Chapter 7
Incentives in Organizations: Can Economics and Psychology Coexist in Human Resources Management?

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Abstract Several disciplines have approached Human Resources Management (HRM) from different perspectives with several authors providing interesting contributions but often ignoring each other. In this chapter, I will illustrate how Economics and Psychology approach HRM in order to point out differences but also to areas of intersection between these two important disciplines. I will mainly concentrate on Economics and Psychology, not for the sake of some alleged priority or superiority of these disciplines, but rather for being more familiar with this literature. In the future research it would be interesting to add perspectives coming from other disciplines. Psychology and Economics, as social sciences, often deal with models of human behavior. It is well known that these two disciplines offer contrasting theories of human behavior on virtually every major point (DeAngelo et al. 2011). One strong point of disagreement is rationality (Smith 1991). We will see that the contrast on rationality is not limited to Economics and Psychology. Even if the differences between these two disciplines are often stark, they both agree on incompleteness of contracts. In this chapter, I will explore how these disciplines approach this gap, what are the main differences, and the possible integrations.

> Disciplines are categories that facilitate filing the content of science. They are nothing more than filing categories. Nature is not organized the way our knowledge of it is. Furthermore, the body of scientific knowledge can, and has been, organized in different ways. No one way has ontological priority. Russell L. Ackoff (1973, p. 667).

I am grateful to Laura Basta, Gian-Italo Bischi, Arianna Dal Forno, Paolo Bertoletti, Denise Rousseau, Pietro Terna and Gabriella Valentino for helpful suggestions. Usual caveats apply.

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I. Giannoccaro (ed.), *Behavioral Issues in Operations Management*,
DOI: 10.1007/978-1-4471-4878-4_7, © Springer-Verlag London 2013

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Psychology and Economics, as social sciences, often deal with models of human behavior. It is well known that these two disciplines offer contrasting theories of human behavior on virtually every major point (DeAngelo et al. 2011). One strong point of disagreement is rationality (Smith 1991). We will see that the contrast on rationality is not limited to Economics and Psychology. Even if the differences between these two disciplines are often stark, they both agree on incompleteness of contracts. In this chapter, I will explore how these disciplines approach this gap, what the main differences are, and the possible integrations.

1 Human Resource Management

A first important aspect lies in the definition of HRM. In the late 1980s, Guest (1987) argued that although the term was widely used, its definition was lost. In the Management literature fads are not uncommon, and often new terms rise to popularity (Birnbaum, 2000). For example, Carson et al. (2000) describe fads as "managerial interventions which appear to be innovative, rational, and functional and are aimed at encouraging better organizational performance." According to Boudreau et al. (2003), the HRM approach is derived from disciplines such as Psychology, Sociology, and Inferential Statistics. HRM models describe employment and behavioral processes and their relationships to aspects as rewards, recognition, staffing, sourcing, learning, development, as well as organization structures. HRM focuses on predicting and explaining outcomes such as performance, attraction, retention, loyalty, and citizenship.

According to Legge (2005), although when considering HRM it is possible to find several different models, from the majority of the normative definitions two—not necessarily incompatible—emphases, can be identified. On the one hand HRM should focus on the crucial importance of the close integration of human resource policies and activities with business strategy; in this view human resources (HR) are considered as a factor of production. On the other hand, whereas keeping the importance of integrating HR policies with business objectives, employees are treated as valued assets and as a source of competitive advantage through their commitment, adaptability, and high quality of performance. In this sense humans are not machines and therefore an interdisciplinary examination of people in the workplace is in order. Therefore, several disciplines such as Psychology, Industrial Relations, Industrial Engineering, Sociology, Economics, are called to approach HRM.

Recently, Boudreau et al. (2003) explored the interface between operations management (OM) and human resources by examining how human considerations affect classical OM results and how operational considerations affect classical HRM results. OM deals with the design and management of products, processes, services, and supply chains, and may be defined as the study of decision making in the operations function (Schroeder 1993). The OM approach is grounded on some assumptions which greatly simplify human behavior. They are

(1) "People are not a major factor (Many models look at machines without people, so the human side is omitted entirely).
(2) People are deterministic and predictable. People have perfect availability (no breaks, absenteeism, etc.). Task times are deterministic. Mistakes do not happen, or mistakes occur randomly. Workers are identical (work at the same speed, have the same values, and respond to the same incentives).
(3) Workers are independent (not affected by each other, physically or psychologically).
(4) Workers are "stationary." No learning, tiredness, or other patterns exist. Problem solving is not considered.
(5) Workers are not part of the product or service. Workers support the "product" (e.g., by making it, repairing equipment, etc.) but are not considered explicitly as part of the customer experience. The impact of the system structure on how customers interact with workers is ignored.
(6) Workers are emotionless and unaffected by factors such as pride, loyalty, and embarrassment.
(7) Work is perfectly observable. Measurement error is ignored. No consideration is given to the possibility that observation changes performance (Hawthorne effect)." (Boudreau et al. 2003, p. 183).

Although assumptions (1), (5), and (7) are more related to the technological aspects of the process, it is immediate to see that assumptions (2–4) and (6) are strikingly similar to those used in Economics. In fact, in basic economics, labor is a commodity; the employer buys it at the current market price assuming a definite relation between employees' hours of work and the labor which is provided. This approach is really simplistic and has been criticized; for example, Simon observed that "This way of viewing the employment contract and the management of labor involves a very high order of abstraction-such a high order, in fact, as to leave out of account the most striking empirical facts of the situation as we observe it in the real world. In particular, it abstracts away the most obvious peculiarities of the employment contract, those which distinguish it from other kinds of contracts" (Simon 1951, p. 293).

