2] The similarity of roots can be traced "in two major branches of Western European languages. Since in ancient German the word *gift* means both gift and poison, and the Greek word δόσισ for poison, which is the root of the English *dose* has the same root as the Greek word to *give*" (Akerlof, 1982: 549).

[3] Kranton (1996), Klundert and van de Ven (1999) examine in detail the connection between market and gift exchange. On the one hand, they conclude that the market economy (gifts in exchange for money) represents a more effective means of exchange. In equilibrium, subject to the thickness of the market (more agents on the market reduce search costs) all transactions of gift exchange vanish and the size of the market increases. On the other hand, in reality transactions such as gift exchange persist even if they are inefficient. The authors explain this fact by the value of social interactions in themselves. They extend the utility function and take into account the value of social relations in the form of a symbolic utility that people obtain only in the case of gift exchange. As a result the authors conclude that if this symbolic utility is positive, then a high market and gift exchange can coexist (Klundert & van de Ven, 1999; Kranton, 1996).

The degree of adequacy underlines the symbolic and social nature of a gift, because the donor can hardly ever completely guess the preferences and desires of the recipient. A gift usually conveys the subjective perceptions of the giver (an encyclopedia on algae to a colleague who is interested in botany) or the prevailing customs (like flowers or chocolate on New Year's Eve).

However, it is of vital importance not to disclose the value of a gift, because this destroys its symbolic component and makes the giver appear to the receiver to have self-interested motives based on personal gain, rather than demonstrating benevolence and kindness (Balkin & Richebé, 2007).

2.2.4. Apparent voluntarism

Marcel Mauss mentions that a gift exchange combines voluntarism and obligation. In spite of the lack of formal enforcement mechanisms, a recipient experiences social pressure: he has to reciprocate in order to retain his reputation. Thus, giving a gift can be a deliberate strategic act that puts the recipient in the position of a "debtor," while the donor obtains the advantageous position of a "benefactor". Gift exchange "is calculated to create a network of obligation that will guarantee a social position for the giver" (Miller & Whitford, 2002: 252).

Apparent voluntarism in gift giving also includes two other aspects: the timing within which it is appropriate to respond with a gift and the type of gift based on a familiarity of the other party's interests and needs.

According to the eminent French sociologist Bourdieu (1972, 1980) the timing of gift exchange is critical. To give a gift in return immediately would cause insult since it would reveal disrespect and a strong desire to get "out of debt" from the initial donor. On the contrary, the extremely long time to reciprocate with a gift to the donor may test the patience of the donor and this could break off the gift exchange relationship. Thus there is a "zone of comfort" for a gift exchange, which involves having uncertainty over the timing and the type of gift with which the other party will reciprocate but assuming that the party can be trusted to reciprocate.

The concept of apparent voluntarism is closely related to Williamson's (1993, 1996) notion of calculative trust, which implies that agents concluding a contract on the basis of reputation compare the benefits and costs of continuing or discontinuing a contract to the partners. Such trust assumes that stable relations are more profitable for agents than discontinuing the contract. In addition, the gift exchange relationship includes another type of Williamson's notion of trust, that of personal or pure trust. This trust is the result of expedience and profitability of the contract as itself. In other words, agents benefit from cooperation and meeting their engagements even in the presence of incomplete contracting and bounded rationality. In the gift exchange relationship, this corresponds to the attribute of a gift known as trust.

2.3. Motivation components of giving

Van de Ven (2000) distinguishes six elements of gift giving motivation: firstly, altruism that is making others happy; then two different egoisms, one is getting mutual benefits from exchange and the other one implies getting personal benefits from warm glow and social approval; fourthly, the strategical element that signifies signaling, and fifthly, fairness which implies conforming to norms, reducing inequality; and finally, the survival element based on that people choose to give not to be excluded from the community, that is selection (Van de Ven, 2000: 4).

We should say some words on altruism in gift giving. In the literature there is some ambiguity in what is altruism, and whether each gift is altruistic. We keep to the definition of a gift a bit more extensive than the concept of Marcel Mauss. Laidlaw (2000) affirms that even such a gift as a blood donation isn't very altruistic. So we state there may be a mix of different motives in gift giving, in which altruism may predominate or not.

In this sense the classification of the motivation for gift giving by Van de Ven (2000) describes in more detail the roots of the participants' behavior. However, two more elements of motivation need to be added. The first one is based on the social obligation of reciprocity: a donor expects a recipient to return. By giving to many people within one group, an agent solidifies his position; he assumes the role of informal leader. We call this motive *social power*. This motivation component proves to be one of the most important in social networks. The second element is derived from the anthropological perspective of gift exchange, by which a gift serves as a means to clarify status, social role or wealth (Camerer, 1988: S181). This comes from the *potlatch* phenomenon, when a donor tends to overwhelm the receiver with impressive gifts in order to display his superiority. It was a feast of Indian tribes of gift giving representing a competition in generosity and waste to clarify the status and superiority (Mauss, 1923–1924). It is important that a giver that is guided by this motive aspires to present gifts that will be difficult to return on an equivalent basis (Balkin & Richebé, 2007: 57). We propose naming this motive *distinction*.

Notice that in any particular case this or that attribute of a gift may be absent or revealed indirectly (Arrow, 1972; Titmuss, 1971). For instance, the donation of blood is in most cases an anonymous gift that does not imply any reciprocity. This example illustrates the remarkable altruism and the high intrinsic motivation of giving, and this is the reason it is very often considered in the literature.

3. Gift exchange in the workplace

In contract and human capital theory, there is a significant evidence that is difficult to interpret within the bounds of standard incentive schemes such as pay-for-performance and the utility maximization approach. For example, an employer pays a flat wage that is higher than the market-clearing level and an employee produces an output that is higher than the minimum required or standard level (Akerlof, 1982). Either "an employee works overtime on an important project and later receives a preferred work assignment from the employer or an employer provides mentoring to an employee, and the employee later reciprocates by volunteering to work on a public relations committee that benefits the employer's reputation in the local community" (Balkin & Richebé, 2007: 55). Another example would be an employer that pays for general training and an employee that responds with a higher level of cooperation that includes providing increased levels of organizational citizenship behavior (OCB),[4] innovations and commitment to the employer, and a greater propensity to accept changes in work rules and technology (Balkin & Richebé, 2007: 53). Thus, in practice many examples may be observed in which the employers care for their employees (e.g., by protecting them from external risks or promoting them and assisting them in career development), and the employees work more cooperatively and display prosocial behavior. In addition to employer–employee gift exchange, employees can assist each other, for example, by the voluntary mentoring of newcomers, by helping colleagues with complicated assignments by sharing knowledge and resources, or by giving mutual aid during periods of high pressure. Such behavior can be treated within the bounds of gift exchange theory, where any two or more coworkers exchange kindness for kindness.

There is significant experimental evidence that supports gift exchange relations in the workplace (Fehr & Gächter, 2002). For example, Hannan et al. (2001) corroborate Akerlof's model of partial gift exchange in the workplace in which there is no threat of punishment or reputation effects to enforce higher than minimal effort in response to higher than minimum wages. However, in comparing low and high productivity firms they find that workers were systematically less responsive to the effort requests of lower productivity firms and do not provide more efforts even though it is relatively more costly for these firms to offer higher wages. Gregoire et al. (2005) also detect an increase in effort in response to a wage that is higher than initially stated when the employees were recruited. In addition, the authors stress the significance of expectations of employees, because even a very small wage can be regarded as a gift if the recipient expects a lower wage. Maximiano et al. (2004) corroborate the gift exchange practice of higher wage versus higher effort in the relationship of one employer and several employees.

