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**GOOD *LAW & ECONOMICS* NEEDS
SUITABLE MICROECONOMIC MODELS:
THE CASE AGAINST THE APPLICATION
OF STANDARD AGENCY MODELS TO
THE PROFESSIONS**

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by
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ABSTRACT

Notwithstanding its widespread acceptance in the law & economics literature, agency theory could not be in general the most suitable microeconomic modeling for designing efficient and fair economic transactions and institutions. The case against the standard principal-agent modeling is made about liberalizations of professional services that introduced schemes of professionals' remuneration contingent on outcomes – i.e. "contingent fees" for lawyers. If the relationship between the professional and clients is seen according to the *principal-agent* model, contingency fees can be economically justified as an efficient incentive for the professional's effort. The case is quite different, however, if the situation is seen as one of bounded rationality and unforeseen and asymmetrically gathered events. Remunerations contingent on outcomes in these contexts can generate pathological incentives.

This paper argues that the professional relationship is an *authority relationship* based of *contractual incompleteness*, which requires the reliance on trustworthiness of the authority position's holder. Hence I propose a model for understanding the professional relationship which extends the "formal vs. real authority" model proposed a few years ago by Aghion and Tirole (1997). This leads to underline the essential role played by behavioral hypothesis on professionals' "endogenous" adherence to ethical standards that prevent conflict of interests and induce the professional's identification with her clients' interests, based on reciprocity and conformist preferences.

A game theoretical *thought experiment* aimed at checking the case for or against using agency models in modeling the professional relationship is then carried out. It shows that (i) in the case of a self-interested lawyer, notwithstanding that utilitarian efficiency is safeguarded, contingent fees leads to not respecting the fiduciary obligations with at least one client (to detriment of Pareto optimality and impartial and loyal treatment of all clients) for only the *ex post* mostly remunerative cases are litigated. (ii) In the case of the lawyer's willingness to comply with deontology standards - requiring impartial protection of all the clients' rights, under a condition of minimal individual rationality - contingent fees lead nevertheless to neutralization of the deontological motivation and to a loss of efficiency in utilitarian sense. A Pareto optimal, impartial, as well as efficient, arrangement aimed at maximizing the total volume of damage compensation is then considered. Nevertheless the main result is that under a contingent fee contract, even if these motivations were available, the professional could not carry out them because the logic of the contract doesn't allow pooling different cases' damage compensations in order of carrying out redress across the lucky and unlucky clients.

Keywords: lawyers' contingent fees, principal-agent, incomplete contracts, authority, professional ethics, fiduciary duties, reciprocity, conformist preferences.

Good *Law & Economics* needs suitable microeconomic models: the case against the application of standard agency models to the professions

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1. Introduction

Economic analysis of the law aims at understanding whether legal rules are designed as adequate mechanisms of incentive strong enough to induce economic agents (for example firms, workers, tax payers or professionals) to efficiently contribute to the creation of wealth, a productive activity, producing a public good or the reduction of a public bad or a risk.

One basic idea is that the law doesn't reach its goal directly but rather through affecting the economic agents' choices. They interact under the conditions put in place (in part) by a legal framework (and in part they react to these constraints) as far as economic agents are seen as (bounded) rational players participating in a game where the law sets the rules but doesn't uniquely determine outcomes. Outcomes are produced by how economic agents make their choices under the constraints set (or by taking advantage of the opportunities posted) by the rules - *inter alia*. Thus, legal rules may generate the effects a legislator desires - if it was a wise "designer", but also unexpected outcomes in the case that actual incentives and opportunities of action weren't appropriately considered. The result will be consequently a "(Nash) equilibrium induced by the rules" (since the law influences the "rules of the game"), but not univocally determined because only the convergence of the players' learning and expectations toward a particular equilibrium point can explain why a given equilibrium has been reached, especially if multiple equilibriums are possible.

Obviously, the purpose of such an analysis is not just predictive. It has instead a clear normative intent: optimal designing the economic game - through incentives and constraints laid down by the law - by which a social welfare objective is indirectly reached. A *well* designed legal rule should define a game wherein an equilibrium is

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reached which corresponds to a social state such that some welfare properties desired by the legislator are satisfied — taking for granted that only equilibria in the interactions among agents will constitute stable social states, but equilibria don't necessarily satisfy the welfare properties that a legislator may desire.

Nothing but an ideological prejudice (and a biased reading of the *Coase Theorem*) can lead to the conclusion that setting up a “market” is the only welfare aim that a legal rule can pursue. Here assumed is that the established market will resemble a situation of “perfect competition” closely enough that its equilibria will be socially efficient resource allocations. However, understanding legal rules as rules of a *game* (that is rules for strategic interaction) should suggest on the contrary that a perfect competitive market (or a close approximation to it) *could not exist* for any matter under consideration. The legislator's welfare objective (for example the cooperative production of a *surplus* of social welfare through *idiosyncratic* relations and its *fair* distribution—objectives that aren't typically pursuable simply through a competitive market and are surely failed by imperfectly competitive market, but rather may be pursued through organized forms of cooperation) could be obtained through other institutions such as the firm, a public regulation, or self-regulated (through deontology codes) professions. Good *Law & Economics* demands adopting microeconomic models suitable for representing the salient features of a given field of interaction (transactions) among economic agents. They must be capable of realistically simulating the effects that superimposing a legal rule would produce through the interaction among the agents within the underlying economic reality. Otherwise, rules designed according to the mistaken hypothesis that a given field of interaction would satisfy the condition of an unsuited microeconomic model, could generate incentives that are completely perverse in that specific area.

Especially within the economics of professions an accurate accounting of the agents' information and knowledge (or what they are able to learn) should be executed. Given the proper modeling of the information available to the agents - what constraints it imposes on them, as well as the *transaction costs* these constraints imply - rational choices become predictable (at least in term of the *feasible equilibrium set* of the game). Otherwise, agents' decisions may contradict the designer's expectations.

Consider what could be the result of reforms of professional services like those introduced in many European countries where, with the intent to liberalize the market of professional services, together with the abolition of minimal tariffs schemes of professionals' remuneration contingent on results have been legalized – i.e. “lawyers' contingent fees”¹. These are contracts allowing the professional's remuneration being contingent upon the outcomes of the lawyer activity, i.e. the judicial decision. This kind of remuneration are in use by long time in the US within the private law sector as well as, but more recently, in the United Kingdom (after the reform of legal services) and other European countries, even though they have been prohibited for a long time in continental Europe. If the relationship between the professional and the client is seen according to the *principal-agent* model, contingency fees can be economically justified as an efficient incentive for the professional's effort. The bulk of this approach is asymmetry of information between the professional (*agent*) - who is well informed about his own effort and characteristics, and the client (*principal*) - who is quite ignorant about the actual occurrence of such variables, but is nevertheless able to foresee the possible outcomes and define some sort of statistical correlation between the observable outcomes and the professional's efforts and characteristics. The case is quite different, however, if the situation is seen as one of bounded rationality and incompleteness of contracts, so that some events are *ex ante* unforeseen and *ex post* asymmetrically gathered by the professional and the client. In such contexts (in part covered by what economists call *credence goods*) the client's *ex post* evaluation of results may require him to submit to an expert's judgment, typically a professional. Moreover, the professional-client relationship is a one of formal authority - the professional is in charge of making residual decisions over variables that cannot be included in the *ex ante* contract. Remunerations contingent on outcomes in these contexts can generate pathological incentives. For instance, the lawyer can discretionally decide to litigate only the more advantageous lawsuit and “settle” all the less profitable cases within his “clients portfolio”, disregarding the “access to justice” right of less-lucky clients’.

¹ This was one of the points of the heated debate that ensued the so called *Bersani Act*, the Italian decree law on the liberalization of professions, when it was passed in the Summer of 2006 (see *dl. 223, July 4th, 2006*, and the *Law n.248, August 4st 2006*)

On the other hand, in the economic analysis of professions, the study of behavioral rules and motivations of the economic agent is particularly important. Behavioral microeconomics explains economic institutions and behaviors as a consequence of the complexity of individual agents' motivations and the composite nature of their utility function arguments. According to this point of view, an agent's utility function can't only represent her self-interested preferences, but also her endogenous motives for compliance with social norms, the importance of trust, the weight of social preferences and reciprocity (Gintis, Bowles, Boyd and Fehr, 2006). It should also represent preferences for reciprocal conformity to an agreed-upon or shared basic principles of any social institution like as, for instance, the ethical code or ideals of a profession (Sacconi 1999, see also Grimalda and Sacconi 2002, 2005, Sacconi and Grimalda 2007). Accounting for these various prompts to act by means of a proper modeling of the economic agents' utility functions allows also an approach to institution design which may take advantage of these more complex motivations, whereas these motivations would be crowd out by unsuitable incentive mechanisms (Frey 1997, see also Fehr, Klein and Schmidt 2001, Fehr and Gächter 2002).

This work proceeds as follows: section 2 will discuss whether a system of professionals remuneration conditioned upon outcomes - easily led back to the principal-agent model (for instance the lawyers' contingent fees system), is adequate for free professions in general. Section 3 will introduce the idea that the professional relationship isn't an *agency* relationship but rather an *authority relationship* based of *contractual incompleteness* (Grossman and Hart 1986). This requires creating fiduciary relationships and the reliance in trustworthiness of the authority position's holder, as meant in organizational theory of formal authority (Simon 1951) and in philosophy of law (Raz 1985). Therefore, section 4 will discuss how the economic theory of incomplete contracts can be used to formalize the conditions for establishing professional authority. This section represents an extension of the "formal vs. real authority" model, proposed a few years ago by Aghion and Tirole (1997) with a different intent. Quite surprisingly the authors didn't consider this interpretation of their theory, perhaps for they focused only on bureaucratic organizations. This will lead me to underline the essential role that is played by behavioral hypothesis on professionals' endogenous adherence to ethical standards

that prevent conflict of interests and induce the professional's identification with her clients' interests (section 5). Sections 6 through 9, introduce a thought experiment aimed at checking the case for or against using agency models for understanding the professional relationship and the pros and cons of contingent fees under different hypotheses about the underlying professional-client game, both informational and motivational. First, I consider the case when the principal-agent standard model could properly design the contractual relationship between the client and professional as long as it is understood according to the paradigm of complete even though information-asymmetric contracts (section 7). Then, I show how a biased use of the standard agency model could instead create mistaken incentives if the professional contract is *incomplete* and it allows for simultaneous many clients—one professional relationships. By two simple extensive form games it is shown that

(i) in the case of a self-interested professional, notwithstanding that utilitarian efficiency is safeguarded, contingent fees leads to not respecting the fiduciary obligations with at least one client (to detriment of Pareto optimality and equal, impartial and loyal respect for the all clients' rights) for only the *ex post* mostly remunerative cases are litigated (sec.8).

(ii) In the case of professional's willingness to comply with deontology standards - requiring impartial protection of all the clients' rights and claims, under a condition of minimal individual rationality, contingent fees lead nevertheless to neutralization of the deontological motivation and to a loss of efficiency in utilitarian sense (sec.9).

I admit that deontological behavior is not completely altruistic and supererogatory - what would violate a condition of minimal individual rationality such that the agent cannot be paid less for higher effort than for lower effort. The professional's deontological behavior hence amounts to a condition of maximizing the professional's payoff under the constraint of *impartial*, *diligent* and *loyal* clients' treatment, which must be *fair* at least compared to their satisfaction level agreed in the original contract that instituted the professional relationship. It follows that - even if the professional is committed by personal motivation to equal and fair treatment of all clients - unless her individual rent is very high, she is unable to avoid case (i) by redressing the unlucky client through the smallest unilateral deviation from the

contingent fees mechanism. This is a voluntary arrangement by which she personally pay for cross subsidization between the cases of the two clients. The result is that deontology becomes indistinguishable from a suboptimal application of the contingent fees remuneration of lawyers, with inefficient (from a utilitarian point of view) total damage compensation for the clients, and perhaps with a violation of the luckiest client's claim to the best possible damage compensation for him. Thus, a typical *trade-off* ensues. Maximizing the professional self-interest under an incentive contract ("contingent fees") induces to maximize aggregate utilitarian efficiency to the sacrifice of equality, impartiality and Pareto. On the other hand, constraining the professional's self-interest to be compatible with equality of clients' treatment, under the same contingent fees mechanism leads nevertheless to *due care* violations and a utilitarian efficiency loss.