As employees are not identical machines and the relation between employees' hours of work and labor cannot be realistically considered as fixed, then the problem of incentives arises (Baron and Kreps 1999). For example, when the employer is unable to observe the employee, the latter can provide less work than expected and claim that some contingencies prevented him/her from providing the agreed amount of work. In many cases the employee has different information

from the employer, for instance he may be better informed than the employer about production technology. The models considered in the theory of contracts take into account some of the strategic interactions between privately informed agents in well-defined settings.

2 Contract Theory

According to Salanie (1997), contract theory originates in some failures of general equilibrium theory. In fact, whereas general equilibrium theory is one of the most impressive achievements in the history of economic thought (Salanie 1997, p. 1), it appeared that this model was not a fully satisfactory descriptive tool. Among the limitations was the fact that agents were assumed to interact through the price system. This limitation made it difficult to consider models of firms and other economic institutions because, according to Coase (1937), "the distinguishing mark of the firm is the supersection of the price mechanism". Information asymmetry was another limitation for general equilibrium models (Salanie 1997). In fact, although Arrow and Debreau showed how it is possible to extend the general equilibrium theory[1] to cover uncertainty as long as information remains symmetric, often in economic interactions information asymmetries are pervasive. For example, the principal may not be able to observe the action of the agent, employees know more about their cost than employers, or the abilities of a worker may be difficult to observe when the principal is designing an incentive scheme. Some authors provide a classification of asymmetric problems to identify the influence of the nature of the distribution of information about important aspects of the relationship [see for example Macho-Stadler and Pérez-Castrillo (1997) or Laffont and Martimort (2002)]. Economists have created a collection of models to simplify the study of bargaining under asymmetric information by allocating all bargaining power to one of the parties (Salanie 1997). As Baron and Kreps (1999) point out, this collection of models is called *principal-agent model*, *agency theory* and *economic theory of incentives*.

Many kinds of incentive problems can be modeled using a common framework which can adapt to several different situations. Since the focus of this chapter is HRM, we will consider the two parties to be an employer and an employee. Remaining in the focus of HRM, the employer may be a manager hiring a worker or a company owner hiring a manager (Bolton and Dewatripont 2005) but the number of applications is really wide; for instance, agency theory has been used also to address outsourcing relationships (Logan 2000). A simple example of the principal-agent problem is that of an employer who wants the employee to exert as much effort as possible, in order to produce as much output as possible, although

[1] For a concise introduction to Arrow-Debrau model of general equilibrium, the reader may refer to Geanokoplos (2004).

the employee rationally wants to make a choice that maximizes his own utility given the effort and incentive scheme. This conflict between the employer and the employee is more evident assuming that the connection between time and effort exerted by the employee and the results in terms of output are not entirely under his control. Assuming that the effort is not directly measurable, while the employee prefers to be paid according to the hours worked, the employer would like to pay according to the employee's output.

From the technical point of view, as Salanie (1997) observes, the principal-agent model is a Stackelberg game in which the one who proposes the contract—the leader—is called the principal and the party who has to accept or reject the contract—the follower—is called the agent.

The basic model of agency relies on three more or less implicit assumptions which, in the case of our example, can be expressed as follows:

1. The employee is averse to the effort. For example, if he is paid on a per-unit-of-time basis, he will choose to exert the lowest level of effort which still allows him to be paid.
2. The employee is risk-averse. That is, if the employee were risk-neutral he would bear all the risks and would completely internalize all the consequences of his choices of effort.
3. The parties cannot contract on the level of effort. In this case, if the employer were risk neutral, she would pay the employee a wage depending simply on the effort, and therefore obtain the efficient outcome.

For a thorough discussion of these assumptions the reader may refer to Baron and Kreps (1999).

Furthermore, as in most Economics literature, strong assumptions on rationality of actors are made; as a fact, Bolton and Dewatripont (2005, p. 5) clearly state "we shall assume that contracting parties are rational individuals who aim to achieve the highest possible payoff". It must be noted that this is the common approach for Economics when analyzing human resources and compensation issues. For example, Milgrom and Roberts (1992, p. 326) state "we assume rational and largely self-interested behavior; we presume that people seek efficient solutions to the problems they face". Whereas, on the one side, this assumption is necessary as a starting point, it is in strong contrast with empirical evidence. The recent interest in Behavioral Economics and the empirical evidence of experimental economics challenge this assumption (for a survey of recent developments the reader may refer to Della Vigna 2009). Yet, as it concerns behavior in organizations, Simon (1997) considers distinct types of rationality and provides some motivational links between the individual and the organization explaining how organizational influences may be effective forces in molding human behavior. Furthermore, his principle of bounded rationality contrasts the above assumptions: "The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behavior in the real world- or even for a reasonable approximation to such objective rationality" (Simon 1957, p. 198).

Several experiments in the Economics and Psychological literature provide evidence that individuals show a concern for the welfare of others (Fehr and Gächter 2000; Charness and Rabin 2002). Finally, there is evidence that individuals may decide to pay some of their own money in order to reduce other's money (Zizzo and Oswald 2001; Divotti and Merlone 2011). Another field evidence shows how individuals use heuristics to solve complex problems (Gabaix et al. 2006) and are affected by emotions in their decisions (Loewenstein and Lerner 2003).