Gneezy (2002) experimentally finds an even stronger gift exchange effect using employees' real effort instead of their measure as money returned as a gift in earlier studies. This allows him to trace how real total profits of an employer change as a result of the higher costs for wage. Gneezy demonstrates that the return on employees' effort proves to be the key factor for revealing whether the reciprocation is sufficient to compensate the employer for the extra costs of wage. He finds that when the return on employees' effort is high, higher wages increase total profits for the employer, while if the return is low, the scope for gift exchange is too small to outweigh the employer's initial gift of higher wages. Mahuteau (2002) proposes a direct evaluation of gift exchange practices between employer and employee using real data on French employers and employees. He corroborates the finding of Akerlof that employers and employees base their relationship on gift exchanges and demonstrates that considerations of reciprocity induce agents to be more cooperative.

Moreover, there are experimental results that support gift exchange practices between employees. One motive for gift exchange in the workgroup (fairness) was noted by Akerlof (1982), who detected that cash posters make more effort from a desire to relax the pressure on workers who are hard pressed and thus reduce inequality in the group. Another interesting result belongs to Meidinger, Rullière, and Villeval (2001) and Rossi and Warglien (2001) who experimentally come to the conclusion that team members will demonstrate a higher level of cooperation if the offer from the principal is more generous.

At the same time, it can be hard to isolate gift exchange practices from other types of relationships, such as economic exchanges in which each participant acts on the basis of his short-term pure economic interests. For this reason, we present below certain features of gift exchange in the workplace that give a more precise description of the attributes of gift exchange considered above.

3.1. Subjects of gifts and features of gift exchange in the workplace

In many respects, gifts are a subtle subject that has equally an economic and a social and symbolic nature. To consider gift exchange relations in the workplace, it is necessary to distinguish this exchange from other relationships such as economic exchange, in which each party is concerned with its own self-interest. We have already discussed some attributes of gift exchange, namely trust, reciprocity, adequacy and apparent voluntarism. In addition, it is necessary to describe the features and rules for gift giving in the workplace.

First, a gift exchange between any colleagues in the workplace is a personalized exchange, and thus there is great potential for trust to develop between participants. It is therefore important that reciprocity is usually extended in time. A recipient can reciprocate at any moment in the future, and even over an indefinite period of time. However, apparent voluntarism does matter, and the receiver feels indebted to the giver so that a network of obligation, which would guarantee a certain social status for the giver, can be formed. According to Miller and Whitford, this type of strategic form of gift can be widely used in career development (Miller & Whitford, 2002: 252). Balkin and Richebé also mention rules of gift exchange such as the avoidance of discussing a gift exchange balance sheet, or making explicit expectations of the return, since such behavior may undermine the gift exchange because of an evident interest in personal gains (Balkin & Richebé, 2007: 57–58). If your colleague decides to help you with a difficult task, it is a gift only if each party is aware of the gesture of kindness and acts appreciatively to the gift, and not as if the receiver was entitled to it. After a balance of exchange is attained, a new round of gift exchange may be launched. These dynamic relations build trust.

Gift exchange relationships in the workplace can be divided into two types, according to the level of exchange participants in the structure of the firm. We distinguish between vertical (principal–agent relationships in the workplace) and horizontal (all excluding principal–agent relationships in the workplace) relations. This distinction is of great importance, especially in organizations with a strict hierarchical structure.

[4] The employees' actions beyond the job duties and work rules, which improve organizational effectiveness, or the willingness to "exert proactive behavior on behalf of the organization" (Frey & Osterloh, 2005: 13; Konovsky & Pugh, 1994; Organ, 1988).

In considering vertical and horizontal gift exchanges, the possible subjects of giving in the workplace may be summarized as follows:

- proposed by an employer to an employee
  - a flat wage above the market-clearing wage;
  - a preferred assignment;
  - relaxation of direct control and monitoring;
  - bearing most risks (connected with business cycles, recessions, accidents and so on);
  - career development;
  - organizational training.
- proposed by an employee to an employer
  - extra effort and performance improvement;
  - overtime work;
  - observance of labor discipline and adherence to voluntary rules;
  - organizational citizenship behavior (OCB) or extra-role behavior;
  - initiative and innovation;
  - loyalty and commitment to an employer;
  - a greater propensity to accept innovations and changes in work rules and technology.
- proposed by a co-worker to another
  - extra effort and performance improvement;
  - reputation;
  - sharing of resources or information;
  - assistance in executing the other's duties.

Depending on the particular society or organization, there may be other, very diverse subjects of gifts.

Notice, however, that there are gifts that improve the organizational effectiveness as a whole (e.g. voluntary mentoring of a newcomer) and gifts that are essentially intended to gratify the personal desires and feelings of a beneficiary (e.g., a birthday present). Following the distinction of organization-based and enjoyment-based intrinsic motivation by Frey (1997) we call such gifts as organization-based gifts and enjoyment-based gifts. Among organization-based gifts there are gifts connected with the immediate execution of duties (e.g. extra effort) and gifts that are not directly related to job responsibilities (e.g., the superior's help in getting the subordinate's relatives hired). These gifts can serve as signals of the willingness to invest in a relationship and/or maintain long-term contact (Camerer, 1988; Offer, 1997), or such gifts can be simply the result of conforming to the accepted norms in the community or organization.

These different gifts are based on different motivation elements of giving. Possibly, the Egoistical motive (benefiting from the exchange) is the main motivation factor for organization-based gifts (e.g., overtime work versus promotion or assistance to colleagues under hard pressure). The Fairness and Social Power motives also prompt workers to make organization-based gifts (e.g., extra effort in teamwork or help in promotion versus voluntary public work in order to increase the employer's reputation). The Strategical motive lies most probably in the origins of enjoyment-based gifts because such gifts are needed to convey only signals. Organization-based gifts may also be guided by the strategical motive, but in this case they would be inefficient as gifts yet efficient as signals. The motive of social approval and warm glow and Survival motive may lie behind both organization-based and enjoyment-based gifts. The Distinction and Altruistic motives are rarely the motivation for givers in the workplace. Of course, there may be many motives for each particular gift, since motivation per se is a complex construction and there is a mix of elements in each case.

Gift giving in the workplace is mainly direct, for example higher wage versus more effort in the principal–agent relationship, and assistance between colleagues in completing difficult tasks in horizontal connections. Gift exchange remains fully personalized. However, indirect gifts in the workplace are also possible, such as extra effort of workers in teams, especially if the output is visible and rewarded. An example of this type of gift could be the voluntary training of newcomers. Gifts, whether direct or indirect, differ in each case both in their motivation and the connection type.

We consider vertical and horizontal gift exchange separately, in order to demonstrate more clearly its potential for easing the problem of stimulation in the principal–agent relationship and strengthening team-based incentives in workgroups.

3.2. Reformulating the stimulation problem in the principal–agent relationship: intrinsic motivation and the crowding-out effect

It is widely recognized that principal–agent theory is limited in understanding some phenomena observed in the workplace as well as in providing high-powered incentive schemes (Frey, 1997, 1998; Frey & Osterloh, 2005; Miller & Whitford, 2002).

The conventional approach regarded as fundamental in the principal–agent relationship includes different schemes using outcome-based incentives. However, the acknowledged solution of pay for performance is subject to criticism. The main points of this criticism are difficulties in measuring output, the problem of inefficient risk-sharing, and the low power of such incentives given high uncertainty and the major effect of exogenous factors. Indeed, the outcome is as a rule affected by exogenous factors (e.g. shifting tastes or changing technologies) that are random variables in the production function. Their effect is felt most by agents that are risk-adverse. Furthermore, outcome-based incentives are insufficient to spur agents to make high effort if there is low individual efficacy and high marginal costs for the extra effort (Miller & Whitford, 2002: 241). It is often difficult to find objective performance measures, and this hampers the use of outcome-based incentives.