A Pareto optimal, impartial, as well as efficient in utilitarian sense, solution aimed at maximizing the total volume of damage compensation and at treating all clients impartially, loyally and diligently is considered in section 10. There, contingent fees contract restrictions are put aside, and the lawyer's effective professional authority is acknowledged - so that she can renegotiate *ex post* the distribution of damage compensation among the three relevant players (herself and the two clients). She is allowed resorting to the global amount of damage compensation won from different cases litigated or conciliated in behalf of different, "lucky" and "unlucky" clients, in order to redress the unlucky from the decision of litigating only the most efficient and remunerative cases to the advantage of the luckiest. I make clear that this solution can be put in place only under behavioral assumptions like as the professional's conformist preferences (or the working of other mechanisms of endogenous norm *compliance*, like reputation), which push the professional to comply with her fiduciary deontological obligations. Nevertheless the main result of all these sections is that under a contingent fee contract, even if these motivations were available, the professional could not carry out them because of the logic of the contract which doesn't allow pooling different cases' damage compensations. I conclude that institutions like contingent fees do matter in pushing aside professional's fiduciary duties and also in making ineffective deontological motivations.

2. Economic analysis of the professions and the *principal-agent* model

What is the economic *rationale* of the client-professional relationship? Is it a relationship between a principal and an agent where the principal hires the agent for a professional service with a clearly agreed-upon scope and predicted outcome, in which the agent's ability and effort are considered indispensable because of his superior knowledge? If this were the case, and if the principal succeeded in designing and enforcing a contract that provides incentives to obtain the desired service from the agent – at the cost of handing over some of his private rent – then we could say that the principal-agent model has captured the essence of the client-professional relationship. We will see, however, that things generally aren't on these terms.

2.1 *The case for “contingent fees”*

The most convincing way to argue in favor of a thesis is to consider the case that apparently demonstrates the opposite. The literature on lawyers' *contingent fees* (remunerations conditioned upon outcomes) actually supports the thesis that at least for damage litigations, it is possible to frame the provision of professional services in terms that are reminiscent of the incentive contract. *Contingent fees* are extremely common in the USA for the remuneration of lawyers in damage compensation lawsuit, with the main exception being family litigations. Though the structure of contingent fees isn't the same everywhere, it is in general based upon the lawyer's commitment when representing the client to accept bearing all or most of the legal action's burden without asking the client for refund in case of failure. At the same time, the client agrees to pay the lawyer a percentage of the compensation for damages if the case is successful. The professional's fee hence ranges from a fixed agreed-upon percentage to a percentage that decreases with the increase in the compensation for damages obtained. The principle is that the lawyer's complete remuneration varies according to the outcome, and that the lawyer bears the cost in case of failure. In 1990 with the approval of the *Courts and Legal Services Act* reforming legal services in England and Wales, a weak form of *contingent fees* was introduced for the first time in a European country. The reform stemmed from a long and lively debate about the benefits and risks of introducing a contingent

remuneration system for lawyers. The solution adopted was to introduce a hybrid remuneration scheme whereby the lawyer asks for a basic hourly fee, that increases according to a pre-arranged percentage in case of a positive outcome of the litigation. Economists rationalize *contingent fees* as an implication of the view that reduces the professional relationship in general to a *principal-agent* problem.² A principal and an agent agree on a contract according to which the principal will pay a remuneration f to the agent. The agent in turn will make an effort e to obtain an outcome (or result) x . The outcome is influenced by a random exogenous factor Θ and by e , so that $x(e, \Theta)$. In this way, the remuneration depends on three variables x, e, Θ , so $f = f(x, e, \Theta)$. The asymmetry in information is introduced by assuming that the agent has private information about e or Θ . In the first case, the agent even though uncertain about Θ – knows what his effort will be, so that *ex post* a *moral hazard* problem arises. In the second case, the agent has private information about the external factor that influences the quality or productivity of his services – for instance his own qualification, training, equipment etc -, but the principal doesn't know how to associate a quality/productivity parameter to the agent at the moment of signing the professional services contract. This yields *ex ante adverse selection*. In both cases, the principal doesn't know e nor Θ , so the remuneration can't be contingent on these variables.

Interpreting the lawyer-client relationship in these terms for cases of damage litigations – especially in terms of a *moral hazard* problem - was rather immediate (Rickman 1994). The outcome x is the amount of compensation for damages received in cases attended to by the lawyer. The lawyer's remuneration is f . The variable e is the effort made by the lawyer, while Θ could either represent his professional quality, training, equipment, updating, or exogenous variables that influence the lawsuit outcome, such as the court's behavior or the opposing lawyer's skills. In this context, the comparative efficiency of different contractual arrangements of the lawyer's fee is evaluated. A *remuneration scheme contingent on outcomes*, whereby the principal

² This is usually argued not only *ex post* (after reform), but also “ideologically” *ex ante*, as the economic policy justification of their introduction in the legal system. For instance, consider that the so called 2006 *Bersani Act* in Italy introduced the principle that “professional's remuneration should be contingent on results” in general for all the professions, and it has been based on the widespread acceptance amongst the policy analysts (but not the professional) that professions must be run according to economic models suitable for the firm's behavior, like as agency models.

pays the lawyer $f(x)$ and takes $x-f(x)$ for himself, is contrasted with a remuneration scheme based on effort, such that given the hourly fee $f(e)$ and the hours spent, the lawyer's payment increases with effort ($d(f)/d(e) > 0$).

If effort is an unobservable variable while outcomes *are* observable, but just statistically correlated to effort, then the optimal contingent contract is one that provides an incentive to the lawyer, increasing the remuneration in states of the world (outcomes) where the amount of compensation for damages is statistically mostly correlated to high effort. On the contrary, a remuneration based on (unobservable) effort allows the lawyer to act to his own advantage, which is to declare or spend more hours than necessary by the case. In fact, if we interpret Θ as an exogenous random variable (for example the counterpart's ability or the court's behavior), the result itself is stochastic and it must include an evaluation of risk.

A contingent remuneration of the lawyer shifts (partly or totally) the risk to the party most capable of handling it. The lawyer can actually differentiate and subdivide the risk between the many cases in his portfolio, while the client is idiosyncratically tied to the particular compensation for damages of his case. Admitting that the client is averse to risk, he will be indifferent in terms of expected utility between accepting a sure amount of money and the risky prospect of an expected compensation for damages from the case (*i.e.* litigate and win a higher compensation or lose the case). The expected monetary value of the risky prospect will therefore be higher than the monetary value of its certainty equivalent in utility. If, on the other hand, the lawyer is risk indifferent, he is able to pay the certain monetary value (equal in terms of utility to the expected value of the client's case) insuring him against the case's uncertain outcome and getting as a payback the right of appropriating the uncertain damage compensation, that will represent a positive surplus to him. In fact, given linearity of the lawyer's utility function, the expected monetary value for the compensation of damages would correspond for a lawyer to a utility value higher than the one paid to insure the client.

A remuneration scheme that insures the client against the costs of losing the case and guarantees him a sure value not dependent on the outcome, and at the same time remunerates the lawyer in a way directly variable with the case's result is a kind of *contingent fee* that completely insures the client. Obviously, the most realistic

hypothesis is that both are risk averse at some extent, and therefore the optimal design of the contact requires that the lawyer and client will share the risk. Usually lawyers' *contingent fees* set that both parties will partake of the risk, because the client's and professional's positive payoffs vary accordingly with the obtained compensation for damages, with the only exception of minimal entrance conditions. In the case of the USA, the client is completely insured just about the risk of failure. In the case of England, the client has to pay a base-line hourly fee, and therefore also the lawyer is partly insured against failure, while both share the risk associated with the extra expected compensation for damages.

On this base, it has been claimed that *contingent fees* increase the clients' access grade to the judicial system for those clients that wouldn't have been able to afford the case's cost or the risk of failure (which also includes payment of process costs) due to an insufficient income. The lawyer offers a remedy to financial markets' failures: on one side he anticipates the necessary capital for proceeding with the legal case that the client doesn't have, on the other side he allows the client to shift all or part of the risk of failure to the lawyer. This has efficiency effects because it gives the client the incentive to push his level of access to justice closer to the social optimum. It also has effects on equity, because given a presumable higher risk aversion grade for poorer clients with respect to the richer professional, under a *contingent fees* scheme one can expect more egalitarian access to justice (Shwartz, Mitchell 1970, Danzon 1983, Swanson 1988, 1991, Rickman 1994).³

³ However, dissenters' views underline that (a) *contingent fees* risk raising prices of legal performances due to the lawyers' possibility to renegotiate the percentage of compensation they obtained, after the client started a dependent relationship with them (lock-in effect) during the course of the case (Benson 1979, Swanson 1991); (b) conflict of interests between the lawyer and client could sharpen not about the effort in the single case, but about the lawyer's decision about which case to litigate and which to accommodate through a transaction with the counterpart: in particular, the lawyer will choose the case to litigate within his portfolio so as to maximize his total returns and not his single clients' satisfaction (Benson 1979, Schwartz, Mitchell 1970, Danzon 1983, Gravelle, Waterson 1993, Rickman 1993); (c) the effect of the *contingent fees* on social efficiency is uncertain concerning the total level of the judicial system's tendency to litigation and on the extent of deterrence against hazardous behavior (that originate claims of damage compensations). In particular, proclivity of preventing such behaviors will be as greater as the lawyers' opportunistic inclination to accommodate lower-income cases with rebating transactions. This depends on a parameter of identification between the lawyers' and clients' interests (Cooter, Rubinfeld 1989, Rickman 1994).

2.2 Why “remunerations conditioned upon outcomes” cannot be generalized for the professions

The above-mentioned assessments assume that the microeconomic representation of the client-professional relationship offered by the principal-agent model is appropriate. Furthermore, they appreciate the efficiency effects of the contractual arrangement under such hypotheses. These models emphasize the *ex ante* predictability of the set of all possible outcomes and the *ex post* ability to observe and verify the obtained outcome, which in this context is the amount of compensation for damages. This outcome is recognizable *ex post* in its objective and independent existence, which means in terms of measurable characteristics that are not dependent for their description from the knowledge of the lawyer’s conduct during the case, and are predictable before starting the case. This type of contract can be correctly implemented by a client just resting upon his knowledge of the compensation for damages obtained and enforced by the judge on the basis of the same information. In this subsection we don’t analyze the particular application of *contingent fees* to lawyers⁴, but the possibility that such contractual mechanisms are paradigmatic of a more efficient regulation of liberal professionals in general.

First, if we could apply “remunerations contingent upon outcomes” to all professional activity, there wouldn’t actually be any trustee relationship within the professional relationship. The client wouldn’t “put himself in the hands of” the professional, for an incentive contract would actually remunerate the professional for what they give back for money, i.e. in a conditional way related to all possible, perfectly predetermined and *ex post* measurable outcomes. Thus there wouldn’t be room for the typical fiduciary duties of loyalty and diligence (due care). What would counts is the result. Actually, the typical agency contract is based not on trust but rather on *diffidence*: in a situation in which the agent can act with discretion - that is when he could lie without being directly discovered - the principal predicts that the agent won’t tell the truth and thus designs the contract in such a way that the agent becomes indifferent between telling the truth or not. It would make sense to speak of trustworthiness only if the principal could believe that when the agent has discretion

⁴ If we hypothesize that the lawyers’ contingent remuneration mechanism is introduced in a context of (not only asymmetric but also) incomplete information, then its application becomes problematic even to the typical case of compensation for damages. About this see sections 6 to 10 *infra*.

he acts according to the principal's interests. But it is just because the principal cannot trust the agent that he designs an incentive contract that incorporates prizes and punishments to condition the agent to fulfill diverse output levels.⁵

In *second* place, the principal's and agent's cognitive and informative ability required by "remunerations contingent upon outcomes" makes a general application of that scheme on the professional world difficult. These are (i) the *ex ante* predictability of the range of all possible outcomes and (ii) *ex post* observability and verifiability of actual outcomes. Regarding (ii), one of the typical professional good's features is that the understanding of the professional service's outcome isn't separable from the description of the professional's performance. The process of consumption of professional services isn't separable from the process of service production. What the client consumes is the action and quality of the services. Take, for example, the case of health treatment: the client doesn't utilize the product of an independent production process. The treatment of the client himself is the product of the service production process. Under the hypothesis of asymmetric information, the professional's action and the quality of his services are private information (that generates moral hazard and adverse selection). As a consequence, the outcome itself (in this case the health treatment) is *ex post* the professional's private information (Dietrich, Roberts 1997).