In particular, some field evidence is quite interesting as it concerns workplace relations. Mas (2006) studies the impact of reference points for the New Jersey Police with a relationship between police pay and the share of solved crimes; Krueger and Mas (2004) examine how the quality of tyres produced at a unionized Bridgestone-Firestone plant is affected by a 3-year period of labor unrest; Bandiera et al. (2005) use personnel data from a fruit farm in the United Kingdom to analyze the impact of social preferences in the workplace among employees.

The evidence of the nonstandard behavior of employees—in the sense of the economic theory assumptions—raises the question of how rational agents should respond to the nonstandard behaviors of the others. DellaVigna (2009) discusses this question considering several fields: Industrial Organization, Labor Economics, Finance, Corporate Finance Political Economy, and Institutional Design.

Even before the recent interest in Behavioral Economics some authors were well aware of the noneconomic aspects to be taken into account when considering compensation and motivation. For instance, Baron and Kreps (1999) list and discuss the following aspects:

- Distributive and procedural justice: the perceived fairness of outcomes and of the processes by which the outcomes are determined influence the overall perception of what is fair in the workplace. According to Robbins and Judge (2009) distributive justice relates most strongly to the satisfaction of the outcomes and organizational commitment, whereas procedural justice is most strongly related to job satisfaction, employees trust, and citizen behavior.
- Social comparison: individuals' feelings about how fairly they are treated as compared to others. In particular Adams' (1965) equity theory is one of the most popular cognitive explanations of human behavior in work organizations.
- Social status: a socially defined position rank given to groups or group members by others; compensation should be consistent and even reinforce social status.
- Culture: the set of key values, assumptions, beliefs, understanding and norms that is shared by members of an organization (Daft and Noe 2001). Compensation policy should be consistent with the organization's culture, for example in an organization that promotes a familiar culture a strongly meritocratic incentive compensation system may be inappropriate.
- Intrinsic reward: refers to the satisfaction a person receives when performing a particular task or action or coming from the achievement of a goal. Sometimes extrinsic incentives can be counterproductive as in particular cases they may dull intrinsic motivation.

3 Incomplete Contracts

Although several contributions in contract theory assume that contracts are signed taking into account all variables that are or may become relevant—contract completeness—more recent developments analyze the effects of parties' inability to write contracts that take into account all possible contingencies.

Simon recognizes that contracts do not specify everything; in fact, he considers that "in an employment contract certain aspects of the worker's behavior are stipulated in the contract terms, certain other aspects are placed within the authority of the employer, and still other aspects are left to the worker's choice." (Simon 1951, p. 305).

This is well known in industrial/organizational psychology literature, Viteles (1932) argued that, although a company pays the same for labor, the outcome depends also on the employees working "with a will". Nevertheless, it took some time for this notion to be incorporated in Economics.

More recently, the important implications of incomplete contracting have been recognized both in terms of the efficiency of long-term economic relationships and as a possible explanation for the emergence of certain types of institutions such as the firm (see, e.g., Williamson 1985; and Klein et al. 1978).

In their 1988 seminal paper[2] Hart and Moore argue that the drafters of a contract face the difficult task of anticipating and dealing appropriately with the many contingencies which may arise during the course of their relationship. All things considered, as it may be prohibitively costly to specify the precise actions that each party should take in every conceivable eventuality, the contract which is written ends up being highly incomplete. As a consequence, Hart and Moore (1988) introduced the notion of contract incompleteness in order to take into account the impossibility for the parties to describe all of the states of the world in enough detail to later allow an outsider—for example a court—to verify which state had occurred. In other words, they acknowledge that it is impossible to sign a contract today that will be effective of all contingencies of a future date (Holmstrom and Tirole 1989).

Hart (1995, p. 23) argues that contracts may be incomplete as a consequence of three factors which are not considered in the standard principal-agent theory. First, given the complexity and unpredictability of the real word, it is difficult for individuals to predict all the contingencies which may arise in a future date. Second, even if it were possible to formulate individual plans it would be difficult for the contracting parties to find a common language to describe the states of the world and therefore to be able to negotiate these plans. Third, even if the parties could plan and negotiate the future contingencies, it would be difficult for them to write their plans in such a way that an outside authority can enforce them in the case of a dispute.

[2] Actually incomplete contracts are already considered in Grossman and Hart (1986).

According to Bolton and Dewatripont (2005), the introduction of incomplete contracts involves a substantive break. In fact, they argue, an incomplete-contracting perspective enables the focus on procedural and institutional-design issues instead of issues of compensation contingent on outcomes. Furthermore, another important issue raised by the incomplete-contract theory is the importance of the *ex ante* noncontractable actions. Maskin and Tirole (1999a, 1999b) have observed that, under certain conditions, *ex ante* non contractability of actions does not restrict implementability. Maskin and Tirole (1999a) argue that transaction costs—which usually lead to contractual incompleteness—need not to interfere with optimal contracting, provided that agents can probabilistically forecast at least their possible future payoffs. By contrast, Segal (1999) considers a situation in which even if contingencies cannot be described *ex ante*, parties cannot commit not to renegotiate, and only a finite number of actions can be described *ex post*, the first-best outcome cannot be achieved. Finally, Hart and Moore (1999), based on Segal's (1999) work, consider a hold-up problem and show that the first-best outcome may be unattainable even if states can be costlessly described *ex ante*.