Another point of criticism is the question of finding a method for the adequate assessment of the agent's contribution and efforts, and thus linking compensation and performance. Frey and Osterloh (2005) present two main reasons for this link to be missing. First, agents may have a considerable impact on the calculation of their compensation, such as in a manager–shareholder relationship. Second, many activities are based on team production, for which it is inadequate to use incentive schemes designed for the relationship between individual principals and individual agents.[5] This becomes important in view of the fact that teamwork is extremely important in all fields of production.

Furthermore, the standard pay-for-performance scheme fails to explain much of the evidence in the workplace, such as agents' higher effort than minimally required, the voluntary mentoring of newcomers, a higher fixed wage proposed by a principal, or assisting employees via training, sharing risks or promotion. Experimental results support these effects. For example, Miller and Whitford (2002) find that despite the absence of incentives the overwhelming majority of agents supply higher effort although their decision remains a secret for their principals.

Thus, the gift exchange approach enriches the analysis of the principal–agent relationship in two aspects. First, gift exchange theory can be used to categorize altruistic phenomena in the workplace as well as describe their nature and role in the behavior of employers and employees. These phenomena may be defined as implicit agreements of mutual kindness over time. Many real examples in the workplace demonstrate that gift exchange relations form a superstructure over standard contract relations which provides more efficient outcomes for both parties, because such actions are voluntary and intended to procure pleasure or, in economic terms, increase the utility of a partner.

Second, the gift exchange approach is beneficial in analyzing incentives as it can be used to reformulate the central problem of stimulation in the principal–agent relationship by accounting for the intrinsic motivation of agents. Indeed, another point of criticism to the agency approach in the literature is the assumption that agents are motivated only by extrinsic incentives. However, individuals' motivations are deeper rooted in real life. Often people are interested in the activity itself, value their work and comply with certain standards or concepts for their own sake (Frey & Osterloh, 2005: 4); in other words, they are motivated intrinsically. Even if a high-powered incentive scheme is designed perfectly, it will not solve the stimulation problem of agents because it does not account for intrinsic motivation.[6] Moreover, high-powered extrinsic incentives can prove detrimental, because they change the perceived locus of causality from internal to external (Deci & Ryan, 1985) thus forcing agents to switch their focus from the intrinsic value of their activities to monetary compensation. If intrinsic motivation allows the agents to directly satisfy their initial needs (by the activity being interesting by itself, or by its providing the opportunity for the agents to achieve something, self-actualization), then extrinsic motivation works through the indirect satisfaction of needs through financial resources (Frey & Osterloh, 2005: 12–13). Thus intrinsic motivation can suffer from extrinsic incentives in the form of monetary compensation and control. This is called the crowding-out effect (Frey & Osterloh, 2005: 15).

The crowding-out effect, when extrinsic incentives replace intrinsic motivation, appears clearly in a classic example of gift giving, blood donation. Many people are for some reasons (altruism, fairness, social approval, etc.) ready to give blood free of charge. However, the population structure of givers changes if donation is financially rewarded. People who are interested in financial compensation may become donors, and their state of health may not be necessarily good. Thus, medical organizations face the adverse selection problem (Barzel, 1997: 130–132).

This situation is explained by the fact that financial incentives may lower or even destroy intrinsic motivation. A man who receives remuneration for his blood looses his philanthropic status and does not feel a proper pride in public opinion. Frey (1998) asserts that "if the non-pecuniary motivation is endogenous, and a function of the pecuniary motivation, then pecuniary rewards could crowd out other motivations for giving blood" (Miller & Whitford, 2002: 257).

The effect of crowding-out in the workplace has been widely demonstrated in experiments. For example, Irlenbusch and Sliwka (2005) find that in comparing two settings in which a principal can pay only a flat wage or a flat wage with a piece rate, efforts will be lower in the second case. Furthermore, if it is possible to switch from a setting with available piece rates to one in which only fixed wages can be paid, there is a tendency to an even lower effort level.

Formal financial incentives lead only to the second-best outcome, while intrinsic motivation can provide the first-best outcome (Miller & Whitford, 2002: 256–258). Therefore, we arrive at the second important benefit of gift exchange to contract relations. Since gift exchange is based on the intrinsic motivation of parties and does not create the crowding-out effect, it can ensure the first-best outcome. By contrast, agency theory, even assuming an optimal high-powered incentive scheme, can offer only the second-best outcome. Indeed gift exchange guided by intrinsic motivation makes for a self-sustaining relationship. It represents a fundamentally different type of interactions that bring to naught the necessity of stimulating one of the parties.

To consider gift exchange over formal contract relations contributes to the solution to the stimulation problem in the principal–agent relationship by its use of an extended concept of motivation and the self-enforcement nature of the relations it induces, along with the standard outcome-based incentives. We can reformulate the stimulation problem so that instead of finding optimally designed explicit incentive schemes, we define and explain the combination between formal contracts and informal gift exchange. An agent will then be motivated by both extrinsic and intrinsic motivation, which will ensure an

[5] The problem of team-based incentive schemes is considered in more detail below.

[6] For a more deep analysis see Frey (1997), Benabou and Tirole (2003), Sliwka (2003).

optimal mixture of pecuniary interest and value of the activity for its own sake. Thus, mutual kindness agreements between a principal and an agent provide the first-best outcome and sufficient stimulus for both parties.

3.3. Reformulating the problem of team-based incentives: the free-rider problem and performance improvement

Teamwork is beneficial in that joint production of specialized team members can exceed the sum of the individual inputs. In addition, teamwork is advantageous because it facilitates communication and sharing of job experience. However, there are two main incentive problems specific to the multiagent framework: free riding and performance evaluation. The former is regarded as standard collective action costs; the latter is the impossibility of clearly recognizing the contribution of an individual team member to the total output and so rewarding him adequately. In some cases, tournaments and competition settings can be good incentive schemes (Holmstrom, 1982). However, they have limitations in encouraging cooperation between team members and do not work well in situations where a strong specialization is needed, so that a vital contribution from each individual is required for the entire production process.

Akerlof asserts that “in working together, workers acquire sentiment for each other” (Akerlof, 1982: 551). Indeed, by working in teams, individuals have to interact with each other constantly, creating close relationships between each other that result in the formation of social contacts. The literature emphasizes peer pressure and mutual monitoring as key features of teamwork and widely analyses the incentives to cooperation. Kandel and Lazear conclude that “incentives are improved when the group relevant for profit sharing is the peer group, where peer group means the individuals about whom a worker cares or by whom a worker is monitored” (Kandel & Lazear, 1992: 816). Che and Yoo (2001) argue that cooperation can be induced by long-term repeated interaction among team members. Such repeated interactions and mutual dependence can create implicit incentives for team members by encouraging peer pressure. They consider cooperation in teams to be self-enforcement behavior.

Furthermore, there are positive effects for which mutual monitoring occurs in teams. Team members could value the goal itself or a reward and they discipline non-performing members so that the goal is achieved and rewards are given (Bowles, Carpenter, & Gintis, 2006). They may display caring towards other team members and seek to help them through prosocial behaviors such as information sharing, teaching new skills, coaching and mentoring newer team members to get up to expected performance levels more quickly and so on.

Experimental studies support the importance of social interactions between co-workers and peer effects in the workplace. In particular, Falk and Ichino (2003) present clear evidence that the level of effort depends on the interaction between co-workers. They also find that mutual monitoring significantly increases average productivity.