The full predictability of the range of all possible outcomes (point *i*) is even more unrealistic. The outcomes description is an inherent part of the description of each state of the world so that it cannot be separate by the description of the states space. The fact that a given outcome occurs in different states of the world may imply a quite different description of the outcome itself (for example, an "high damage compensation" gained under favorable conditions is a different result than in unfavorable conditions –i.e. if the damaged belongs to socially ad racially

⁵Economic models of reputation can be regarded differently (Fudenberg 1991). In this case, trust is represented by the probability a player – the client - assigns to the types of the second player – the professional - i.e. his reputation to be an honest type or, to say it differently, by the probability the professional identifies with a *type* that idiosyncratically follows a *commitment*. Under a reputation equilibrium (that is within an effective fiduciary relationship) the professional's rational choice consists in sustaining her reputation by means of a behavior coinciding with the client's expectations. We see that trust does not necessarily imply that the professional acts altruistically – this does not occur in reputation models – but it implies that client believes that the professional will follow a principle or commitment to a rule of conduct. The reconstructing of *reasons* for which this happens could be both self-interest in the long run or intrinsic preferences for reciprocal conformity. The two different (but not incompatible) hypotheses were considered by Sacconi (2000, 2006) and Sacconi (2004), Grimalda and Sacconi (2005, 2007).

discriminated group; “acquittal” of a guilty defendant is different than an innocent one; “perfect recovery” from an open-heart surgery is different than from a bronchitis). Even though we admit that the outcome and the state of the world whose it is a part, are both perfectly observable *ex post*, nevertheless a certain outcome may *change its meaning* accordingly if it has been obtained in this or in that state of the world⁶. Let’s now suppose that some state of the world that has been discovered during the professional performance is completely new compared to the cognitive situation in which the client and professional had agreed on making remuneration depending on output levels. Since results are understandable only when referring to the state of the world within which they are occurred (significance is subjected to “dependence on the context”, or state-dependence), it is clear that there can’t be a contractual obligation nor an obligation conditioned upon the occurrence of some combination consequence/state if the occurred state of the world wasn’t among those states that the parties had foreseen and about which they had taken up contractual obligations. We notice a particular *ex post* inability to “observe”: under unforeseen contingencies we can’t observe or verify whether the contractual obligations has been complied with, simply because these contractual obligations conditioned on outcomes are *mute* in the face of unforeseen contingencies on which the outcome description depends.

For example, if we consider the medical profession, the outcome of medical services isn’t separate from the patient’s treatment. A measurable physical result doesn’t exist that is independent upon the doctor’s diagnosis and kind of treatment (actions and their quality). The consequences coincide with a subjective state of the patient, diagnosable only in the light of biomedical knowledge. To give a value to the services offered one has to be able to understand information about the treatment context and situations that come up in its process, and to judge the consequences one has to either be part of the profession or have the same skills as the doctor. The first is tacit information and the second is specialized information, which the patient usually is

⁶ This means that, in order to overcome incompleteness of contracts, to consider as complete our knowledge of all the possible monetary payoff (so to say a list from 1 \$ to ten billion \$) as they may be separate from unforeseeable state of the world within which they occur, can not be an allowed move. That is it can not be admissible what Maskin and Tirole suggested in they ad hoc reduction of incomplete contacts to a variant of the agency paradigm (Maskin and Tirole.1999, Tirole 1999) .

unable to use. In the last instance, medical services are part of *credence goods*. On the other side, during the cure the doctor can discover a state of health of the patient which wasn't noticed before. This may change the appropriateness of the treatment and the outcome depending on the state of the world. In this way, *ex ante* it is impossible to take specific obligations about the results obtainable in the presence of these unforeseen states of health.

The same occurs with the criminal lawyer. It is impossible to evaluate a court's decision independent from how truth has been reconstructed in course of the trial due to the effect of the opposite actions of prosecutor, defend advocate, and how the judge oversees the case. To assess the court's ruling on a case you need an understanding of the case's context, and to make a judgment it is necessary to use "tacit (or un-formal) information" obtained during the lawsuit. It is impossible to establish *ex ante* whether a sentence shall has been truly favorable or unfavorable just on the base, for instance, of the entity of punishment inflicted and independent of the legal case's story. It wouldn't be meaningful to establish *ex ante* if a certain sentence is light or heavy independently of the evidence put forth as proof of the defendant's guilt or innocence during the trial. On the other hand, in order to evaluate on the base of the legal trial' story whether a certain sentence is either light or heavy, a client needs an expert's guidance. In particular, the verdict judgment is based on tacit knowledge of the legal trial and on a specialized knowledge of law that the client cannot acquire without legal assistance. Instead, the legal assistance for a guilty defendant would be an impossible mission and would be destined to forever being considered self-defeating to the professional. In addition, the truth reached during the trial is in part constructed and in part discovered in light of the evidence put forth which the professional can't *ex ante* foresee. The significance of the outcome is "dependent upon the state" which is revealed in the course of the trial. The set of all possible states (which cannot be identified with the number of conviction years ruled by a sentence) can't be foreseen *ex ante* and listed so as to lead to a prior description of all possible outcomes. In this way, it is impossible to write a contract contingent on a trial's outcomes when they are connected to partially unforeseeable events.

3. Incomplete contract and professional authority

Client-professional transaction should not be seen as a principal-agent relationship, but as an incomplete contract. By this I mean that professional services are not *ex ante* specified contingently on the occurrence of all possible states of the world. The contract is not completed not only due to its costs, but also because, given background information, parties *ex ante* don't even imagine all possible states of the world and therefore the appropriate services. The contract assigns a wide and vague mandate to the professional according to which she can decide discretionally, when states of the world are revealed, how the most appropriate service will be specified.

Moreover, often a professional service implies the client to conform to some requirement inherent to the same definition of the professional service. Examples are: doctors who treat patients and therefore establish, according to their diagnosis, the medical therapy the patient *should* follow; architects and engineers who set a project and then introduces specifications and readjustments along the working process that the building company *must* comply with; lawyers who study a case and readjust along the trial the strategy the client is requested to *follow*.

Professional's discretion ranges over *ex ante* non contractible decision variables, i.e. those decisions that *ex ante*, at the moment in which the client appoints the professional, cannot be subject to an explicit agreement. These decisions refer not only to acts made *ex post* by the professional, but also to the client's behavior.

Thus, a relationship of authority enters the picture according to Simon's definition (Simon 1951). A (the professional) has authority over B (the client) if B accepts (without keeping freedom of questioning them case by case) A's decisions within a given set of alternatives as the criterion of choice over actions that B himself will have to perform later (therapy observance, trial conduct, fulfillment of the project's specification concerning the adoption of buildings materials etc.).

It is worth to notice that Simon introduces the authority relation to make a distinction between the employment contract and the sale contract "on spot". In our case, however, the authority relation develops in the opposite direction compared to the typical employment contract. It is the professional, the one who is "hired", to exercise authority over the client, the "one who hires" him. Using the current terminology of

contract theory, it is the “agent” who has authority over the “principal”. Nevertheless, “unforeseen events” play their typical role: if everything was predictable *ex ante* and the parties were equally informed, we could write a detailed contract in which for each state of the world the decisions of the professional and the subsequent conduct of the client would be set and signed by the parties. However, since states of the world are not *ex ante* entirely defined and listed, it is left to the professional the authority to decide at the right time. This happens because the professional is the party who will be in the best informed position *ex post*.

In these cases, it is normal to say that control over a set of actions is transferred from the client to the professional. However, this does not mean that all the actions controlled by the professional become also the material decisions of the professional himself. From the point of view of the material process, these continue to a large extent to be described as actions that are physically handled by the client. Thus, what is transferred isn’t the physical action, but rather the “right” to decide how these should be handled. This happens because the client accepts the professional’s authority. In other words, he *ex ante* accepts as a whole to take the professional’s decisions as the deliberative premise of the execution of actions that the client himself will handle *ex post*. In effect, what the client accepts as a whole are the reasons for acting put forward by the professional in the position of an authority without questioning them case by case.

According to a well-known definition by the philosopher of law Joseph Raz (1985), the authority’s reasons to act - for those accepting a formal authority in relation to a given practice - are *prima facie preemptive* reasons: the client acts as requested simply because who is in the authority position “says so” - any specific *assessment* of each recommendation *per se* is ruled out. If each recommendation were weighted and assessed by the client against every other reasons to act, then we could not talk about professional formal authority. We would rather talk about logical and empirical abilities of persuasion towards the client (an advisory rather than authoritative function)⁷. An authority exists only if the authority’s reasons to act preempt - i.e.

⁷ The ability to come up with persuading reasons for acting on each given issue (for example the ability to prove that given means-ends relations are *true*) is called *real* or *epistemic* authority, which is crucially based on knowledge. However, the nature of the fiduciary relationship between the client and professional is not only epistemic. Actually, the client recognizes the professional’s authority if he

“take the place of” - the client’s reasons for acting and overwhelm any other reason, just because they are those advanced by the authority itself. This definition describes appropriately the authority “phenomenon” - the kind of reasons which matter in directing the client’s action. But of course this phenomenon seems quite obscure and in need of further rational explanation. We go beyond the *prima facie* aspect of authority when we realize that preemptive reasons to act are reasons depending on (an explained by) preexistent and *independent* reasons that the client already had before the reasons with pre-emptive powers came into play (Raz 1985). Single actions within the range of accepted authority are executed due to the pre-emptive power that characterizes reasons put forward by an authority (“because it says so”), but the acceptance of this pre-emption power depends on already existent client’s reasons to act. Hence, for the professional to be put in a position of an authority means that the preemptive power exercised by the authoritative reasons to act are functional to pursuing reasons to act that the client already has independently of the claims put forward by the professional authority. This instrumentality of the authority relationship to the pursuing in general of goals or reasons that a client already had before the institution of the authority relationship, explains the preemptive-nature phenomenon of the authority’s reasons to act: simply, without that feature it wouldn’t be able to carry out its function.

Raz himself addresses to situations in which authority can be recognized as an effective mean to solve paradoxes of collective and strategic rational action some agents may face “before” accepting the authority relation. For example, we can consider a coordination problem with various possible ways to act in a coordinated and reciprocally beneficial way for all the group members - in which *a priori* none of these ways can be considered superior to the others - but with very negative consequences for all the group’s members if coordination fails - *i.e.* the case of a fire that burst out in a public hall, where the coordination problem is simply to agree on who should leave first from security exit to avoid crowding. In this case, if there is an authority whose decisions have pre-emptive power, the coordination problem is easily solved by following his indication (for instance “children and women first”). The

trusts him. This trust doesn’t come about because he verify the professional’s competence in every contingency, but because he can’t make this type of judgment and has to trust someone who decides in his interest.

concrete indication is not discussed and weighted against other criteria by the group members (if it were, quick coordination would fail), and precisely for this (which amounts to be preemptive) the existence of such an authority plays the role of being functional to independent reasons or goals, which come before the specific content of his deliberation: resolving a coordination problem among the group's members. This "coordination" is a reason that is completely independent from choosing a particular coordination solution and that comes before this choice. In fact, if the authority's indications were not accepted *previously* and *generally*, so to have pre-emption power on the agent's reasons to act, then in the specific case the pre-emption power wouldn't be exercised and the coordination would fail.

Concluding this section, we can say that the client-professional relation is an authority relationship whereby the client *trusts* the professional, and legitimates her authority by accepting that her reasons to act exercise preemptive power over his own reasons to act, as far as this is an effective mean to pursue in general the client's ultimate goals or interests. Such acceptance involves the trustor claim that authority given the trustee is functional to some preexistent goal, reason or interest the trustor himself already had before entering the authority relation. This generates claims over the trustee which amount to her *fiduciary duties*. Actually, fiduciary duties are those that grant that the client's *independent reason* to act are respected and that professional authority is based on *rational acceptance*. They give up completely the pretence to specify ex ante concrete actions or goals that the agent in the authority position should pursue or attain, and delimitate the trustor claim to vague and general principles such as that he must pursue the trustor's best interest *loyally*, with *due care*, and in case the trustee has a number of simultaneous trustors, that he act *impartially* among them.

4. Formal and real authority

4.1. Professional authority as sub case of the theory

A remarkable contribution to the economic theory of organization offers also a model which captures the peculiarities of professional authority (Aghion and Tirole 1997).

Aghion and Tirole intent actually was to treat two distinctive aspects of organizational authority: formal authority and real authority.

Formal authority refers to the right of a contractual party to make decisions which are taken as the premise for the behavior of all members of the organization (subordinates) regarding every topic the contract doesn't specify *ex ante* and on which it is better to decide once the relevant states of the world have been occurred (that is *ex post*). Economic theory links this authority to property rights over the organization's physical assets (Williamson 1975, Grossman and Hart 1986, Hansmann 1988). However, it is notable that many individuals (directors, officers, managers, etc) inside hierarchical organizations, who don't own the organization's physical assets, nonetheless exercise real control over the organization behavior. Aghion and Tirole call the authority these individuals exercise is *real* authority as it is based on asymmetric information, namely on a positive differential of information and knowledge that these subjects hold compared to the owners, about projects the organization may decide to take on. The two authority types always coexist: he who has formal authority can decide in the last resort which project to undertake and can therefore always revoke and modify the project proposed by those who are officially his subordinate. Still, he typically won't do this unless he himself has real information better than that of his subordinates on the project. If his subordinate have higher information, he accepts her resolution without argument. This is the substance of her real authority.