The hold-up problem occurs in situations in which specific investments are observable by both parties but are nonverifiable and the cost of investment is born by the party who makes it. Although the investment will make both parties work more efficiently, they will refrain from doing so due to concerns that the investment may give the other party increased bargaining power, and thereby reduce their own profit. The hold-up problem is particular relevant to firms and often is exemplified by the 1920s relationship between Fisher bodies and General Motors (see, Klein et al. 1978). Nevertheless, it is also relevant to HRM as many investments—especially in human capital—are nonverifiable; therefore parties fearing to be expropriated of the surplus created by such specific investments tend to underinvest.

According to Gigerenzer and Todd (1999), in Simon's principle of bounded rationality there are two interlocking components: the structure of the environments in which the mind operates and the limitation of the human mind. Contract incompleteness takes these two aspects into account; yet even if bounded rationality in incomplete contracts has been discussed extensively (e.g., Hart 1990, and Tirole 2007, 2009), its role in modern organizational economics is still controversial; for a discussion see Foss (2001, 2003).

4 Contracts as Reference Points

Hart and Moore (2008) introduce an interesting behavioral hypothesis in contract theory. In their model they assume that an *ex ante* contract provides a reference point relative to which the parties evaluate *ex post* outcomes. In their model, a buyer and a seller meet on a competitive market before moving into a bilateral relationship. In the first stage they write an incomplete contract as there is

uncertainty about the state of nature. In the second stage, the uncertainty is resolved and the parties observe the state but—in contrast to most of the existing literature—the trade does not become fully contractible *ex post*. To be more specific they assume that, although the broad outlines of *ex post* trade are contractible, the finer details are not. The change from the perfectly competitive market of the first stage to the bilateral monopoly is what Williamson (1985) terms a "fundamental transformation"; according to Hart and Moore (2008) potential candidates to explain the fundamental transformation are relationship specific investments or *ex post* search costs for alternative partners.

By assuming that *ex post* trade is only partially contractible Hart and Moore (2008) allow the seller to choose between two kinds of performance: perfunctory and consummate. The first one refers to performance within the letter of the contract; on the contrary consummate performance refers to performance within the spirit of the contract. In other words a gap remains between two levels of performance. Furthermore, they assume that whereas perfunctory performance can be judicially enforced consummate performance cannot. Finally, they suppose that a party provides consummate performance if he feels that he is getting what is he is entitled to, otherwise he will stint on the perfunctory performance. Hart and Moore (2008) use the term "shading" to indicate situations in which a party withholds some part of performance; they also assume that in terms of cost a party is completely indifferent between providing consummate and perfunctory performance.

In Fig. 1 we illustrate the three levels of complexity that make contracts incomplete. The larger triangle represents all the situations for which the parties may decide to try to write a contract. The left part of the triangle represents the situations for which it is impossible to predict all the contingencies which may arise in a future date. The right-hand triangle, by contrast, represents the situations for which the parties are able to predict all the contingencies. The right part of this triangle represents the situations in which the parties are able to predict the contingencies but are unable to negotiate them. The lower triangle represents the situations for which parties are able to predict all contingencies and to negotiate

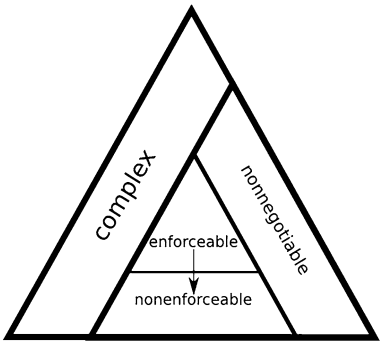

Fig. 1 Levels of complexity for incomplete contracts

about. In the lower part of the triangle there are the situations for which the parties are able to predict the contingencies, are able to negotiate, but are unable to write their plans in such a way that an outside authority can enforce them in the case of a dispute. Finally, the central triangle represents the situations that are simple enough that the parties can write a complete contract. The small arrow represents the fact that the *ex ante* contract is just a reference point and the consummate performance cannot be judicially enforced.

It must be noted that both parties—the buyer and the seller—are allowed to shade. Although for the seller it seems more natural, being an example "working through the rules", also the buyer can shade, for example, stinting on what the seller needs to provide his performance.

Hart and Moore (2008) argue that the move from an *ex ante* competitive market to an *ex post* bilateral setting provides a rationale for the idea that contracts are reference points.

As the authors acknowledge there are several assumptions that need to be relaxed in this model, for example, the assumption that parties are interested only in the outcome and not in the process does not take into account the contributions of the procedural justice literature (Leventhal et al. 1980); this is an important point both in terms of retaliation on the workplace (Skarlicki and Folger 1997) and of organizational citizenship behavior (Moorman et al. 1998) which are important aspects related to counterproductive work behavior (Fox et al. 2001). Furthermore, even if the literature considers mainly relationships between two parties—the employee and the employer—justice has a huge impact on work group efficacy, see, e.g., Cropanzano and Schminke (2001). Since groups, rather than individuals, are the fundamental unit of work in modern organizations (Finholt and Sproull 1990) the importance of this topic cannot be overlooked.

Some experimental evidence about Hart and Moore's (2008) model is provided in (Fehr et al. 2011). They tested the main features of the model in a laboratory experiment and are able to confirm the empirical relevance of the behavioral forces described in Hart and Moore (2008) when a fundamental transformation takes place.