The crowding-out effect in teamwork has also been widely investigated in the literature, and it is found that intrinsic motivation in workgroups is the primary factor in determining the level of effort of each individual. In particular, Frey and Oberholzer-Gee (1997) and Gneezy and Rustichini (2000) find that an increase in monetary compensation reduces individuals' intrinsic motivation and agents demonstrate worse performance and a lower level of contribution to collective goods.

Thus, we stress that intrinsic motivation and social interactions matter significantly in teamwork. They can be beneficial in eliminating free-riding as well as in reducing the need to put the pressure of extrinsic incentives and/or the direct monitoring of a principal on team members. Moreover, a common cause and repeated interactions lead to an interdependence and mutual concern between team members that explain much of the emerging personal contacts. These contacts are often based on regard and benevolence, and provide a fertile ground for the development of gift exchange relations. The literature contains experimental findings on the result of gift exchange in the workplace, guided by the two main motives, social approval (Fehr & Gächter, 1999; Rehder, 1990) and fairness (Akerlof, 1982; Fehr & Gächter, 2000). Furthermore, these papers demonstrate the beneficial effects of increasing workers' intrinsic motivation and gift exchange on team production.

Fehr and Gächter (1999) raise the question of whether social approval can eliminate the free-rider problem in teamwork. They find that social approval matters very little when complete strangers are participating in collective action. However, in groups with even weak social ties, approval incentives have a strong positive effect for reducing free-riding. The “group identity is like ‘lubricant’ that makes social exchange effective” (Fehr & Gächer, 1999: 362).

Akerlof (1982) accentuates the importance of a sentiment of fairness in work groups and describes why better workers come to the aid of their fellows. He stresses that if a worker “has sympathy for other members of the work group, he derives utility from the firm's generous treatment of other members of the group for whom the work rules are a binding constraint” (Akerlof, 1982: 552). He hypothesizes that

- “cash posters worked harder than required because of favorable work attitudes;
- these attitudes were not just individual but also attitudes of the work group;
- these attitudes depended in part upon workers' sense of fair treatment, where fairness was measured by comparison with persons similarly situated” (Akerlof, 1982: 555).

A higher level of workers' effort can be induced by the tendency to fairness and the reduction of inequality by providing a gift to the firm and to colleagues simultaneously. Thus, workers could engage in gift exchange relations in tending to the fairness treatment of the whole workgroup. Akerlof (1982) marks out the importance of reference groups and provides some evidence that group norms determine performance standards.

Meidinger et al. (2001) report the results of an experiment designed to determine whether the principal's fairness helps in reducing free-riding among team members, and demonstrate that a more generous proposition from the principal induces team cooperation.

Taking into consideration the intrinsic motivation and social interactions of workers in teams and extending the analysis of relations in the workplace by the gift exchange concept, the two main incentive problems of work teams are mitigated. Indeed, gift exchange relations in workgroups abolish the failures of team-based incentives. First, there is no free riding under gift exchange because these relations, on the contrary, imply conscious investments from each party. Furthermore, as the free rider problem consists in that each team member neglects the effect of a private act on the total benefit, in the case of gift exchange this problem is eliminated because each agent allows for his beneficial effect on others.

Second, the problem of evaluating the performance of team members ceases to be so acute, and a joint reward is likely to be most efficient. There is no more need to estimate the contribution of each team member and measure his individual performance in the workgroup, because gift exchange is guided by the intrinsic motivation of team members to focus on the activity itself. The key point is that workers are involved in self-enforcement relations. Under gift exchange relations, intrinsic motivation is primary and so implicit incentives are superior to explicit incentives, and pecuniary motivation becomes of secondary importance. Thus, in workgroups with gift exchange between workers, the problem of tem-based incentives is mitigated due to both explicit and implicit inducements to work hard.

Moreover, a mutual agreement between workers to reciprocate to each other by gifts beneficial to joint activities can lead to a level of total production output that exceeds the sum of the individual inputs. We argue that this is possible thanks to gift exchange, which provides the first-best outcome. We develop and formally demonstrate this idea in the next section.

4. Gift exchange as a “market” for externalities

In any work team, the performance of one member is affected by the actions of other members, resulting in the inter-dependence and mutual concern of workers. Gift exchange relations can evolve, given minimal interest in an activity and repeated social interactions between team members. In situations of hard pressure or unforeseen circumstances, workers tend to compromise, find common points in their needs and cooperate with each other. Mutual assistance, mentoring, sharing experience and resources are examples of gifts in the workplace. They seem to be positive production externalities. Indeed, mutual inter-influence on activities and the production sets of members of workgroups lead to positive production externality effects on output, especially in joint projects with specialized team members. Gifts in such workgroups formalize these externality effects thanks to the fact that economic agents take their beneficial effects on each other into account.

Gift exchange arising between workers can explain the higher productivity of teams, in particular, why their joint production exceeds the sum of the individual inputs. This effect of superior performance in teams cannot be explained in terms of formal contract theory. Gift exchange theory, which implies the informal relationships between workers and takes their intrinsic motivation into consideration, proves to be a good instrument for describing this phenomenon. We argue that superior productivity can be achieved due to gift exchange between workers, which provides the first-best outcome thanks to the mutual beneficial effects that team members have on each others' production sets. According to Itoh, “teamwork is optimal if each agent increases his own effort responding to an increase in help from the other agent” (Itoh, 1991: 630). This supports the thesis that gift exchange can provide the optimal level of production in teamwork.

Here we do not study the emergence of gift exchange relations, as it can hardly be explained in economic terms due to the symbolic nature of gift giving. We only stress that repeated social interactions and the interdependence of workers involved in joint activities could be the origin of gift exchange. We focus on the economic effects of such relations in the workplace and their advantages for stimulation and production outcomes.

To demonstrate clearly the beneficial effects of gift exchange on the productivity, we follow the distinction between organization-based and enjoyment-based gifts. We argue that organization-based gifts are in fact investments in the production process and contribute to the final output or the organizational effectiveness. First, we consider the joint production process of two agents with inter-related production sets and demonstrate that there will be underproduction in this case, because the workers do not allow for their beneficial effects on each other. Second, we study the same case with inter-related production activities, but with gift exchange relations between workers, where gifts are organization-based, direct and reciprocal. We show that gift exchange crystallizes the beneficial effects between workers and helps achieve a Pareto-optimal outcome.[7] Thus, in addition to the signal function considered in the literature, we emphasize that gifts have another economic function in the social relations of economic agents in the workplace, a *productive function*.

Without loss of generality, we can consider the joint production activity of horizontally interacting workers. But the conclusions can also be applied to the relationship between a principal and an agent and to a group with both horizontal and vertical connections.

We now use a formal analysis for studying the mechanisms at the heart of gift exchange. The literature recognizes that it is not easy to model gift exchange relationships, but suggests two main approaches, based on static and dynamic frameworks. The most common approach is the analysis of the evolution of gift exchange relations using evolutionary game theory (Carmichael & MacLeod, 1997; Johnson, Levine, & Pesendorfer, 2001; Van de Ven, 2000). The other widespread method involves the use of

[7] An allocation is Pareto efficient or Pareto optimal when no further Pareto improvements can be made that is there is no such a change from one allocation to another that can make at least one individual better off without making any other individual worse off.

Cournot's oligopoly model, in which the participants of the exchange make decisions concerning gifts simultaneously and independently (Barham, Boadway, Marchand, & Pestieau, 1997; Hollander, 1990; Van de Ven, 2000).