“We formalize this idea in straightforward way. The subordinate exerts effort (shows initiative) to suggest a project to the principal. The principal also chooses how much to learn about the potential project. Once informed, the subordinate recommends a project that sometime is not optimal for the principal, because from the point of view of the agent this project creates a higher private benefit (...) Formal authority prevails when the principal is informed, as she then chooses her preferred project (which may or may not coincide with the subordinate's proposal). In contrast, a poorly informed principal optimally rubber-stamps the subordinate's proposal by fear of picking a worse alternative. The subordinate then has real, although no formal, authority” (Aghion and Tirole, 1997, pp 2-3).

This suggests that it is possible to design formal authority's in such a way that it corresponds exactly to the distribution of real authority (that is, to the distribution of information throughout the organization). Delegating formal authority to the subjects

(agents) who are endowed with real authority may induce significant benefits in terms of the agent's incentive to take initiative in acquiring relevant information. In addition, endowing the agent with formal authority over activities that more closely involve her interests can give her incentive to actively participate in the contractual relationship with the principal (see Aghion and Tirole 1997).

I will show that the “formal and real” model of organizational authority can be used to understand professional authority as a possible solution of an incomplete contracting problem. This can be seen as a case of delegation of the principal's formal authority – corresponding in Aghion and Tirole's language to the client – to the agent – the professional. As a consequence, there is a peculiar combination of two aspects: (a) real authority based on the information differential, or on the professional's specialized competence; (b) delegated formal authority, or the possibility to decide in the last resort on projects that involve mobilizing resources belonging to the principal. Notice that all of this involves an agent *not entitled with property rights* over the organization's assets, who nevertheless may decide to carry out projects that involve the mobilization of the formal owner's (the principal) actions and resources. This is akin to what Aghion and Tirole understand like as a delegation of formal authority *inside the organization* in order to grasp the economic rationale of participatory forms of the organization's decision process. I maintain, however, that professional real authority (for example, besides free professionals such as doctors, lawyers or architects, also economic professionals like the economist who gives advice regarding management strategies, the non executive director who sits on the board and technical professionals who are inserted into the firm's formal structure such as engineers, biomedical researchers and programmers, and keep their real authority based on competence) is the typical case the proposed analysis refers to. It isn't by chance that the starting point is a model bureaucracy (Weber 1974) in which the bureaucrat's rational and formal power is based on his technical competence and his certified professional qualifications (Aghion and Tirole p. 2).

One may ask why in this section I seem to convert myself to a principal-agent model. It should be noticed however that my extension highlights a “shift of meaning” in the standard terms of contract theory, which is needed in the economic modeling of the professional–client relationship. The interesting but also paradoxical aspect, given the

usual meaning attached to terms like “Principal” and “Agent”, is that the Principal’s delegation of formal authority to the Agent (given his real authority) implies that the Agent will decide on the projects to undertake in the last resort. The Agent is “hired” by the Principal and works for him, but at the same time he decides which projects the Principal will undertake. Actually, it is the Principal who complies with the Agent’s recommendations. How is this possible? It’s clear that in this view formal authority is *no longer* based on *ownership* of firm’s physical assets. On the contrary, it amounts to an entitlement with the discretion of deciding projects in the last resort, granted that such a decision will be taken by other subjects (the Principal included) as the basis for their own behavior. If this weren’t so, there would be only one alternative in order to adapt formal to real authority: delegating formal authority would coincide with the transfer of the firm ownership to the agent and therefore with the suppression of the initial Principal-Agent relationship: the Agent would be turned into the Principal and *vice versa*. Clearly, Aghion and Tirole don’t want to explore such a radical transformation of the organization structure of control. Other forms of authority allocation exist that don’t demand a transfer of property rights and allow as well formal authority to be consistent with the effective distribution of information (real authority). It is also clear, however, that in this way terms such as “Principal” and “Agent” are no longer anchored in the traditional meaning they have within standard agency models: if formal authority is delegated to the Agent, delegation is no longer concerned with carrying out a concretely agreed-upon assignment, but rather with a *genuine sphere of discretion* relating to decisions that can’t be pre-established *ex ante* in relation to various possible events or outcomes

It is rather surprising that Aghion and Tirole didn’t see that this agent-cum-formal-and real-authority case (completely *sui generis* compared to the standard model of asymmetric information) is the typical fiduciary relationship between a client and a professional. The professional is “hired” by the client (in this sense, he is the “Agent” of the “Principal”), but is also endowed with the discretion of choosing which projects to undertake, as it is complied with by the client (trial conduct, business management, execution of a building project’s specifications). Indeed, neither the independent professional is actually subjected to the client’s formal authority - this is usual to agency model of standard market relations -, since he isn’t employed by the

client. Nor he owns assets indispensable to the performance of the client activity. But nevertheless in a certain sphere of decisions the client delegates the professional the exercise of formal authority, namely to choose the projects that the Principal will carry out later (and it is not standard at all that in a principal-agent model the agent, without ownership, may control the principal actions). Moreover, this happens because of his real authority, and in particular because of his competence and information. The alternative case, in which the Principal keeps his formal authority over the Agent (similarly endowed with real authority based on information) can thus be seen as a case where the client hires a practitioner with an employment contract and namely keeps his discretion in the last resort over proposals the practitioner will make regarding relevant projects. This paves the road to the study of alternative ways of organizing professional activity, like independent profession VS. professional activity inserted into organizations by means of employments contracts (company lawyer, biomedical engineer for pharmaceuticals, engineer, etc).

4.2 *Summarizing Aghion and Tirole's model*

In this section I will summarize Aghion and Tirole's model (1997) in the form of a Principal – Agent contract (as said, *sui generis* compared to the standard meaning of parties in asymmetric information models). the Principal hires the Agent to gather information on various possible projects and then select and carry out *one (or none)*. There are n possible projects that are associated with benefits: B_i for the Principal and b_i for the Agent. We hypothesize that *only one* (even if we don't know *which* one in the beginning) of the projects has *positive* utility for the Principal, and the same for the Agent: $B > 0$ and $b > 0$ respectively (the value of the positive project is known even if it isn't identified). Two parameters α and β fix the congruence rate between the projects the Agent and Principal respectively prefer, $\alpha, \beta \in [0, 1]$. These are interpreted as follows: α is the probability that the project chosen by the Agent is the one the Principal prefers, and β is the probability that the project the Principal chooses is also the one the Agent prefers. We see that if $\alpha = \beta = 1$ then both the Principal and the Agent prefer the same project. That is, in the *ex post* choice, there isn't a conflict of interests just because their interests are the same or because one of them wants to do exactly what the other desires.

Deciding on the projects, however, isn't *routine*. In the beginning, the moment that the contractual relationship arises between the Principal and Agent, there isn't information about the *payoff* that they will receive from each project: the projects are incompletely described. In other words, *ex ante* the n projects are all indistinguishable one from the other as far as their *payoff* is concerned. The gathering of information should therefore make which projects have a positive utility for the Principal and the Agent clear. Both the Principal and Agent gather information. The Agent gathers information to propose to the Principal about which project to undertake. The Principal gathers information to check the Agent's proposal. At a cost defined by the functions $g_A(e)$, $g_P(E)$ they learn in the following way: the Agent learns *payoffs* of all the project with the probability e and remains ignorant with the probability $(1-e)$. For the Principal E is the probability he will learn all the payoffs, and $(1-E)$ is the probability he won't learn any of them. The cost of learning, or the *effort* cost of information gathering, is a function of the outcome - that is the probability of being informed in the moment of decision - so that for each effort level we may infer the probability to get to the desired result (and reciprocally for each probability of being informed there is a specific cost to be paid)⁸. The functions $g(\cdot)$ are rising and strictly convex with $g(0) = 0$ and $g(1) = \infty$, so that no one can ever be completely informed. The degree of the Agent and Principal's real authority coincides with the probability that each one will be informed about all the project's *payoffs*.

The contract between the Principal and Agent is *incomplete*. When the Principal hires the Agent, the latter receives just the request to look for information and propose a project that cannot be *ex ante* specified. The project can't be *ex ante* contracted because *ex ante* there is not an accurate description of possible projects and *payoffs*. The authority structure in this context is relevant because the party in the position of a formal authority is entitled with the right of choosing the project in the last resort

⁸ It is easy to recognize that a heroic simplification is introduced here. This is typical of any incomplete contract theory that does not want to take bounded rationality and unforeseen events seriously: only in a world of complete knowledge we could predict with certainty that a certain investigation investment discovers the truth with a well specifiable *ex ante* probability. It is as if it was perfectly predictable the degree at which we will discover whether an object has a given characteristics by deciding the extent at which we have to raise a veil covering it. In our case in particular, we know that only one project has positive value equal to B and only one (possibly, but not necessarily the same one) has positive value equal to b , while all the others have value equal to 0, and by inputting a given effort e we get back the knowledge of which projects have value B and b with a given probability p .

once the Principal and Agent have gathered information. Beyond formal authority, however, real authority's is also important, as it is possible that *ex post* he who has formal authority remains uninformed. If he is not informed, he lets the project the subordinate party proposed unfold. Therefore, compared to typical models of incomplete contracts, formal authority doesn't secure that the party with authority will decide which project to carry out in the last resort, as it is possible that he leave the decision to his subordinate.

The following is the temporal scansion: at the time t_0 the Principal proposes a contract that allocates formal authority between the Principal and Agent about the future projects' choice; at the time t_1 the parties privately carry out research to gather information and to increase the probability of being informed in the moment in which they will have to decide on the project; at the time t_2 the party that *doesn't* have formal authority proposes her preferred solution; at the time t_3 the party that has formal authority *chooses* the project that he prefers based on the information that he gathered and on the information his counterpart gave him. He chooses his favorite project (no matter what the counterpart puts forth) if he was successful in gathering information. Otherwise, if the counterpart is informed he accepts without any more scrutiny her proposal, but if neither counterpart is informed he doesn't choose any project. Thus, to have formal authority means to have the right to chose the preferred project directly or to accept the subordinate's offer or not to support any project.

We can now see what the expected *payoffs* associated with the "decision to undertake a project" are (whomever can take it). The perspective is that at moment t_1 the Principal and Agent must decide how much to invest in information and predict from the cost function the probability of being informed *ex post* for each investment in information. If the Principal has formal authority (indicated with star *), the expected *payoffs* are:

$$U_P^* = EB + (1-E) e \alpha B - g_P(E)^*$$

$$U_A = E\beta b + (1-E)eb - g_A(e)$$

If, instead, formal authority is given to the Agent, the expected *payoffs* are:

$$U_P = e\alpha B + (1-e)EB - g_P(E)$$

$$U_A^* = eb + (1-e) \beta Eb - g_A(e)^*$$

Said in other terms, in the hypothesis that the Principal is given formal authority, for each investment in information he is conscious to acquire a certain probability E of being perfectly informed about which project is associated with the benefits B , and to fail to be informed with probability $(1-E)$. He therefore considers that in the first case (with probability E), he will choose the project that he prefers, gaining benefit B , while in the second (with probability $(1-E)$), he will rubber-stamp the project proposed by the Agent in the meantime, if she will be informed (as happens with a probability e), which is of value αB to him. If not, with probability $(1-E)(1-e)$, no project will be carried out at all. On the other hand, the Agent (if she doesn't have formal authority) considers that if she invests a certain effort in gathering information, she can identify the project of value b she prefers with probability e . This will be accepted by the Principal, as long as with probability $(1-E)$ the Principal hadn't been successful in gathering information. Otherwise, with probability $(1-e)$ she won't be able to suggest any project. On the other hand, she also understands that the principal with probability E will choose the project he prefers on his own, which is of value βb to her. The reversed reasoning applies for the Agent in the case that he has formal authority and the Principal doesn't has it, as illustrated by the *payoff* functions for that case.⁹

As $g(\cdot)$ associated to each level of effort a given probability of coming out informed *ex post*, these can be considered investment variables on which the Principal and Agent can make decisions in order to affect the state of information in which they can *ex post* make decisions about the project. Therefore the two players at time t_1 will take into consideration the expected utility of the *ex post* decision on projects for each level of information investment. By establishing the optimal investment level, they will set the maximum expected utility they can gain from the *ex post* decision at time t_3 , when their informative state will allow them (for example, in the case of the Principal) to choose the project with value B , or else to accept the project proposed by the counterpart with value αB , or else none.

⁹Here the terms undergo a “shifting of meaning”. What kind of “Agent” is a subject who has formal authority to decide discretionally on elements that are not specified in the initial contract or decide if he will listen to the principal's opinions or else (if he is uninformed) decide not to do anything? It is clear that we are using the same term to designate a concept which is quite different from that in use in standard Principal-Agent models, and this suggests to give it in this case the meaning of professional *authority*.