Furthermore, in Fehr et al. (2009), experimental analysis is extended to understand the role of fundamental transformation. Their laboratory evidence shows that, in the absence of a fundamental transformation, contracts no longer provide reference points as the sellers no longer perceive the contracts in these terms. In this case, since the contract loses this role other variables need to be considered in order to fill this gap.

Nevertheless, Hart and Moore (2008) bring a totally new perspective in incomplete contracts literature; in fact, in their view, a contract provides a reference point for the trading relationship and what the parties feel entitled to. Also, the entitlement ensued by the contract limits disagreement, aggrievement, and the consequences of shading. Their model sheds lights on how the gaps of incomplete contracts may be filled either by courts or—as we will suggest—by other constructs such as the psychological contract.

5 Psychological Contract

In the Industrial/Organizational literature, it is well known that successful firms depend on workers who voluntarily cooperate and that formal control systems are not able to compel critical workers contributions (Rousseau 2010). Evidence of this problem is well known, for example Smith (1977) provides empirical evidence showing how employees who are more satisfied with their job are more likely to exert a discretionary effort, or—using Hart and Moore terminology—to provide a consummate performance instead of a perfunctory one.

The interest in the construct of the psychological contract by I/O psychologists arises from the necessity to face this kind of dilemma central to the individual-organization exchange relationship.

The term "psychological contract", was first introduced by Argyris (1960) to describe the relationship between factory line employees and their foremen; then Levinson (1962) expanded its definition and Schein (1965) provided a different perspective.

Later, Kotter (1973) defined it as "an implicit contract between an individual and his organization which specifies what each expect to give and receive from each other in their relationship".

Rousseau's (1989) contribution was a transition point; in her paper, the author defined a psychological contract as "an individual's belief regarding the terms and conditions of a reciprocal exchange agreement between that focal person and another party" (p. 123). Furthermore—she continues—a psychological contract emerges when an individual perceives that contributions he or she makes obligate the organization to reciprocity or vice versa. Therefore—by definition—a psychological contract is the perception of an exchange between oneself and another party (Rousseau 1998).[3]

Some critical aspects of the psychological contract have been pointed out especially when research departed from the collective conceptualization of a joint "psychological contract" between the two parties (see for example Guest 1998). These aspects have been discussed in Rousseau (1998). Furthermore, integrating the individual level perspective—in terms of the individual's system of beliefs—has provided a better understanding of the separate and joint effects of psychological contracts (Rousseau 2010).

In terms of incompleteness, there is an interesting symmetry between the psychological contract and the recent developments of contract theory we discussed in the previous section. In fact, as Rousseau (2010) suggests, at hire also psychological contracts suffer from the incapacity of the parties to spell out all of the details of the relationship. Although the reasons for incompleteness of the psychological contract are similar to those considered in Hart (1995) and discussed

[3] The reader interested in a historical analysis of the psychological contract may refer to Roehling (1997); Rousseau (2010) provides also an analysis of the cognitive, emotional, and behavioral processes underlying it.

in the previous sections, psychological contracts evolve over time as new demands modify the relationship. Another important point is that psychological contracts vary across firms and workers. According to Rousseau (2010) they can vary from considering only economic terms—and in this case are quite similar to contracts considered in the economic theory—to being extremely complex, as in the case of high-involvement work.

Two aspects of the psychological contract are important especially when compared to the assumptions of economic theory. First, according to Rousseau (2010), a stable contract promotes goal-oriented behaviors and does not require heavy control and monitoring from the employee. Second, the process by which a psychological contract is transformed must be carefully monitored to avoid the risk of contract breach and violation.

6 Putting the Pieces Together

As we have seen, both Economics and Psychology agree—even if from slightly different perspectives—that contracts are not complete. In fact, whereas Economics acknowledges incompleteness as the result of the complexity of the world, and analyzes the consequence of such an incompleteness from the point of view of renegotiation costs (Hart 1995), in Psychology the psychological contract is what provides the fleshing out of the otherwise incomplete arrangements between employees and firm (Rousseau 2010). Both disciplines agree on the impossibility of spelling out the details of an employment relationship: "changing circumstances mean that not all contingencies can be foreseen" (Rousseau 2010, p. 198) and "it is hard for the contracting parties to *negotiate* these plans, not least because they have to find a common language to describe states of the world and actions with respect to which prior experience may not provide much of a guide. […] even if the parties can plan and negotiate the future, it may be very difficult for them to write the plans down in such a way that in the event of a dispute, an outside authority -a court, say, can figure out what these plans mean and enforce them" (Hart 1995, p. 23).

Furthermore, even if psychological contracts tend to be incomplete at the beginning of the outset and tend to evolve over time as the relationship develops (Rousseau 2010) their evolution may allow the parties to adapt to the new contingencies. By adding the perspective of the psychological contract to economic analysis of contracts it is possible to obtain a new dimension to HRM. Indeed we can think that when the psychological contract considers only the economic aspects of the relationship it may be considered as equivalent to an economic contract as illustrated in Fig. 2a). In this case it covers more or less the simpler situations which can be formalized by complete contracts. On the contrary, when the relationship evolves and the psychological contract expands as the result of the new contingencies, it may become a tool to cover also situations which are either nonenforceable or non negotiable or even more complex ones. This aspect is