We suggest a novel approach to the modeling of a gift exchange relationship based on the proposition that organization-based gifts indeed contribute to the joint production process of workers. We consider the production activity of a team of two (or more) agents engaged in one project or the responsibilities of which either intersect or complement each other. Repeated social contacts and mutual concern contribute to the appearance of gift exchanges. The gift exchange relationship will induce both workers to increase their coordination, work faster, take the initiative and more responsibility, share resources, etc. Gifts such as a higher level of effort or initiative, voluntary mentoring and faster work can formally be considered to be positive production externalities, and gift exchange is nothing but a "market" for externalities. The framework of the market for externalities can be used to demonstrate how gift exchange can provide a Pareto-optimum outcome in which two (or more) economic agents or agencies interact, if their production sets are inter-related and/or complementary.

As above, it is very important to separate market and gift types of exchange. However, here the word "market" acquires a new meaning, namely the implicit mechanism of "groping" mutual kindness. This is analogous to the market's implicit function of equalizing demand and supply. In the traditional sense, gift exchange remains a non-market exchange based on reciprocity, trust, adequacy and apparent voluntarism.

For the formal analysis, we use the particular result of the general equilibrium model with positive production externalities[8] that shows how it is possible to achieve a Pareto-optimum outcome by means of the market for externalities.

The presence of externalities in itself leads to an inefficient market equilibrium: there is either overproduction or underproduction as compared with a Pareto-optimum outcome. Introducing a market for externalities helps solve this problem and achieve efficient allocations. We show below that similar results hold for the case when two (or more) economic agents are involved in joint production, provided that the performance of one is related to the performance of the other. On the one hand, the workers' perception of their interdependence may impede high productivity, for instance as a result of the free-rider problem; this would lead to shirking and underproduction. Gift exchange, however, leads to cooperation between workers and thus serves as an instrument to achieve an efficient equilibrium. It is important to mention that we use a classic formulation of gift exchange in which gifts possess all of the attributes listed above (direct reciprocity, trust, adequacy, apparent voluntarism).

To demonstrate how gift exchange provides Pareto improvement, we use Malenvo's example of externality economics for considering two horizontally interacting agents, assuming their work is interdependent. Suppose that an employer is interested in a project, the responsibility for which is shared between two employees. Consider an economy in which there are only 3 goods, two of which are the outputs of the two workers and the third is the financial resources that are intended for alternative use and valuable for the principal. There is one customer (the employer) and 2 agents (employees). For simplicity, assume that there is only one production factor in the economy, financial assets (money). Employee $j=1,2$ produces output y_j by using production factor m_j (the financial assets the employer pays for worker j's output, i.e. wage). In addition, we suppose also that the employees do not need any resources except financial assets in the production process.

Each worker has a production function, so that production technologies are given by $y_j \le f_j(m_j, y_{-j})$, $j=1,2$. This introduces externalities in the economy, as the production possibilities of one worker are directly affected by the actions of the other worker.

The employer has preferences given by a convex utility function $u(x_i)$, where $x_i \ge 0 (i=1,2)$ are the outputs of the two employees and $x_3 \ge 0$ is the financial resources left over after investing in the project, which have opportunity value for the employer. The employer possesses an initial endowment w of the only production factor.

We also assume that both the employer's utility function and the employees' production functions are differentiable and have the usual properties, so that $f'_m > 0$, $u'_x > 0$.[9] The market clearing constraints in such an economy can be written as

$$y_1 = x_1 \tag{1.1}$$

$$y_2 = x_2 \tag{1.2}$$

$$m_1 + m_2 + x_3 = w \tag{1.3}$$

Proposition 1. *In the case of two (or more) interacting employees, under the assumption that their production sets are inter-related, a market outcome is not Pareto optimal, and vice versa: any Pareto-optimum outcome cannot be achieved as a market equilibrium.*

Proof. See Appendix A.

The equilibrium characteristics and the Pareto-optimum outcome differ by $\frac{\partial f_j / \partial y_{-j}}{\partial f_j / \partial m_j}$, which indicates how much of the financial resource one employee may save when the other employee increases his production by one unit. The main reason for the inefficiency of the market equilibrium is that employees, in determining their optimal financial expenses, do not take this effect into consideration.

[8] See Malenvo's example (Busigin, Jelobodko, & Tsiplakov, 2003: 340–369).

[9] For brevity, we omit the indexes $j=1,2$ and $i=1,2,3$.

However, the employees can control for their inter-related activities by being involved in a gift exchange relationship. Indeed, two workers engaged in one project can either hinder or assist each other. Their interdependence and inter-influence spur them to assist each other and meet the needs of their colleague. In particular, one employee can change his priorities in meeting commitments to speed up the project or work more carefully in order to increase their total resulting performance on the project. The level of benevolence and personal relations determine the degree to which gift exchange develops in each case. As a rule, the interdependence and inter-influence of workers can cause gift giving by themselves. Thus, if employees take into account their mutual impact on each others' activities and recognize the positive effects of gift exchange, a market equilibrium will prove to be Pareto optimal and vice versa. We argue that gift exchange is a mechanism of regulation that lets employees control for their mutual impact on each others' activities and thus allows a market equilibrium to be efficient.

Proposition 2. *Given that the employees' activities are inter-related, an organization-based gift exchange between them allows to achieve Pareto-optimum as a market equilibrium.*

Proof. See Appendix A.

Suppose that, excluding the principal production process (in this case, the joint project), there is a complete system of gift exchange relationships. Then each employee will be implicitly faced with a “demand” and “supply” of gifts that are encouraged by the reciprocity and apparent voluntarism nature of such relations. The parameter, which equalizes the demand and supply for gifts, is the rate of their adequacy. This rate of adequacy plays a role similar to that of externality prices in the model for the market for externalities. We denote it by δ_j, $j=1,2$. Adequacy is a personal characteristic of gifts, which indicates their matching to each other by form and value. We recognize that this parameter is subjective; it is the personalized equilibrium parameter, analogous to the personalized prices in the Lindahl equilibrium.

As presented in Appendix A it is easy to demonstrate that a gift exchange relationship between employees helps achieve an efficient equilibrium. The idea is very simple: if we consider a complete system of gift exchange relationships in addition to the ordinary production process, then the first welfare theorem holds and the market equilibrium in such an economy is Pareto-optimal (Arrow, 1983).

In this model we consider organization-based gifts. The examples can be faster work, a higher level of diligence and effort, resource sharing and even a certain expansion of responsibilities (exchange of subtasks) within the limits of the project. Gift exchange not only improves the professional contact between agents and so increases the quality of the information flow between them, but also increases their productivity and can shorten the length of the project. Each employee takes into consideration his impact on his partner's activity, so that the total costs needed for the joint project are reduced leading to Pareto improvement.

By analogy with the fact that the inefficient equilibrium in an economy with externalities is the result of the absence of a market for externalities, in this case the inefficient market outcome in an economy with inter-related activities of employees is the result of the absence of gift exchange between them.

Notice that we propose a new method for modeling gift exchange by suggesting a new framework to show that gift exchange can lead to a Pareto improvement in teamwork. Moreover, the proposed model explains the intriguing phenomenon observed in teamwork, when the joint production of specialized team members exceeds the sum of their individual outputs.

The proposed model is rather general, and it can be applied to any joint activities regardless of the sector, type of connections, or number of team members. The main contribution of this model is the use of a novel framework in gift exchange theory to formalize the economic *productive* effects of social exchange between economic agents, and to give a formula for the improvements provided by such relations. This approach abolishes free riding in workgroups and provides the first-best solution to the problem of team-based incentives by stressing intrinsic motivation and self-enforcement.

5. The adequacy of a gift

The adequacy of a gift in the exchange relationship deserves special attention. As shown above, the adequacy of a gift has an important function: it equalizes the demand and supply for gifts. The intuition is that agents decide to take part in the exchange relationship only if their utility increases, or at least does not decrease. In fact this directly follows from the definition of adequacy.