Now we see the effect of the two structures of formal authority on the incentive to gather information for the Principal and Agent. We must account for the parties' best responses under each allocation of authority, where the variable under the two subjects' effective control is the investment in information effort. First, we can evaluate the variation of the expected utility due to a marginal increase of the probability of being informed caused by a corresponding increase in research effort, and choose such an investment level to maximize the payoff functions. In the case of a Principal with formal authority, the first order conditions to maximize the Principal and Agent payoff functions are:

$$\frac{\partial U_P^*}{\partial E} = B - (\alpha e)B - g'_P(E)^* = (1 - \alpha e)B - g'_P(E)^* = 0, \quad \text{that is } (1 - \alpha e)B = g'_P(E)^*$$

$$\frac{\partial U_A}{\partial e} = (1 - E)b - g'_A(e) = 0, \quad \text{that is } (1 - E)b = g'_A(e)$$

In other words, the Principal's incentive to get informed (the marginal increase in his expected utility) is positively correlated to the index $1 - \alpha$ of conflict of interests with the Agent and the magnitude of the benefit B . At the same time, the Agent has a higher incentive to gather information when his private benefit b is great and when the probability of the Principal's interference in his proposals is little.

Now consider the first order conditions to maximize the payoff functions in the case of the Agent's formal authority:

$$\frac{\partial U_P}{\partial E} = (1 - e)B - g'_P(E) = 0, \quad \text{that is } (1 - e)B = g'_P(E)$$

$$\frac{\partial U_A^*}{\partial e} = b - (\beta E)b - g'_A(e)^* = (1 - \beta E)b - g'_A(e)^* = 0, \quad \text{that is } (1 - \beta E)b = g'_A(e)^*$$

Analogously to the previous case, for the Agent the incentive to be informed is as high as the conflict of interests with the Principal (little β), and as high as his potential

payoff b . The natural trade-off is that, as high the Agent's control is as little the Principal's incentive to be informed.

The pairs (E_1, e_1) and (E_2, e_2) respectively are equilibrium solutions of the best effort level choices in the two cases above, defined in terms of the best choice of the probability levels of being *ex post* informed for each party. Because $(1-\alpha e)B > (1-e)B$ then $g'(E) > g'(e)$ and at the same time, since $(1-E)b < (1-\beta E)b$ then $g'(e) > g'(E)$. As a result, the effort in information is greater for the Principal under the configuration in which he himself has formal authority. Analogously, the effort in information is greater for the Agent when he has delegated authority. Formal authority delegation pushes the Agent to take more initiative in gathering information compared to the case in which he is subordinate, but decreases the Principal's incentive to be informed because he loses control. On the other hand, if the Principal has formal authority the Agent has less incentive to be informed because he knows it is less probable that his preferred project will be passed. Therefore the initial choice of the formal authority structure at time t_0 must account for the aggregate effects of these trade-offs under different organizational solutions.

4.3. *Inferring professional authority*

Under what conditions does the formal and real authority model allows us predicting the emergence of a trust relationship between the client and professional? I intend the case in which the Principal (single or organization) delegates formal authority, regarding the choice of a project to an Agent who is independent of the Principal (therefore, *not* an employees of an organization whose assets are owned by the Principal himself). The result is characterized by the Agent's (i) real authority based on competence and (ii) formal authority on the choice of a project. The terms "Principal" and "Agent" are therefore intended *sui generis*, waiting for a more suitable economic vocabulary. I will not extend the investigation of the condition that are in general necessary for this occur, and focus just on the *sufficient conditions* for its occurrence.

In the prospective of the *ex ante* choice for the structure of authority at the time t_1 , the Principal decides to institute the typical client-professional relationship if:

$$E_1B + (1-E_1)\alpha e_1B - g_P(E_1) < e_2\alpha B + (1-e_2)E_2B - g_P(E_2) \quad (1)$$

If (1) is true, then the Principal delegates the Agent formal authority and only maintains the opportunity to choose the project whenever the agent (professional) doesn't make a proposal because he is uninformed. From the first order conditions on the maximization of the Principal and Agent's payoff functions, we know that (E_1, e_1) and (E_2, e_2) are reciprocal best response in the choice of the two players' informative effort, under the two formal authority's alternative allocations, and we know that these satisfy:

$$E_1 > E_2, \quad e_2 > e_1$$

(the Principal as well as the Agent will more likely be informed, given the optimal effort dedicated to gathering information, when they are endowed with formal authority). It therefore follows that $g(E_1) > g(E_2)$, i.e. the Principal spends more for information when he has formal authority compared to when he delegates it to the Agent. The sufficient condition such that the Principal decides to enter into a professional authority relationship with the Agent therefore becomes:

$$E_1 B + (1 - E_1) \alpha e_1 B < e_2 \alpha B + (1 - e_2) E_2 B \quad (2)$$

It is now needed to find the conditions under which (2) is valid. To do that, I introduce some natural hypotheses dealing with the characterization of solution (2) as the institution of a professional relationship. I will prove that these assumptions, along with another hypotheses that I will shortly introduce, are sufficient conditions for (2)

Hypothesis 1 $\alpha \approx 1$

i.e. any conflict of interests between the Principal and Agent about the project to be carried out must be *almost* completely absent once the relevant information has been gathered. In order to make simply calculable the "almost" condition, I treat $\alpha \approx 1$ like as $\alpha = 1$. The reason for the symbol \approx ("almost the same") however is due to the interpretation of α as an indicator of "full" professional deontology (which always involves some fuzziness). Notice that I concentrate on the parameter α for I'm mainly interested in the Principal's decision to delegate authority to the Agent; however to analyze the Agent's decision some assumption should also to be made about the

parameter β , concerning how much the project preferred by the Principal is also a benefit to the Agent.

Hypothesis 2 $e_2 > E_1$,

i.e. given the equilibrium choice of information best investment levels, when in the position of formal authority the Agent must be more informed than the Principal is in the same position. This reflects the typical hypothesis that the professional has more specialized knowledge about the projects than the client, so that her reaction to the incentive constituted by holding formal authority is more intense.

Given the above assumptions, it follows that $e_2\alpha B > E_1B$. Thus, it is more advantageous to the Principal that the Agent has the right to decide if she is more informed rather than having that right for himself in the same situation. It is therefore possible to place the condition (2) in terms of the following inequality of differences

$$\Delta_1 = (e_2\alpha B - E_1B) > [(1 - E_1)\alpha e_1B - (1 - e_2)E_2B] = \Delta_2 \quad (3)$$

We should remember that $(e_2 - E_1) = [(1 - E_1) - (1 - e_2)]$. The difference between the probabilities of being informed and their complements (coming out uninformed) is identical. This means that the absolute value of the pair of probabilities is neutral for the solution of the inequality between Δ_1 and Δ_2 . I can therefore write, where appropriate, the condition (3) in the following way

$$\Delta_1 = (p\alpha B - qB) > (p\alpha e_1B - qE_2B) = \Delta_2$$

where the pair of probabilities (p, q) applied to each difference can freely take the values (e_2, E_1) or $[(1 - E_1), (1 - e_2)]$.

We can now focus on the other essential variable for setting sufficient conditions for $\Delta_1 > \Delta_2$: this is the ratio e_1/E_2 , i.e. the probability that the Agent will be informed when *he isn't endowed* with formal authority compared to the probability that the Principal will be informed when he is a client who *gives* formal authority to the professional. The effects of the *absence of formal authority* therefore determine the incentive for the two subjects to be informed. To set the conditions on e_1/E_2 , I analyze the following three cases:

Case 1: $e_1/E_2 = 1$, that is $e_1 = E_2 = \xi$, where $0 \leq \xi < 1$, being excluded that the probability ξ is equal to 1 because $E_1 > E_2$, $e_2 > e_1$

In this case, because of the inequality between the probabilities $p > q$, $\Delta_2 = (p\alpha\xi B - q\xi B) > 0$. At the same time, we know that given $\xi < 1$,

$$\Delta_1 = (p\alpha B - qB) > (p\alpha\xi B - q\xi B) = \Delta_2$$

So that the condition (3) is satisfied for this parameter value.

Case 2: $e_1/E_2 < 1$, that is $E_2 = \xi e_1$, where $\xi > 1$, but $\xi e_1 \leq 1$ (it is a probability).

Given that $(1 - E_1) > (1 - e_2)$ and $\xi e_1 > e_1$, in this case we see that $\Delta_2 = [(1 - E_1)\alpha e_1 B - (1 - e_2)\xi e_1 B]$ can come out positive, negative or null, according to the parameter's values. As Δ_1 is positive, if Δ_2 is negative or null then by definition (3) is satisfied.

Δ_2 is negative or null if

$$\frac{(1 - E_1)/(1 - e_2)}{\xi e_1/e_1} \leq 1$$

That means the probability that the Principal is informed $E_2 (= \xi e_1)$, when he doesn't formally control the professional, should be great enough - compared to the probability that the professional is informed when he is a subordinate - to counterbalance the probability that the principal isn't informed when he exercises formal authority, compared to the probability that the professional isn't informed when he has delegated authority.

When this condition isn't respected, Δ_2 is positive and therefore it is necessary to evaluate the possibility that $\Delta_1 - \Delta_2 > 0$. Consider the following differences:

$$\Delta_3 = [e_2\alpha B - (1 - E_1)\alpha e_1 B] > 0,$$

due to the joint effect of $e_2 > e_1$ and $(1 - E_1) \leq 1$,

$$\Delta_4 = [E_1 B - (1 - e_2)\xi e_1 B] > 0,$$

due to the joint effect of $E_1 > \xi e_1$ and $(1 - e_2) \leq 1$.

Hypothesize that $e_2 \geq (1 - E_1)$ and $E_1 \geq (1 - e_2)$, then for the effect of $e_2 > E_1$, and $\xi e_1 > e_1$

$$\Delta_3 = [e_2\alpha B - (1 - E_1)\alpha e_1 B] > [E_1 B - (1 - e_2)\xi e_1 B] = \Delta_4.$$

Instead, if we consider $e_2 < (1 - E_1)$ then both Δ_3 and the relationship Δ_3/Δ_4 would decrease compared to the previous case due to $(1 - E_1) > (1 - e_2)$. Symmetrically however both Δ_4 and the relationship Δ_4/Δ_3 would decrease due to $E_1 < (1 - e_2)$ and $e_2 > E_1$. Therefore the effect of $\xi e_1 > e_1$ would remain, which implies $\Delta_3 > \Delta_4$. The following partial ordering results:

$$e_2 \alpha B > [(1 - E_1) \alpha e_1 B], \quad (E_1 B) > (1 - e_2) z e_1 B.$$

In order to complete this ordering, consider the following alternatives:

- If $\Delta_5 = [(1 - E_1) \alpha e_1 B - E_1 B] = 0$, then the order becomes

$$e_2 \alpha B > (1 - E_1) \alpha e_1 B = E_1 B > (1 - e_2) z e_1 B$$

As a consequence $\Delta_1 = \Delta_3$, $\Delta_2 = \Delta_4$, thus given $\Delta_3 > \Delta_4$ also $\Delta_1 > \Delta_2$ is valid, what is required to set (3).

- If $\Delta_5 = [(1 - E_1) \alpha e_1 B - E_1 B] < 0$, then the ordering becomes

$$e_2 \alpha B > E_1 B > (1 - E_1) \alpha e_1 B > (1 - e_2) z e_1 B$$

As a consequence $\Delta_3 = \Delta_1 + \Delta_5$, $\Delta_4 = \Delta_2 + \Delta_5$ and, because Δ_5 is common, $\Delta_3 > \Delta_4$ implies $\Delta_1 > \Delta_2$.

- If $\Delta_5 = [(1 - E_1) \alpha e_1 B - E_1 B] > 0$, then the ordering becomes

$$e_2 \alpha B > (1 - E_1) \alpha e_1 B > E_1 B > (1 - e_2) z e_1 B$$

as a consequence $\Delta_1 = \Delta_3 + \Delta_5$, $\Delta_2 = \Delta_4 + \Delta_5$ and, because once Δ_5 is in common, $\Delta_3 > \Delta_4$ implies $\Delta_1 > \Delta_2$. Therefore for every value of the variable $e_1/E_2 < 1$ it is always true that $\Delta_1 > \Delta_2$, which implies that (3) is always true for these value of the e_1/E_2 parameter.