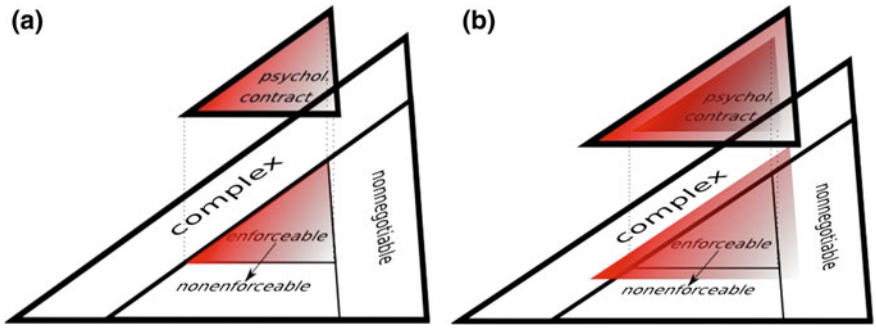

Fig. 2 **a** The psychological contract at the beginning, **b** as it expands over time

related to time and dynamics processes; it may be also referred to what Binmore (1992) calls adjusting to circumstances.[4] In fact two aspects that are central to our analysis are bounded rationality and dynamical processes. The first aspect clearly refers to the incapacity of parties to write a complete contract and the other to evolution of psychological contracts (Rousseau 2010).

As we have seen, Hart and Moore (2008) introduce the assumption that *ex ante* contracts provide reference points for entitlements in *ex post* trade. This approach is not only interesting per-se but especially when contrasted with the literature on psychological contract. In fact, at the outset of the employment both the psychological and formal contracts become the core and the reference point around which the working relationship is built.

According to Loch and Wu (2007) "it is evident that the normative models based on hyper-rationality assumptions, which are popular in OM research, may not help much in the complex reality". The same authors also observe how "Camerer's (1999) diagnosis of incompleteness of economics and both its complementarity with and separatedness from psychology closely parallels the history of Operations Management and Organizational Behavior". Considering the fundamental cognitive processes operating on the thinking and behavior of the parties may provide a partial solution to the issues arising from the complexity of the world. In this sense, the psychological contract complements the approach used in Economics as it considers the mental operations involving emotional and non-emotional processes, which are otherwise neglected.

7 Conclusion

Disciplines with a long history of separateness are studying the same problems from different perspectives. Examples are OM and HRM. As Boudreau et al. (2003) observe, in industry it has been rare for an operations manager to become a

[4] I am grateful to Gian-Italo Bischi for providing this insight.

human resources manager, or vice versa, and in academia the two subjects have been studied by essentially separate communities of scholars who publish in nearly disjoint sets of journals. A similar situation can be found considering Economics and Psychology. Both approach human behavior but the points of view are often polar. Some notable exceptions are Nobel laureates in Economics who were psychologists, namely Herbert Simon and Daniel Kahneman.

Yet, recently, we can observe a sort of parallel motion as couples of disciplines—OM and HRM, and Economics and Psychology—are converging to some common interest topics. Recent contributions in Operations Management challenge the assumptions requiring people to be deterministic, predictable, and emotionless (see Boudreau et al. 2003; Loch and Wu 2007). On the other side, Behavioral Economics challenges and relaxes some of the neoclassical assumptions on individuals, mainly the one according to which people are self-interested rational agents with stable preferences.

In my opinion, a promising area for a multiple perspective approach is work relationships. Simon's (1951) analysis outlined "the assumptions of rational utility-maximizing behavior incorporated in it" as one of the main limitations of the current view of labor management. In the following years several authors provided interesting contributions on these topics; nevertheless the hyper-rationality assumptions are still popular both in OM (Loch and Wu 2007) and in Economics (Bolton and Dewatripont 2005).

Both formal contracts—in the sense of Economics—and psychological contracts are instruments useful to obtain the critical commitment which may make the difference between the success or failure of a firm. Contract incompleteness has been recognized in Economics; this contribution shows how psychological contracts may be interpreted as a way to fill the gaps of contracts. In particular, psychological contracts fill these gaps considering human behavior in organizations by building upon fundamental processes that are not usually considered in Economics. Given the recent interest Economics has in considering behaviors which go beyond the *Homo Oeconomicus* paradigm and recent contributions of Behavioral Operation Management these aspects, seem to be relevant to approach these important issues.

The road is long and a first suggestive hypothesis is to see psychological contract and contract theory as a way to gain employees' commitment. Although these two approaches are for the most self-centered on the disciplines they belong to a wider scope approach which is in order. In this way we can avoid being trapped in the assumptions that characterize the different disciplines.

Finally, it must be mentioned that in this analysis we did not consider the useful contributions made by scholars of other disciplines. For example, contract incompleteness has been considered in the Industrial Relations literature by other authors such as Marsden (2004) and also by Collins (2001, p. 23) who argued that "the model of the employment contract that fits into this traditional scheme is the contract that is incomplete by design".

Adding the perspective coming from other fields that have extensively been working on contracts may add new insight. In particular, integrating and

articulating psychological, economic/incentive, and legal aspects of contracts in terms of contract breach and renegotiation can suggest how to approach the complexity of working relationships.