The rate of adequacy represents the implicit matching of gifts to each other by form and value. In an exchange relationship, this coefficient plays a role similar to that of the externality price. It is important to mention that, just as in externality economics, the adequacy of gifts is a subjective estimate of their matching by form and value.[10]

Since adequacy involves the subjective perceptions of the participants to the exchange, these perceptions are very significant. In order to find the points of contact for an exchange to take place, participants can be guided by past experience of interactions or by

[10] The concept of a subjective estimate of the adequacy of a gift in the gift exchange equilibrium is similar to the concept of personalized prices in the Lindahl equilibrium. An efficient market outcome in a gift exchange economy can be achieved given these subjective estimates.

certain elements of culture. One might say there are focal points in relations of this kind. The repeated nature of relations and reputation effects also matter. Thus, gift exchange can be used to describe certain elements of informal relations that are often found in the workplace and transcend formal contract relations.

6. Conclusions

Normally, relationships between employer and employee are analyzed within the framework of contract theory, where a principal stimulates an agent not to shirk by pay-for performance instruments such as premiums and bonuses.

This paper considers an alternative approach that implies that benevolent relations between the principal and the agent, as well as among agents themselves, can evolve and this anticipation of trust can be expressed by specific actions and services (gifts).

The gift exchange perspective allows us to explain altruistic phenomena in the workplace that seem at first to be simple mutual altruism, which contradicts self-interested behavior. We argue that these actions can be treated as signs of benevolence to a partner, with the implicit expectation of a future return of kindness.

We try to extend the understanding of the principal–agent relationship and teamwork by taking into account the informal relations between employers and employees, which are based on intrinsic motivation and characterized by the self-enforcement nature. In practice, many altruistic phenomena that exceed the bounds of formal contract theory are observed in the workplace, and there is a need for their explanation in formal terms. A gift exchange perspective proves to be a good framework for describing these social interactions in the workplace.

Although these relationships vary across different cultures, communities and organizations, we point out the common features of gift exchange in the workplace. We describe the main attributes, subjects and motivation components of gift exchange between an employer and an employee, as well as between employees themselves.

We distinguish between vertical and horizontal connections in the workplace and argue that gift exchange in these relations have different features. The specificity of gift exchange in the principal–agent framework and teamwork has been considered separately. We analyze the benefits of gift exchange, how it enriches contract theory; by reformulating the stimulation problem in the principal–agent relationship and the free rider problem in teams.

In the principal–agent relationship we emphasize the intrinsic motivation underlying gift exchange that leads to the first-best solution of the stimulation problem. The crowding out effect is also described. In teamwork we stress that gift exchange abolishes the free-rider problem and the need to measure the individual performance of team members. We mention the two main motives of gift giving in work groups: social approval and fairness.

It is important that in both vertical and horizontal gift exchange relations, intrinsic motivation moves to the forefront and explicit incentives recede in importance. Gift exchange allows the first-best outcome to be achieved, and so it can prove to be more efficient than standard pay-for-performance and team-based incentive schemes.

We focus on the economic functions of gift exchange in the workplace. Gift exchange reveals mutual interest and the willingness to form long-term connections. However, aside from functioning as a signal, gift exchange has a productive function that can ensure the optimal production level in teamwork. We demonstrate how mutual kindness such as gift exchange can benefit the production process. The separation of organization-based gifts (which improve the organizational effectiveness) helps reveal these effects in a clear manner and consider the contribution of gifts to improving the overall performance.

We use the framework of externality economics to demonstrate that, for the case of interacting employees with inter-related activities, gift exchange can provide Pareto improvement. Employees with inter-affected production sets do not take their beneficial effects on each others' activities into consideration, and the equilibrium is characterized by underproduction. However, if employees are involved in gift exchange relations, then a Pareto-optimal level of production may be reached. The most important role in the gift exchange relationship is played by the rate of adequacy of gifts, which represents matching gifts to each other by form and value. This rate has a subjective nature and it is similar to the externality price in markets for externalities.

This formal inclusion of gift exchange in the joint production is of great importance, because it shows how the first-best outcome in teamwork can be achieved, so that the joint effort of specialized team members exceeds the sum of the individual inputs.

This analysis of gift exchange relations in the workplace has important implications for environments in which informal relations between workers and their intrinsic motivation come first. Examples are research teams and university academia, or public bureaucracies with their own peculiar culture of informal interactions between economic agents. However, the most important conclusion is that gift exchange in any workplace can play a significant role and can evolve over standard formal contract relations. Thus, gift exchange enriches the analysis of stimulation in the principal–agent framework, explains certain altruistic phenomena in the workplace and the higher levels of joint productivity.

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Appendix A

Proof of Proposition 1. We will derive the differential characteristics of the Pareto-optimum and the market equilibrium.

1). The Pareto-optimum allocation $(\tilde{x}_i, \tilde{y}_j, \tilde{m}_j)$ can be found from the following problem

$$u\left(y_j,\, w-\sum_{j=1}^{2} \mathrm{m_j}\right) \to \max_{y_j,\, m_j} \tag{2}$$

$$y_j \leq f_j(m_j,\, y_{-j}),$$

$$y_j \geq 0, \qquad j=1,2,$$

$$\sum_{j=1}^{2} \mathrm{m_j} \leq \mathrm{w}.$$

Suppose that this problem has an interior solution. After differentiation of the Lagrange function we obtain

$$\frac{\partial u}{\partial x_1} - \frac{\partial u/\partial x_3}{\partial f_1/\partial m_1} + \frac{\partial u/\partial x_3}{\partial f_2/\partial m_2}\frac{\partial f_2}{\partial y_1} = 0 \tag{3.1}$$

$$\frac{\partial u}{\partial x_2} - \frac{\partial u/\partial x_3}{\partial f_1/\partial m_1}\frac{\partial f_1}{\partial y_2} + \frac{\partial u/\partial x_3}{\partial f_2/\partial m_2} = 0 \tag{3.2}$$

We divide these expressions by the positive marginal utility of financial resources $\partial u/\partial x_3$ to find

$$\frac{\partial u/\partial x_1}{\partial u/\partial x_3} = \frac{1}{\partial f_1/\partial m_1} - \frac{\partial f_2/\partial y_1}{\partial f_2/\partial m_2} \tag{4.1}$$

$$\frac{\partial u/\partial x_2}{\partial u/\partial x_3} = \frac{1}{\partial f_2/\partial m_2} - \frac{\partial f_1/\partial y_2}{\partial f_1/\partial m_1} \tag{4.2}$$

2). Now consider a market outcome in this economy (an interior solution). The set $(p_i, \bar{x}_i = \bar{y}_j|_{i=j}, \bar{m}_j)$ is an equilibrium in the economy with production externalities, if at the given prices p_i $(i=1,2,3)$ the outputs $\bar{y}_j$ and the financial resources $\bar{m}_j$ $(j=1,2)$ constitute the solution to the profit maximization problem of employee j and x_i $(i=1,2,3)$ is a solution to the utility maximization problem of the employer subject to the market clearing constraints (1.1)–(1.3).

a) The employer's problem can be written as follows:

$$u(x_i) \to \max_{x_i} \tag{5}$$

$$\sum_{i=1}^{3} p_i x_i \leq I$$

In this case p_3 is the opportunity value of the financial resources.