Case 3: $e_1/E_2 > 1$, then $e_1/E_2 = \xi > 1$ and $E_2 = 1/z e_1$, with $1/\xi < 1$

In this case $\Delta_2 = (1 - E_1) \alpha e_1 B - (1 - e_2)(1/z e_1) B$ is always positive because $(1 - E_1) > (1 - e_2)$ and $1/\xi < 1$. It is necessary to determine the conditions under which $\Delta_1 > \Delta_2$. Consider Δ_3 and Δ_4 again. Given the relationship between the pair weights e_2 , E_1 - which characterizes the Agent and Principal's best choices about the probability of

resulting informed when they *are* respectively in a position formal authority - and the pairs of weights $(1- E_1)$ and $(1-e_2)$ - which characterizes the Agent and Principal's best choices about the probability of *not* resulting informed when they are respectively in a formal position of authority, it is possible to determine when $\Delta_3 > \Delta_4$ is true. In fact, if we devoid Δ_3 and Δ_4 of the probability weights, and we only consider the difference

$$(\alpha B - \alpha e_1 B) - [B - (1/\alpha) e_1 B]$$

we see that for $\alpha \approx 1$ the expression is generally negative. Actually, an α very close to 1 will almost always be $\alpha > 1/\alpha$; furthermore for $1/\alpha$ values very close to 1 (such that $1/\alpha > \alpha$) the expression is always negative, unless $1/\alpha$ has such a value for which

$$\frac{\alpha}{1/\alpha} < \alpha$$

what *cannot* happen, given the hypothesis $1/\alpha < 1$. Therefore the relationship between Δ_3 and Δ_4 will only depend on the comparison between $1/\alpha$ and equilibrium value e_2 , E_1 , so that for each value of B ,

$$\text{if } \frac{E_1/e_2}{1-E_1/1-e_2} \leq 1/\alpha \quad \text{then } \Delta_3 > \Delta_4$$

$$\text{if } \frac{E_1/e_2}{1-E_1/1-e_2} > 1/\alpha \quad \text{then } \Delta_3 \leq \Delta_4$$

When $\Delta_3 > \Delta_4$ we apply what was demonstrated for Case 2 and we obtain that $\Delta_1 > \Delta_2$. If $\Delta_3 \leq \Delta_4$ then (3) is not satisfied.

In short, we have found in the three cases that (3) is satisfied under the assumptions made above if

$$e_1/E_2 \leq 1$$

or if

$$e_1/E_2 > 1, \quad \text{admitted that } \frac{E_1/e_2}{1-E_1/1-e_2} \leq 1/\alpha$$

which implies that, in order to make assumptions sufficient to establish condition (3), we need an additional hypothesis about the incentive the Principal and Agent must

have in order to spend effort in information gathering when they respectively do *not* have formal authority:

Hypothesis 3. $(E_2 + \varepsilon) \geq e_1$, with $\varepsilon = 1 - e_1 (1/\alpha)$, such that $1/\alpha \geq \frac{E_1/e_2}{1-E_1/1-e_2}$

i.e. in order for it to be certainly convenient to the Principal to institute a professional relationship with the Agent, the equilibrium probability to be informed (and therefore the corresponding incentive to invest in information for he who is subject to the professional's formal authority) must be great "enough" compared to the symmetric incentive that the Agent would have to invest in information whenever she was submitted to the Principal's formal authority.

5. The preference for reciprocal conformity to professional deontology

The assumptions in the previous paragraph, $e_2 > E_1$, $E_2 + \varepsilon \geq e_1$, are perfectly in line with the results of Aghion and Tirole's model. In particular, the Agent becomes an independent professional entitled with professional authority if (i) her incentive to be informed when she has formal authority is greater than the Principal's because her training and specialist knowledge reduce her costs for investing in information and allow her a better return on investment, (ii) the Principal, even if he becomes the beneficiary of the professionals' services, still maintains a certain incentive to keep himself informed on projects in order to check the professional's activities and to be able of deciding in case the professional does not indicate any project to undertake. In short, there is a *trade-off* between the greater incentive for the professional with delegated authority to be informed and the lesser incentive for the Principal to be informed when he delegates authority. Thus, a professional relationship is born when this trade-off is not too high and is comparatively less costly than the trade-off that would result in a situation where the principal wanted to exercise authority over the professional and consequently the professional, as an agent, had less incentive to gather information.

It remains to comment on the hypothesis $\alpha \approx 1$. First, consider that this hypothesis is crucial to the formal characterization of professional authority. In fact, the Principal's

incentive to delegate authority to the Agent will be as little as α is, because this parameter sets the probability that an Agent endowed with professional authority acts in conflict of interest with his client: in this way a low α would greatly reduce the effect of hypotheses 2 and 3. Formally, α indicates the degree of identity between the Agent's interests and those of the Principal, which is the probability that the project preferred by the Agent will be the same one the Principal favors as well. But this identity of interests can have various interpretations: it can be a primitive fact, which is inherent to the very fabric of the players' preferences as they are represented by their utility functions, or alternatively it can derive from an institutional design that exogenously constraints preferences. If the explanation is institutional, a strong congruence of interests between the Agent and Principal is understandable only if these are continuously part of the same organization pursuing a common goal. The organization would then operate as a selector for individuals seeking nearly the same goal. This isn't the case if the two are independent parties that don't develop a continuous cooperation, but just cooperate about the choice of a single project (even if an important one). In any case, we cannot assume there will be a complete absence of conflict of interests, because in general producing a service is costly to the professional and consequently, given a remuneration level, her material interest is to minimize effort. On the contrary, if we stick to the strict interpretation that α is a parameter of primitive congruence between the two utility functions, we could be lead to assume implicitly that the professional is a purely altruistic agent as far as his utility function attributes weight almost equal to 1 to the client's benefit (that means: the benefits *for* the professional are almost equal to those *for* the client). Note that in case the Agent is perfectly altruistic, the Agent doesn't entertain preferences independent on the client preferred project. Hence, when he chooses her preferred project, which values b to her, the project must also be of value $\alpha B = B$ to the Principal. As a consequence, when the Principal chooses his preferred project, this should amount to a value $\beta b = b$ to the agent, for she likes exactly what the Principal prefers - which is the same as the hypothesis that $\alpha = \beta = 1$.¹⁰

¹⁰ Notice that "altruism" is exactly the interpretation of fiduciary obligations that Easterbrook and Fischel (1997) rejected in their view of fiduciary duties as an answer to incompleteness of contracts.

Nevertheless, the parameter $\alpha \approx 1$ could also be interpreted simply in the sense that *there are* effective fiduciary obligations of *loyalty* to the client and *due care* in pursuing the benefit B for the client. “Effective” does not mean that there exists an external enforcement of them, but simply that the Agent complies with fiduciary obligations by a rational choice. Nor does it mean that in order to comply with the fiduciary duties the Agent must be paid material incentives. On the contrary, here is where both the institutional design-based and the preference-based explanations of $\alpha \approx 1$ come into the picture. Assume that all the professionals belonging to a given professional community accept by agreement a code of deontology, which they understand as the constitution of their profession. I hypothesize that their preferences are endogenously influenced by the mutual expectation of conditional and reciprocal compliance to the code. The identity of B and b in this case is not due to a primitive *identity* of the two parties’ *material* payoff. Material payoff may differ, but what counts here is the *psychological* payoffs annexed to the expectation of reciprocal conformity to the principles of the agreed deontological code¹¹. Actually I hypothesize that as far as the Agent expects that these principles are generally complied with (as a social norm) by the profession’s members, she develops a preference to conform to obligations whose content is pursuing aims or interests that are the *same* as the client’s, even if these are not her preferred material outcomes. The explanation hence is that there is a standard – a professional deontology – that incorporates typical fiduciary obligations of the profession, and that it is motivationally effective in developing endogenous conformist preferences. This in equilibrium encourages adherence to the standards itself - under conditions of reciprocal expectations of conformity that are also endogenous with respect to the agreement among professionals (see Grimalda and Sacconi 2005). The parameter α thus is in turn a function of the degree to which her psychological preferences for conforming to the obligation of choosing the project the client desires, overcomes the professional’s material preferences for alternative projects.

A different explanation may be that the effectiveness of a deontological standard depends on positive reputation effects that a deontological conduct allows the

¹¹ General references for this mode of theorizing are reciprocity models like as Rabin (1993) and Falk and Fishbacker (2001), but specifically I’m elaborating here on the theory presented in Grimalda and Sacconi (2005, 2007); see also and Sacconi Faillo (2005) for an experimental test of this theory.

professional, involved in a repeated game with his clients, to accumulate. Although in this case the probability that the professional will choose a project identical to the one the client desires ($\alpha \approx 1$) has an *instrumental* explanation given by the benefit of reputation, it is not incompatible with the previous explanation. In fact, aside from long-run material advantages annexed to reputation, conformist preferences are complementary to the efficiency of a reputation mechanism. If conformist preferences encouraging a strategy of compliance to deontology are in place, then adopting such a strategy from the early stages of a repeated game does not merely involve the cost of an investment, but also a direct ("intrinsic") benefit. Under these hypothesis, investing in reputation from the early stages of the game involves the much more favorable trade-off between on one hand the opportunity-cost of disregarding an *immediate* opportunistic material payoff and on the other one a *direct early* psychological benefit of conforming to deontology (under mutually expected conformity) *plus* the delayed benefits of reputation (see Sacconi 2004, 2005; Sacconi and Faillo 2005b).

Thus, in my interpretation, the effectiveness of a professional deontology is part of the sufficient condition for the institution of professional authority. I use the symbol $\alpha \approx 1$ (which means "almost equal") also because deontology demands that the professional pursues his client's scope within the limits of respecting "third party interests" or public interests, and therefore identity can't be reached.

As far as I apply Aghion and Tirole's theory to the professional relationship, discretion over *ex ante* non-contractible decisional variables creates a space *ex post* for opportunistic behavior – *in primis* of the professional but also of the client. Therefore I have accounted for the effectiveness of alternative institutional arrangements. In one case the professional in virtue of his professional authority remains free and controls the decisions that *ex ante* cannot be agreed in any detail. In the opposite case, she is subjected to the client's formal authority because she becomes an employee of the firm controlled by the client. Hence, sometimes the client's (principal's) formal authority - understood classically as control over the firm's physical assets - can be interpreted as a way of disciplining the professional's *real* discretion. Nevertheless, as Aghion and Tirole's theory remind us, authority linked to ownership never eliminates discretion based on professional competence.

This cannot be escaped even when the professional is hired as an employed practitioners (for example, a doctor at an hospital, a professor at a University or a firm research department run by engineers, doctors, or biologists). While creating a formal organization - in order to hire the professional as a subordinate- may only be a costly way to control and influence the professional's real discretion (which is expressed by $E1 < e2$), at the same time the costs that the professional would face - due to the client's control - can grossly reduce her incentive to invest in specialized human capital (expressed by $e1 < E2$). A decision over these two alternatives must be taken in light of the *trade-offs*, and the level of conflict of interests between Principal and Agent. Leaving the professional independent and endowed with professional authority can be more efficient then the alternative, when substitutes for disciplining the risk of abusing professional authority exist that are cheaper than formal control, hence allowing the hypothesis $\alpha \approx 1$. As we have seen, this is exactly the role of professional deontology.

6. The impact of contractual incompleteness on lawyers' contingent fees

The result of the previous section is to characterize the professional relationship as an authority relationship (formal and real). Therefore, we are moving in the area of contract incompleteness. The scope of this section is to introduce a "thought experiment" aimed to test what may happen if an inadequate form of regulation were introduced in this area of transactions, with the typical structure of incentive agency contracts (as discussed in section 2 devoted to lawyers' contingent fees)? The experiment I suggest is therefore to simply apply this remuneration scheme in a context of incomplete contracting and then try to predict the consequences. The scope of a "thought experiment" is not to ascertain the validity of a proposition in general, but just an attempt of falsification. To prove that undesirable effects are derived in a relevant case, which is constructed without restrictive *ad hoc* hypotheses and is representative of an entire class of relevant real-world situations, is enough to infer that an incentive mechanism may have negative policy consequences. Obviously, we are not confuting agency theory, for the simple reason that the unexpected effects come from a substantive economic situation which is different from the one on which

the contingent remuneration scheme would have been correctly designed. From the theoretical point of view, the experiment is simply a “mistaken” application. But, in order to assess policy implication, we can’t overlook errors that, by superimposing an unsuitable theoretic model to a reality that doesn’t satisfy its initial conditions, result in effects that designers themselves did not desire and expect. In fact, the thought experiment deals with a normative mechanism that can be seen as a natural application of those reforming vision of the professions which are based on the dominant paradigm of agency theory applied into the particular legal environment of damages compensation cases.

The problem we are dealing with is well known in literature: after having insured the client against the failure of the case, the professional can have conflicting incentives when choosing which cases to litigate. He will only want to litigate the cases in his clients portfolio with greater expected utility, without bringing the level of respect for legality and client rights enforcement to the social optimum.

However, the aspect I want to focus on is of general interest. If the information in light of which the client and the professional sign *ex ante* the contract is incomplete, the contract won’t discipline all the possible states of the world that could come forth in the course of the case, nor all the possible damage that could be obtained by the lawyer. In this way, the lawyer has a margin of real discretion when he chooses the level of compensation to be claimed for under unforeseen contingents. In fact, in such a situation he can *ex post* decide on the amount when the relevant information has been revealed. This discretion increases the possibility for the lawyer to adjust the damage compensation requested accordingly with the facts discovered as the case proceeds. The problem is whether this discretion can turn out to benefit the client.