References

R.L. Ackoff, Science in the systems age: beyond IE, OR, and MS. Oper. Res. **21**(3), 661–671 (1973)

J.S. Adams, Inequity in social exchange, in *Advances in Experimental Social Psychology*, ed. by L. Berkowitz (Academic Press, New York, 1965), pp. 276–299

C. Argyris, *Understanding Organizational Behavior* (Dorsey Press, Homewood, 1960)

O. Bandiera, I. Barankay, I. Rasul, Social preferences and the response to incentives: evidence from personnel data. Quart. J. Econ. **120**(3), 917–962 (2005)

J.N. Baron, D.M. Kreps, *Strategic Human Resources* (Wiley and Sons, New York, 1999)

K. Binmore, *Fun and Games. A Text on Game Theory* (Heath and Co, Lexington, 1992)

R. Birnbaum, The life cycle of academic management fads. J. High. Educ. **71**(1), 1–16 (2000)

P. Bolton, M. Dewatripont, *Contract Theory* (The MIT Press, Cambridge, 2005)

J. Boudreau, W. Hopp, J.O. McClain, L.J. Thomas, On the interface between operations and human resources management. Manuf. Serv. Oper. Manag. **5**(3), 179–202 (2003)

C. Camerer, Behavioral economics: reunifying psychology and economics, in *Proceedings of the National Academy of Science USA*, vol. 96 (USA, 1999), pp. 10575–10577

P.P. Carson, P.A. Lanier, K.D. Carson, B.N. Guidry, Clearing a path through the management fashion jungle: some preliminary trailblazing. Acad. Manag. J. **43**(6), 1143–1158 (2000)

G. Charness, M. Rabin, Understanding social preferences with simple tests. Quart. J. Econ. **117**(3), 817–869 (2002)

R.H. Coase, The nature of the firm. Economica **4**(16), 386–405 (1937)

H. Collins, Regulating the employment relationship for competitiveness. Indus. Law J. **30**(1), 17–47 (2001)

R. Cropanzano, M. Schminke, Using social justice to build effective work groups, in *Groups at Work: Advances in Theory and Research*, ed. by M. Turner (Erlbaum, Hillsdale, 2001), pp. 143–171

R.L. Daft, R.A. Noe, *Organizational Behavior* (South-Western Publishing, Mason, 2001)

G.J. DeAngelo, S. Beckman, L. Chen, J.W. Smith, X. Zhang, *Microeconomics and psychology*. SSRN, http://ssrn.com/abstract=1893788. Accessed 23 July 2011

S. DellaVigna, Psychology and economics: evidence from the field. J. Econ. Lit. **47**(2), 315–372 (2009)

G. Divotti, U. Merlone, in *Envy and Money Burning: Some Contradictory Evidence.* Paper presented at the envy at work international symposium (Torino, Italy, 2011)

E. Fehr, S. Gächter, Fairness and retaliation: the economics of reciprocity. J. Econ. Perspect. **14**(3), 159–181 (2000)

E. Fehr, O. Hart, C. Zehnder, Contracts, reference points, and competition-behavioral effects of the fundamental transformation. J. Eur. Econ. Assoc. **7**(2–3), 561–572 (2009)

E. Fehr, O. Hart, C. Zehnder, Contracts as reference points—experimental evidence. Am. Econ. Rev. **101**, 493–525 (2011)

T. Finholt, L.S. Sproull, Electronic groups at work. Organ. Sci. **1**(1), 41–64 (1990)

N. Foss, Bounded rationality in the economics of organization: present use and (some) future possibilities. J. Manage. Governance **5**(3–4), 401–425 (2001)

N. Foss, Bounded rationality in the economics of organization: much cited and little used. J. Econ. Psychol. **24**(2), 245–264 (2003)