The solution has the standard characteristic of consumer choice $(\bar{x}_i)$: the marginal rate of substitution equals the ratio of prices:

$$\frac{\partial u/\partial x_i}{\partial u/\partial x_3} = \frac{p_i}{p_3}, \quad i=1,2 \tag{6}$$

b) Employee j's profit maximization problem can be written as

$$\pi_j = p_j f_j\left(m_j, \bar{y}_{-j}\right) - p_3 m_j \to \max_{m_j} \tag{7}$$

From the solution of this problem we find that the technical rate of substitution equals the ratio of prices:

$$\frac{1}{\partial f_j/\partial m_j} = \frac{p_j}{p_3}, \quad j=1,2 \tag{8}$$

Thus, in the market equilibrium

$$\frac{\partial u/\partial x_1}{\partial u/\partial x_3} = \frac{1}{\partial f_1/\partial m_1} \tag{9.1}$$

$$\frac{\partial u/\partial x_2}{\partial u/\partial x_3} = \frac{1}{\partial f_2/\partial m_2} \tag{9.2}$$

Comparing Eqs. ((4.1) and (4.2)) and Eqs. ((9.1) and (9.2)), we see that as the production activities of employees are inter-related, the derivatives $\partial f_j/\partial y_{-j}$, which give the marginal effect of externalities, are not zero. Therefore, the market outcome is not Pareto efficient and a Pareto-optimum cannot be achieved as a market equilibrium.

Proof of Proposition 2. We can describe the market equilibrium. The utility maximization problem remains the same, so the market characteristics of the employer's allocation do not change. However, the profit maximization problem of employee *j* is altered. It can now be stated as

$$\pi_j = (p_j - \delta_j) f_j(m_j, y_{-j}) - p_3 m_j + \delta_{-j} y_{-j} \to \max_{m_j, y_{-j}} \tag{10}$$

Differentiating with respect to m_j and y_{-j}, we get

$$\frac{1}{\partial f_j/\partial m_j} = \frac{p_j - \delta_j}{p_3}, \tag{11.1}$$

$$\frac{\partial f_j/\partial y_{-j}}{\partial f_j/\partial m_j} = \frac{\delta_{-j}}{p_3}, \quad j = 1, 2 \tag{11.2}$$

Expressing the prices from Eq. (6) and substituting them into Eqs. ((11.1) and (11.2)), we obtain the equilibrium differential characteristic that coincides with the differential characteristic of the Pareto optimum:

$$\frac{\partial u/\partial x_1}{\partial u/\partial x_3} = \frac{1}{\partial f_1/\partial m_1} - \frac{\partial f_2/\partial y_1}{\partial f_2/\partial m_2} \tag{12.1}$$

$$\frac{\partial u/\partial x_2}{\partial u/\partial x_3} = \frac{1}{\partial f_2/\partial m_2} - \frac{\partial f_1/\partial y_2}{\partial f_1/\partial m_1} \tag{12.2}$$

Thus we see that the equilibrium in the economy with gift exchange is Pareto-optimal.

References

Akerlof, G. (1982). Labor contracts as a partial gift exchange. *Quarterly Journal of Economics*, *97*(4), 543–569.
Akerlof, G. (1984). Gift exchange and efficiency-wage theory: Four views. *American Economic Review*, *74*(2), 79–83.
Andreoni, J. (1989). Giving with impure altruism: Applications to charity and Ricardian equivalence. *Journal of Political Economy*, *97*(6), 1447–1458.
Antal, A., & Richebé, N., (2005). A passion for giving, a passion for sharing, mimeo.
Arrow, K. (1972). Gifts and exchanges. *Philosophy and Public Affairs*, *1*(4), 343–362.
Arrow, K. (1983). The organization of economic activity: Issues pertinent to the choice of market versus non-market allocation. *Collected papers of K. Arrow General Equilibrium*, *Vol. II* (pp. 133–155). Oxford: Basil Blackwell.
Balkin, D., & Richebé, N. (2007). A gift exchange perspective on organizational training. *Human Resource Management Review*, *17*(1), 52–62.
Barham, V., Boadway, R., Marchand, M., & Pestieau, P. (1997). Volunteer work and club size: Nash equilibrium and optimality. *Journal of Public Economics*, *65*(1), 9–22.
Barzel, Y. (1997). *Economic analysis of property rights.* Cambridge: Cambridge University Press.
Benabou, R., & Tirole, J. (2003). Intrinsic and extrinsic motivation. *Review of Economic Studies*, *70*(3), 489–520.
Benkler, Y. (2002). Coase's Penguin, or Linux and the nature of the firm. *Yale Law Journal*, *112*(3), 369–446.
Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, reciprocity, and social history. *Games and Economic Behavior*, *10*(1), 122–142.
Blau, P. (1964). *Exchange and power in social life.* New York: Wiley.
Bourdieu, P., (1977, orig. 1972). Outline of a theory of practice. Cambridge: Cambridge University Press.
Bourdieu, P., (1990, orig. 1980). The logic of practice. stanford: Stanford University Press.
Bowles, S., Carpenter, J., & Gintis, H. (2006). Mutual monitoring in teams: Theory and experimental evidence on the importance of reciprocity. *IZA Discussion Paper, 2106*.
Busigin, V., Jelobodko, E., & Tsiplakov, A. (2003). *Microeconomics — The third level.* Novosibirsk: Novosibirsk State University. (In Russian).
Camerer, C. (1988). Gifts as economic signals and social symbols. *American Journal of Sociology*, *94*, S180–S214.
Caplow, T. (1982). Christmas gifts and kin networks. *American Sociological Review*, *47*(3), 383–392.
Carmichael, H., & MacLeod, W. (1997). Gift giving and the evolution of cooperation. *International Economic Review*, *38*(3), 485–509.
Che, Y., & Yoo, S. (2001). Optimal incentives for teams. *American Economic Review*, *91*(3), 525–541.
Deci, E., & Ryan, R. (1985). *Intrinsic motivation and self-determination in human behavior.* New York: Plenum Press.
Falk, A. (2004). Charitable giving as a gift exchange: Evidence from a field experiment. *IZA Discussion Papers, 1148. IZA — Institute for the Study of Labor.*
Falk, A., & Ichino, A. (2003). Clean evidence on peer effects. *IZA Discussion Papers, 732. IZA — Institute for the Study of Labor.*
Fehr, E., & Gächter, S. (1999). Collective action as a social exchange. *Journal of Economic Behavior and Organization*, *39*(4), 341–369.
Fehr, E., & Gächter, S. (2000). Fairness and retaliation: The economics of reciprocity. *Journal of Economic Perspectives*, *14*(3), 159–181.