Obviously, in a contractual scheme of pure insurance of the client (where the client definitely “sells” the case to the lawyer at a certain price and gives up any conditional claim on the outcome), the discovery of unforeseen events, which lead to a higher damage compensation than those *ex ante* foreseeable, would only advantage the lawyer. In fact he would appropriate the entire surplus deriving from lawyer and client joint action in the new contingencies. Not involving the client in the additional surplus sharing will implicate an additional risk of client’s moral hazard (for example, during the trial). The prevalent scheme of contingent fees, it being based on a division

of risk between the client and professional, doesn't run this risk. In fact, in this case the contract would impose that both the client and professional participate in the sharing of each possible *ex post* compensation, setting *ex ante* the percentage claimed by each part.

If the design of the remuneration percent scheme was conditional on certain foreseen states of the world, the occurrence of unforeseen events could allow the lawyer to renegotiate the contract. However accounting for this possibility would bring us out of the context of incentive contracts, seen as "complete" contracts (even though with parties asymmetrically informed) set out *ex ante* conditionally upon every possible state of the world.

Hence let's assume first that these contracts can't be renegotiated, which means the percentage obtained by the professional can't deviate from a certain compensation level whatever the outcome. In any case, the lawyer will only decide to litigate the cases that offer the highest expected utility *ex post*, in light of revealed information (and won't litigate at all *ex post* losing cases), but those case he decides to litigate will be compensated according to the provisos set out in the *ex ante* contract. My point is that such a rigidity in the incentive contract (which doesn't allow re-contracting *ex post* the client's compensation) is compatible with both the lawyer's self interests - who will decide to litigate only the most profitable cases, and the client's one - who will *ex post* profit from *ex ante* unforeseen events. It will, however, result in a distributive inequity towards the client whose cases will be set aside and whose situation will worsen *ex post* due to the discovery of new opportunities. Specifically, in case the lawyer has bonded productive capacity, although he behaves efficiently so to maximize the total amount of damage compensation, this contractual scheme will prevent the lawyer from exercising his discretionary power to serve all the clients. In this way, some clients, who had *ex ante* a positive expected compensation, won't be compensated at all for the damage. In other words, the contingent contract pushes the lawyer to act opportunistically regarding clients who *ex ante* had reasonable expectations of compensation.

7. A client – lawyer game where contingent fees are successful

We will first consider a typical agency problem within the context of complete but asymmetric information, characterized by the adoption of contingent fees. The client (Principal) should decide whether to consult the lawyer (Agent) to start off a case for damages against a counterpart. In case the lawsuit is effectively brought to court, its result will be influenced by the occurrence of three possible states of the world – all of which the Principal and Agent foresee when signing the contract:

$$\Omega = \{\omega_1, \omega_2, \omega_3\}$$

If ω_1 occurs, the case is lost. If ω_2 or ω_3 happen, the case is won. The description of each ω_i includes elements like evidence (more or less certain) regarding the counterpart's responsibility; judge's attitude; defense lawyer's ability, etc. x is the compensation that the Agent is able to obtain, where x depends on the state of the world that will occur as well as on the effort e of the lawyer in litigating the case. Therefore, $x = g(\omega_i, e)$. For each state, the Agent can choose between two effort levels $e = \{e^\circ, e^*\}$, where the cost is $c(e^\circ) = 2.5$, $c(e^*) = 5$ (e^* is a given effort level that is necessary and sufficient for reaching the maximum possible level of compensation in each foreseen state, while e° is an insufficient effort level). So, we can define the possible result

If ω_1 , $x = 0, \forall e_i \in \{e^\circ, e^*\}$,

If ω_2 , $x = \begin{cases} 5 & \text{if } e^\circ \\ 10 & \text{if } e^* \end{cases}$

If ω_3 , $x = \begin{cases} 10 & \text{if } e^\circ \\ 20 & \text{if } e^* \end{cases}$

Furthermore, there is an exit option for the Agent. Instead of litigating the case, he can conciliate it, accepting an offer $x_a = 2$ from the counterpart. For him this option represents the minimum effort e_a , with a cost $c(e_a) = 1$. We can suppose that, by setting a relationship with the lawyer, the client makes a specific investment in collecting and communicating reserved information, without which in the relevant state of the world it wouldn't be possible to obtain the above-mentioned

compensation. This is a sunk cost. The Principal undergoes this sunk cost if he enters in the relation, $k = 1.5$, or he doesn't undergo it if he doesn't enter in relation, $k = 0$. This investment is non-monetary and can't be insured by the Agent, who instead insures the Principal against the risk of having to pay for the monetary costs of losing the case.

Let's now consider payoff functions (linear in the money for simplicity) of the two players, Principal and Agent

$$U_P = x - f, \quad U_A = f - c(e)$$

where f is the fee paid to the lawyer.

The hypothesis that the contractual regime is one of contingent fees is introduced in the model by setting $f = 0.5x$. The interaction between Principal and Agent is illustrated by the extensive form game represented in fig.1. In the first move the Principal decides whether to enter (k) or not ($-k$) in relationship with the Agent. If he doesn't enter, the game ends with the payoff (0,0) respectively for the Principal and Agent. If he enters, the Agent decides on his first move between accepting the conciliation proposal (a), which produces a minimum compensation $x_a = 2$, with payoff (0.5,0) due to the Principal's sunk costs, and litigating the case (l). If he decides to litigate, then Nature will select one of three possible states of the world $\{\omega_1, \omega_2, \omega_3\}$.

Anyway, the agent must choose the effort level (e° or e^*) that he will devote to the case, before knowing in which sub-tree he will act because of the state of the world chosen by Nature (in the information context outlined).

At the end-edges of the tree, we can see various possible compensations $\{x_1, x_2, x_3, x_4, x_5, x_6\}$ and the associated payoffs respectively for the Principal and Agent, calculated under the hypothesis that the conditional contract – which fixes $f = 0.5x$ – is in force between the Principal and Agent, in accordance with the functional form of the payoffs defined above (from which for the Principal the cost of entrance k is subtracted). I assume that the probability distribution of the states of the world is $p = \{0.2, 0.4, 0.4\}$, and both players know it.

Clearly, in this game there is a moral hazard problem: the Agent has private information about his own action (the choice of effort in litigating the lawsuit), which he must nonetheless choose on the base of his expected utility for each effort level,

given the distribution of probability of states of the world (he is therefore uncertain about what state of the world will occur). Besides the state of the world occurrence, the Principal is unsure about the effort level chosen by the Agent.. Under the hypothesis that the Agent decided to litigate the case, the Principal isn't able to deterministically infer the Agent's effort level just by observing outcomes: in particular, neither from the compensation $x_1 = 0$ nor from the compensation $x_3 = x_5 = 10$ can he deduce if e° or e^* . Special attention should be given to the Agent's first move of whether to conciliate or not: in this case the client perfectly knows the professional's effort level. In any way, the payoff structure isn't conditional upon effort and therefore the fact that the Agent's effort here is minimal doesn't implicate any sanction: conciliating the cause is one of the lawyer's possible decisions within the legitimate discretion of the professional in the management of the case, admitted that expected utility from the lawsuit is less than the reciprocal advantage of a settlement (however, the Agent's payoff net of effort is zero). Imperfect information, introduced by the choice of nature (N) in the game, enables us to represent the asymmetric information between the Principal and the Agent.

Remember that payoffs in this game are assigned in accordance with the contingent remuneration scheme. In order that the contingent remunerative scheme constitutes an efficient incentive mechanism against the Agent's moral hazard (which means that this scheme is able to induce the Agent to choose a high effort level), the following conditions of the Agent's incentives compatibility must be respected:

$$f(x_5|\omega_3, e^*) - c(e^*) \geq f(x_3|\omega_2, e^*) - c(e^*)$$

otherwise, given the inability to distinguish between the results x_3 and x_6 , in the state of the world ω_3 , the Agent would have incentive to say that the state was ω_2 and apply the effort e° , obtaining the payoff:

$$f(x_3|\omega_2, e^*) - c(e^\circ)$$

by which he will get the rent $\Delta = c(e^*) - c(e^\circ)$.

With a simple payoffs inspection it is possible to verify if such a condition is met. In order to calculate the equilibrium solution of this game under the incentive remuneration scheme, we should first consider Agent's expected payoffs resulting from his three possible strategic combinations $\{(l, e^*), (l, e^\circ), (a, e_a)\}$, given the

choice of the Principal to enter k , under the probability distribution p on the possible states of the world $\omega_i \in \Omega = \{ \omega_1, \omega_2, \omega_3 \}$

$$EU_A(k; p; l, e^*) = \sum_i p_i U_A(k, l, e^* | \omega_i) = 1$$

$$EU_A(k; p; l, e^\circ) = \sum_i p_i U_A(k, l, e^\circ | \omega_i) = 0.5$$

$$EU_A(k; p; a, e_a) = \sum_i p_i U_A(k, a, e_a | \omega_i) = 0$$

Second, consider the Principal's expected payoffs for the different possible strategic combinations:

$$EU_P(k; p; l, e^*) = \sum_i p_i U_P(k, l, e^* | \omega_i) = 4.5$$

$$EU_P(k; p; l, e^\circ) = \sum_i p_i U_P(k, l, e^\circ | \omega_i) = 1.5$$

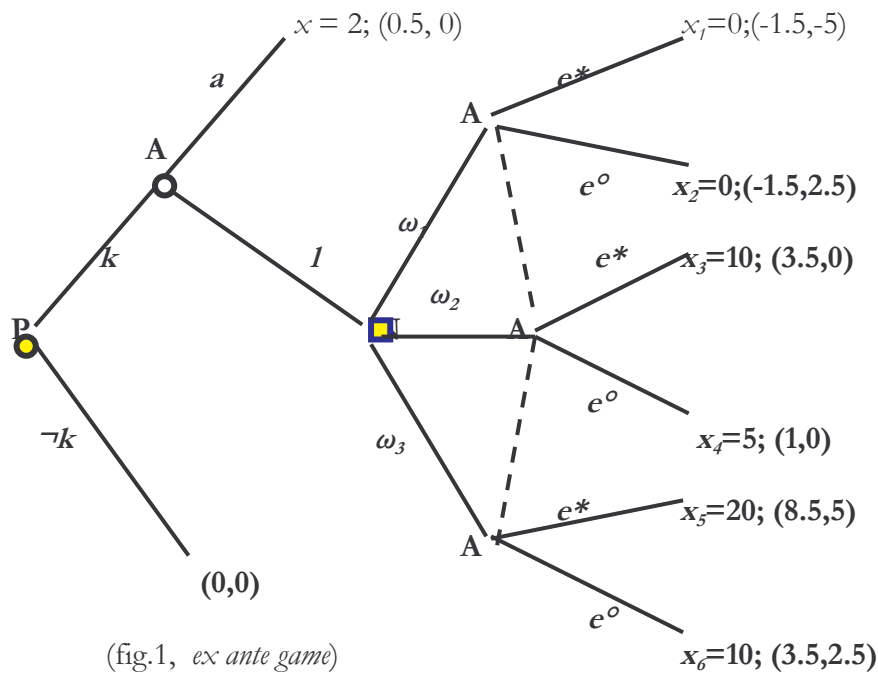
$$EU_P(k; p; a, e_a) = \sum_i p_i U_P(k, a, e_a | \omega_i) = -0.5$$

$$EU_P(-k; p; a, e_a) = \sum_i p_i U_P(-k, a, e_a | \omega_i) = 0$$

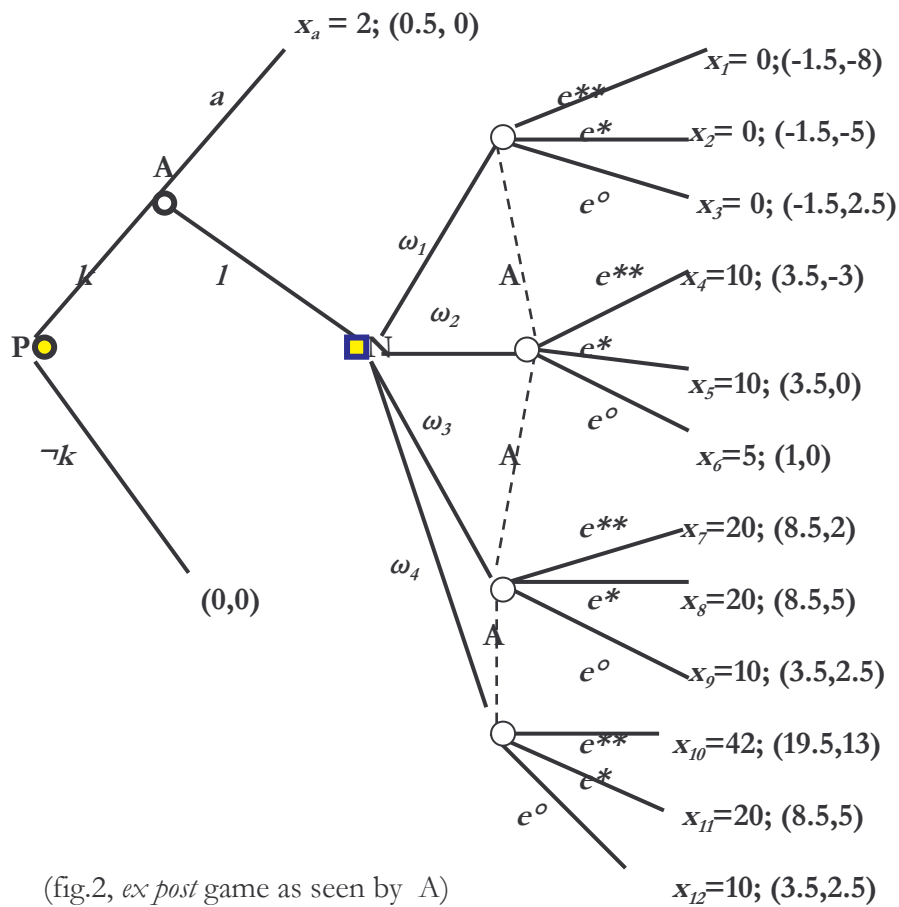
$$EU_P(-k; p; l, e^\circ) = 0$$

$$EU_P(-k; p; l, e^*) = 0$$

The solution is a Nash Bayesian equilibrium in dominant strategies $(k; p; l, e^*)$ under which the Principal enters and the Agent responds by choosing to litigate the case and to pursue it with high effort level. Hence in this simplified case in equilibrium the contingent remuneration scheme – which is provided by payoff functions - gives the Agent proper incentive to act according to the Principal's interests: the damage compensation is at a social optimum, even though the Agent gets some rent.