S. Fox, P.E. Spector, D. Miles, Counterproductive work behavior (CWB) in response to job stressors and organizational justice: some mediator and moderator tests for autonomy and emotions. J. Vocat. Behav. **59**(3), 291–309 (2001)
X. Gabaix, D. Laibson, G. Moloche, S. Weinberg, Costly information acquisition: experimental analysis of a boundedly rational model. Am. Econ. Rev. **96**(4), 1043–1068 (2006)
J. Geanokoplos (2004), The Arrow-Debreau model of general equilibrium. (Cowles Foundation Paper 1090). Yale University, New-Haven, CT, http://cowles.econ.yale.edu/P/cp/p10b/p1090.pdf. Accessed 14 Feb 2012
G. Gigerenzer, P.M. Todd, Fast and frugal heuristics, in *Simple Heuristics that make us Smart*, ed. by G. Gigerenzer, P.M. Todd, ABC Research Group (Oxford University Press, Oxford, 1999), pp. 3–34)
S.J. Grossman, O.D. Hart, The costs and benefits of ownership: a theory of vertical and lateral integration. J. Polit. Econ. **94**(4), 691–719 (1986)
D.E. Guest, Human resources management and industrial relations. J. Manage. Stud. **24**(5), 503–521 (1987)
D.E. Guest, Is the psychological contract worth taking seriously? J. Organ. Behav. **19**, 649–664 (1998)
O.D. Hart, Is "bounded rationality" an important element of a theory of institutions? J. Inst. Theor. Econ. **146**(4), 696–702 (1990)
O.D. Hart, *Firms contracts and financial structure* (Oxford University Press, Oxford, 1995)
O.D. Hart, J. Moore, Incomplete contracts and renegotiation. Econometrica **56**(4), 755–785 (1988)
O.D. Hart, J. Moore, Foundations of incomplete contracts. Rev. Econ. Stud. **66**(1), 115–138 (1999)
O. D. Hart, J. Moore, Contracts as reference points. *Q. J. Econ*. **CXXIII**(1), 1–48 (2008)
B. Holmström, J. Tirole, The theory of the firm, in *Handbook of Industrial Organization*, ed. by R. Schmalensee, R.D. Willig, vol. I (North-Holland, Amsterdam, 1989), pp. 61–133
B. Klein, R. Crawford, A. Alchian, Vertical integration appropriable rents, and the competitive contracting process. J. Law Econ. **21**, 297–326 (1978)
J.P. Kotter, The psychological contract. Calif. Manage. Rev. **15**, 91–99 (1973)
A.B. Krueger, A. Mas, Strikes, scabs, and tread separations: labor strife and the production of defective bridgestone/firestone tires. J. Polit. Econ. **112**(2), 253–289 (2004)
J.J. Laffont, D. Martimort, *The Theory of Incentives* (Princeton University Press, Princeton, 2002)
K. Legge, *Human Resource Management. Rhetorics and Realities*, Anniversary edn. (Palgrave MacMillan, Basingstioke, 2005)
G.S. Leventhal, J. Karuza Jr., W.R. Fry, Beyond fairness: a theory of allocation preferences, in *Justice and Social Interaction,* ed. by G. Mikula. Experimentation and Theoretical Research from Psychological Research (Plenum, New York, 1980), pp. 167–218
H. Levinson, *Organizational Diagnosis* (Harvard Univ. Press, Cambridge, 1962)
C.H. Loch, Y. Wu, Behavioral operations management. *Found. Trends Technol. Inf. Oper. Manag*. **1**(3), 121–232 (2007). http://dx.doi.org/10.1561/0200000009
G. Loewenstein, J.S Lerner, *The role of affect in decision making*. ed. by R. Davidson, H. Goldsmith, K. Scherer, Handbook of Affective Science. (Oxford: Oxford University Press, 2003), pp. 619–642
M.S. Logan, Using agency theory to design successful outsourcing relationships. Int. J. Logist. Manag. **11**(2), 21–32 (2000)
I. Macho-Stadler, D. Pérez-Castrillo, *An Introduction to the Economics of Information* (Oxford University Press, New York, 1997)
D. Marsden, The network economy and models of the employment contract. Br. J. Indus. Relat. **4**(4), 659–684 (2004)
A. Mas, Pay, reference points, and police performance. Quart. J. Econ. **121**(3), 783–821 (2006)
E. Maskin, J. Tirole, Unforeseen contingencies and incomplete contracts. Rev. Econ. Stud. **66**, 83–114 (1999a)

E. Maskin, J. Tirole, Two remarks on the property-right literature. Rev. Econ. Stud. **66**, 139–149 (1999b)
P.R. Milgrom, J. Roberts, *Economics Organization and Management* (Prentice Hall, Englewood Cliffs, 1992)
R.H. Moorman, G.L. Blakely, B.P. Niehoff, Does perceived organizational support mediate the relationship between procedural justice and organizational citizenship behavior? Acad. Manag. J. **41**(3), 351–357 (1998)
S.P. Robbins, T.A. Judge, *Organizational Behavior*, 13th edn. (Pearson Education, London, 2009)
M.V. Roehling, The origins and early development of the psychological contract construct. J. Manag. Hist Arch. **3**(2), 204–217 (1997)
D.M. Rousseau, Psychological and implied contracts in organizations. Empl. Responsib. Rights J. **2**(2), 121–139 (1989)
D.M. Rousseau, The problem of psychological contract considered. J. Organ. Behav. **19**, 665–671 (1998)
D.M. Rousseau, The individual-organization relationship: the psychological contract, in *APA Handbook of Industrial and Organizational Psychology*, vol. 3, Maintaining, Expanding, and Contracting the Organization, ed. by S. Zedeck (American Psychological Association, Washington, DC, 2010), pp. 191–210
B. Salanie, *The Economics of contracts. A Primer* (The MIT Press, Cambridge, 1997)
E.H. Schein, *Organizational Psychology* (Prentice Hall, Englewood Cliffs, 1965)
R.G. Schroeder, *Operations Management: Decision Making in the Operations Function*, 4th edn. (McGraw-Hill, Singapore, 1993)
I. Segal, Complexity and renegotiation: a foundation for incomplete contracts. Rev. Econ. Stud. **66**(1), 57–82 (1999)
H.A. Simon, A formal theory of the employment relationship. Econometrica **19**(3), 293–305 (1951)
H.A. Simon, *Models of Man* (John Wiley & Sons, New York, 1957)
H.A. Simon, *Administrative Behavior*, 4th edn. (Free Press, New York, 1997)
F.J. Smith, Work attitudes as predictors of attendance on a specific day. J. Appl. Psychol. **62**, 16–19 (1977)
V.L. Smith, Review: rational choice: the contrast between economics and psychology. J. Polit. Econ. **99**(4), 877–897 (1991)
D.P. Skarlicki, R. Folger, Retaliation in the workplace: the roles of distributive, procedural, and interactional justice. J. Appl. Psychol. **82**(3), 434–443 (1997)
J. Tirole, Bounded rationality and incomplete contracts (2007). University of Toulouse,. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.123.5630&rep=rep1&type=pdf
J. Tirole, Cognition and incomplete contracts. Am. Econ. Rev. **99**(1), 265–294 (2009)
M.S. Viteles, *Industrial Psychology* (Norton, New York, 1932)
O. Williamson, *The Economic Institutions of Capitalism* (Free Press, New York, 1985)
J. Zizzo, A.J. Oswald, Are people willing to pay to reduce others' incomes? Annales d'Économie et de Statistique **63**(64), 39–65 (2001)