Fehr, E., & Gächter, S. (2002). Fairness on the labor market — A survey of experimental results. In F. Bolle & M. Lehmann-Waffenschmidt (Eds.), *Surveys in experimental economics: Bargaining, cooperation and election and election stock markets* (pp. 95–132). Heidelberg: Physica-Verlag.
Fehr, E., Kirchsteiger, G., & Riedl, A. (1993). Does fairness prevent market clearing? *The Quarterly Journal of Economics*, *108*(2), 437–459.
Fehr, E., Kirchsteiger, G., & Riedl, A. (1998). Gift exchange and reciprocity in competitive experimental markets. *European Economic Review*, *42*(1), 1–34.
Ferrary, M. (2003). The gift exchange in the social networks of silicon valley. *California Management Review*, *45*(4), 120–138.
Foa, E. B., & Foa, U. G. (1980). Resource theory: Interpersonal behavior as exchange. In K. J. Gergen, M. S. Greenberg & R.H. Willis (Eds.), *Social exchange: Advances in theory and research* (pp. 77–94). New York: Plenem Press.
Frey, B. (1997). *Not just for the money: An economic theory of personal motivation.* Brookfield: Edward Elgar.
Frey, B. (1998). Institutions and morale: The crowding out effect. In A. Ben-Ner & L. Putterman (Eds.), *Economics, values and organization* (pp. 437–460). Cambridge: Cambridge University Press.
Frey, B., & Oberholzer-Gee, F. (1997). The cost of price incentives: An empirical analysis of motivation crowding-out. *American Economic Review*, *87*(4), 746–755.
Frey, B., & Osterloh, M. (2005). Yes, managers should be paid like bureaucrats. *CESifo Working Paper, 1379*.
Gneezy, U., (2002). Does high wage lead to high profits: An experimental study of reciprocity using real efforts, mimeo.
Gneezy, U.,& List, J., (2006). Putting behavioral economics to work: Testing for gift exchange in labour markets using field experiments, mimeo.
Gneezy, U., & Rustichini, A. (2000). Pay enough or don't pay at all. *Quarterly Journal of Economics*, *115*(3), 791–810.
Gregoire, P., Spraggon, J.,& Weng, D., (2005). Gift exchange with belief-dependent payoffs: An experimental investigation, mimeo.
Hannan, L., Kagel, J., & Moser, D., (2001). Partial gift exchange in an experimental labour market: Impact of subject population differences, productivity differences and effort requests on behavior, mimeo.
Hollander, H. (1990). A social exchange approach to voluntary cooperation. *American Economic Review*, *80*(5), 1157–1167.
Holmstrom, B. (1982). Moral hazard in teams. *Bell Journal of Economics*, *13*(2), 324–340.
Huck, S., Seltzer, A., & Wallace, B., (2004). Differed compensation and gift exchange: An experimental investigation into multi-period labor markets, mimeo.
Irlenbusch, B., & Sliwka, D. (2005). Incentives, decision frames and motivation crowding out — An experimental investigation. *IZA Working Papers, 1758*.
Itoh, H. (1991). Incentives to help in multi-agent situations. *Econometrica*, *59*(3), 611–636.
Johnson, P., Levine, D., & Pesendorfer, W. (2001). Evolution and information in a gift-giving game. *Journal of Economic Theory*, *100*(1), 1–21.
Kandel, E., & Lazear, E. (1992). Peer pressure and partnerships. *Journal of Political Economy*, *100*(4), 801–817.
Klundert, T., & van de Ven, J. (1999). On the viability of gift exchange in a market environment. *CentER Discussion Papers, 99113*.
Konovsky, M., & Pugh, S. (1994). Citizenship behavior and social exchange. *Academy of Management Journal*, *37*(3), 656–669.
Kranton, R. (1996). Reciprocal exchange: A self-sustaining system. *American Economic Review*, *86*(4), 830–851.
Krowne, A. (2005). The FUD-based encyclopedia. *Free Software Magazine, 2* [http://www.freesoftwaremagazine.com/articles/fud_based_encyclopedia?page=0%2C0], (accessed 27 October 2008).
Laidlaw, J. (2000). A free gift makes no friends. *Journal of the Royal Anthropological Institute*, *6*(4), 617–634.
Lazarev, V., & Gregory, P. (2003). Commissars and cars: A case study in the political economy of dictatorship. *Journal of Comparative Economics*, *31*(1), 1–19.
Lévi-Strauss, C., (1949). Les Structures Elémentaires de la Parenté. Paris: Presses Universitaires de France. (Translation: Lévi-Strauss, C. (1969). The Elementary Structures of Kinship. Boston: Beacon Press.)
Lowrey, T., Otnes, C., & Ruth, J. (2004). Social influences on dyadic giving over time: A taxonomy from the giver's perspective. *Journal of Consumer Research*, *30*(4), 547–558.
Mahuteau, S., (2002). Reciprocal fairness and gift exchange practices in the labor contract: Econometric analysis on a French firms survey, mimeo. University of Western Sydney.
Malinowski, B. (1922). *Argonauts of the Western Pacific: An account of native enterprise and adventure in the archipelagoes of Melanesian New Guinea. Studies in Economics and Political Science, 65* London: Routledge and Kegan Paul.
Matthews, D. (1959). The folkways in the United States Senate: Conformity to group norms and legislative effectiveness. *The American Political Science Review*, *53*(4), 1064–1089.
Mauss, M., (1923–1924). Essai sur le don. Forme et Raison de l'Echange dans les Sociétés Archaïques. l'Année Sociologique, seconde série. (Translation: Mauss, M. (1950). The Gift: The Form and Reason for Exchange in Archaic Societies. New York: W.W. Norton.)
Maximiano, S., Sloof, R., & Sonnemans, J. (2004). Gift exchange in a multi-worker firm. *Tinbergen Institute Discussion Papers, TI 2004-100/1*.
Maximiano, S., Sloof, R., & Sonnemans, J. (2006). Gift exchange and the separation of ownership and control. *Tinbergen Institute Discussion Papers, 2006-037/1*.
Meidinger, C., Rullière, J., & Villeval, M. (2001). Free-riding and fairness in principal–multi-agent relationships: Experimental evidence. *GATE Working papers, 01-08*. GATE - Groupe d'Analyse et de Théorie Économique.
Miller, G., & Whitford, A. (2002). Trust and incentives in principal–agent negotiations: The "insurance/incentive trade-off". *Journal of Theoretical Politics*, *14*(2), 231–267.
Murrell, P. (1982). Product quality, market signaling and the development of east–west trade. *Economic Inquiry*, *20*(4), 589–600.
Offer, A. (1997). Between the gift and the market: The economy of regard. *Economic History Review*, *50*(3), 450–476.
Organ, D. (1988). *Organizational citizenship behavior: The good soldier syndrome.* Lexington: Lexington Books.
Pereira, P., Silva, N., & Silva, J. (2005). Positive and negative reciprocity in the labor market. *Journal of Economic Behavior and Organization*, *59*(3), 406–422.
Rehder, R. (1990). Japanese transplants: After the honeymoon. *Business Horizons*, *33*(1), 87–98.
Rehfisch, F. (1962). Competitive gift exchange among the Mambila.*Cahiers D'Études Africaines*, *3*(9), 91–103 ([http://www.era.anthropology.ac.uk/Era_Resources/Era/Rehfisch/Papers/gift.html], (accessed 27 October 2008)).
Rossi, A., & Warglien, M. (2001). An experimental investigation of fairness and reciprocal behavior in a triangular principal–multiagent relationship. *ROCK Working Papers, 391* [http://eprints.biblio.unitn.it/perl/advsearch?authors=%22Warglien,%20Massimo%22&_order=byyear], (accessed 27 October 2008).
Schieffelin, E. (1980). Reciprocity and the construction of reality. *Man, New Series*, *15*(3), 502–517.
Schwartz, B. (1967). The social psychology of the gift. *American Journal of Sociology*, *73*(1), 1–11.
Sherry, J. (1983). Gift giving in the anthropological perspective. *Journal of Consumer Research*, *10*(2), 157–168.
Sliwka, D. (2003). On the hidden costs of incentive schemes. *IZA Discussion Papers, 844* [http://papers.ssrn.com/sol3/papers.cfm?abstract_id=435200], (accessed 27 October 2008).
Tapscott, D., & Williams, A. (2006). *Wikinomics: How mass collaboration changes everything.* New York: Portfolio Hardcover.
Titmuss, R. (1971). *The gift relationship: From human blood to social policy.* New York: Random House.
Van de Ven, J. (2000). The economics of the gift. *Tilburg University Discussion Papers, 68* : Center for Economic Research.
Williamson, O. (1993). Calculativeness, trust, and economic organization. *Journal of Law and Economics*, *36*(1), 453–486.
Williamson, O. (1996). *The mechanisms of governance.* New York: Oxford University Press.