(fig.1, *ex ante* game)



(fig.2, *ex post* game as seen by A)

8. A thought experiment that “falsifies” the principal-agent model

Let’s now introduce the two typical hypotheses of my critical thought experiment.

(a) *Not just asymmetric but also incomplete information*

The game must now be seen under a situation of *incomplete information*: states of the world *ex ante* foreseen by the players don’t exhaust all the possible situations that effectively may occur once the relationship is established through Principal’s entrance (k). After Principal’s entrance, the Agent understands that there is a further possible state of the world. In fact, he receives information about the fact that an alternative state of the world ω_4 involves a result different from those he generally considered until that moment. Other than incomplete, the information is asymmetric in the sense that only the Agent learns this opportunity, whereas the Principal continues to perceive the situation as it was *ex ante*. In substance, the incomplete and asymmetric nature of information can be expressed by this statement: *ex ante* (before Principal entered) both see the game as represented in fig. 1; but, *ex post*, after Principal has entered, the Agent and not the Principal sees the game as represented in fig. 2. The peculiarity of the state of the world ω_4 is that it reveals the possibility of a compensation $x_{10} = 42$ as a consequence of an exceptional effort e^{**} made by the Agent with a cost $c(e^{**}) = 8$. *Ex ante* this effort level wasn’t accounted for as it wasn’t seen as necessary to obtain any available damage compensations under the possible states of the world. This can be considered, for example, the result of a preliminary investigation started off by the Agent, who discovers relevant facts about the counterpart (for example, evidence that wasn’t known by the client at first on the hazardous conduct of the counterpart who caused the damage, or the judge’s particular orientation in previous similar cases). The set of the *ex post* possible states for A is now expressed by:

$$\Omega_{A \text{ ex post}} = \{\omega_1, \omega_2, \omega_3, \omega_4\}$$

With a probability distribution $p_{A \text{ ex post}} = \{0.1, 0.2, 0.2, 0.5\}$

The principal isn’t able to learn the existence of such a possibility unless it isn’t signaled by the Agent through the related behavior which results in the outcome x_{10} .

(a) *Trade-off among simultaneous legal cases.*

The Agent is involved in two simultaneous contractual relationship with two different Principals, P1 and P2. He therefore has two analogous cases C1 and C2 in his portfolio. In both cases, the information for the two parties is perceived as incomplete, but *ex post* only in C1 the Agent learns that there is the possibility of an additional *ex ante* unknown state of the world ω_4 , which implies the possibility of a compensation exceptionally high conditioned upon an exceptionally high effort e^{**} . Therefore, in the Agent's eye the two cases are different *ex post*: C1 appears as the game in fig.2, while C2 remains in the configuration in fig.1. The two principals P1 and P2 still continue to see the cases as represented in fig.1, unless the Agent signals the existence of an additional state of the world by reaching compensation x_{10} . A relevant assumption is that the Agent's effort and productive capability is bounded from above by the maximal effort that he may put in litigating the two cases altogether. For instance

$$c_{max}(e) = 10$$

Consequently, if he decides to litigate both cases, then he is not able to employ the required effort e^{**} , which costs $c(e^{**}) = 8$. He could litigate a case with the highest required effort only if he decided to accept to conciliate one of the two cases. In fact, $c(e^{**}) + c(e_a) = 9 < c_{max}(e)$. But on the contrary $c(e^{**}) + c(e^*) = 13 > c_{max}(e)$, $c(e^{**}) + c(e^\circ) = 10.5 > c_{max}(e)$. So, while the occurrence of an unforeseen state improves P1's prospects, at the same time P2's prospects are not unchanged, but rather they worsen because it is not given that the Agent can litigate both cases if he takes advantage of the occasion in C1.

The fact that the contract is incomplete means that the Agent isn't bound by any clause to litigate at any level of predefined effort each case. He could also not litigate either and settle both. The contingent fee contract doesn't state *what* conduct the Agent should comply with – not even in terms of a general criteria – but rather just a payoff structure, such to indirectly induce the Agent's conduct. Since it is the lawyer who signals what events become possible as an effect of the learning process within the game. The client learns the unforeseen states of the world only due to lawyer's behavior. Therefore, the client is not able to discern between *ex ante* unforeseen the states of the world if not in the *ex post* perspective, i.e. after the Agent's choice.

Whether the incentive structure of contingent fees is able to induce efficient behavior and to align the Agent's behavior with the two principals' objectives must be ascertained.

It is now necessary to decide what the lawyer's best response would be in the two above situations. To this end, I will first calculate expected *payoff* in each game, for each case, and therefore the combined *payoff* of the two cases. I will identify the Agent's payoff function in the *ex post* perspective with $U_A^t(\cdot)$. In case C1 the Agent's expected *payoff* for the four *ex post* possible strategies, given the new probability distribution $p_{A \text{ ex post}}$ on the states of the world $\Omega_{A \text{ ex post}} = \{\omega_1, \omega_2, \omega_3, \omega_4\}$, are

$$\begin{aligned} EU_A^t(k; p_{A \text{ ex post}}; l, e^{**}) &= \sum_i p_i U_A^t(k, l, e^{**} | \omega_i) = 5.5 \\ EU_A^t(k; p_{A \text{ ex post}}; l, e^*) &= \sum_i p_i U_A^t(k, l, e^* | \omega_i) = 3 \\ EU_A^t(k; p_{A \text{ ex post}}; l, e^\circ) &= \sum_i p_i U_A^t(k, l, e^\circ | \omega_i) = 1.25 \\ EU_A^t(k; p_{A \text{ ex post}}; a, e_a) &= \sum_i p_i U_A^t(k, a, e_a | \omega_i) = 0 \end{aligned}$$

In case C2 the expected *ex post payoff* remain unchanged given the distribution p on the set of possible *ex ante* states $\Omega = \{\omega_1, \omega_2, \omega_3\}$, thus $EU_A^t = EU_A$

$$\begin{aligned} EU_A^t(k; p; l, e^*) &= \sum_i p_i U_A(k, l, e^* | \omega_i) = 1 \\ EU_A^t(k; p; l, e^\circ) &= \sum_i p_i U_A(k, l, e^\circ | \omega_i) = 0.5 \\ EU_A^t(k; p; a, e_a) &= \sum_i p_i U_A(k, a, e_a | \omega_i) = 0 \end{aligned}$$

The overall A's expected payoff of choosing the strategy l in the case C1 with the level of effort e^{**} , and at the same time choosing the strategy a in the case C2 is

$$EU_A^t[(k; p_{A \text{ ex post}}; l, e^{**} | C1); (k; p; a, e_a | C2)] = 5.5$$

while A's expected payoff of litigating both cases with a level of effort e^* is

$$EU_A^t[(k; p_{A \text{ ex post}}; l, e^* | C1); (k; p; a, e^* | C2)] = 4$$

As a result, once the two clients P1 and P2 have entered into a professional relationship paying the cost k , the Agent's best response in the two linked games is to litigate the case C1 and conciliate the case C2.

Let's now consider the *ex post* expected level of damage compensation for the principals. By this we intend the principal P1's expected payoff after she is informed by the Agent about the existence of possibility ω_4 while the principal P2', who faces the same game *ex ante* as well as *ex post*, has the same range of expected payoffs than in the previous example. Therefore I analyze here the clients' expected payoffs, as seen by the *lawyer* when he decides to undertake his own strategy, once the clients have entered in relation with him. The P1's expected payoffs are *ex post* effected by the possibility of the new state. Conditional on the Agent's various strategies, they are represented as follow:

$$EU_{P1}^t(k; p_{A \text{ ex post}}; l, e^{**}) = \sum_i p_i U_{P1}(k, l, e^* | \omega_i) = 10.55$$

$$EU_{P1}^t(k; p_{A \text{ ex post}}; l, e^*) = \sum_i p_i U_{P1}(k, l, e^* | \omega_i) = 6.5$$

$$EU_{P1}^t(k; p_{A \text{ ex post}}; l, e^\circ) = \sum_i p_i U_{P1}(k, l, e^\circ | \omega_i) = 2.3$$

$$EU_{P1}^t(k; p_{A \text{ ex post}}; a, e_a) = \sum_i p_i U_{P1}(k, a, e_a | \omega_i) = -0.5$$

P2's *ex post* expected payoffs conditional on the Agent's various possible strategies are the same as the case analyzed in the previous section. Hence, I now can calculate the total expected payoff jointly gained by the two clients under any possible strategy chosen by the Agent. Under the Agent's strategy $(l, e^{**} | C1; a | C2)$ the clients' joint expected compensation for damages is

$$EU_{P1}^t(k; p_{A \text{ ex post}}; l, e^{**}) + EU_{P2}(k; p; a, e_a) = 10.55 - 0.5 = 10.05$$

whereas, under the strategy $(l, e^* | C1, C2)$ it is instead

$$EU_{P1}^t(k; p_{A \text{ ex post}}; l, e^*) + EU_{P2}(k; p; l, e^*) = 6.5 + 4.5 = 11$$

Therefore, the two principals' utility for their expected total compensation is greater if the Agent chooses (l, e^*) in both cases than if he chooses (l, e^{**}) in C1 and (a) in C2.

Let's observe that this assessment of the joint prospect of the two client implies that some observer (or clients them-selves) is able to compare their utility numbers and summate them, i.e. this reflects a utilitarian view on social welfare based on comparable utilities. It is also the analysis that clients P1 and P2 could make as long as they were able to evaluate their situation in the perspective of the Agent's *ex post* strategy choice. Worded differently, it is the counterfactual reconstruction of their

expected utility associated with the Agent's linked strategies in the two cases C1 and C2 in light of an Agent's conduct that revealed the existence of ω_4 in C1. If principal P2 reconstructs his expected payoff under the hypothesis of the Agent's rational strategy choice, then he realizes that *ex post* he could only gain an expected *payoff* – 0.5. Consequently his perspective is radically changed compared to the moment in which he entered, only due to the muted situation of case C1, and although the structure of the game that represents the case he is interested in remained unchanged from the passage from the *ex ante* to *ex post* perspective. Before the specific investment k , after analyzing the expected result of both the games, he predicted having an expected *payoff* of 4.5 which was enough to make him invest in the case. Nevertheless, after the communication of the new possible states of the world transmitted by the Agent's choice, he realizes that once he is locked-in he not be able to get back his initial investment. Thus, if he had been able to anticipate this change deriving from the linkage of the two cases C1 and C2, the principal P2 wouldn't have entered into a professional relationship with the Agent.

However, to the end of calculating the equilibrium solution of the game, what counts is the state of information that the principals P1 and P2 have at the moment that they must choose their strategy. Given the representation of the problem *ex ante*, this leads them to select k in both the cases. The ensuing equilibrium under imperfect and asymmetric information is given by the *ex ante* P1 and P2's choice of investing k and hence their entry into both the cases C1 and C2, and hence by the Agent, in the perspective *ex post*, choosing (l, e^{**}) in the case C1 and (a) in the case C2. Nevertheless, in the counterfactual reconstruction that the clients P1 and P2 may carry out in light of the information revealed by the Agent's conduct, this combination of strategies doesn't coincide with what would be chosen if the information at their disposition had immediately been what they learned at the end of the game. In particular, the principal P2 would have chosen $-k$, staying out the case. What are the *ex post* efficiency properties resulting from the Agent's best response? In other words, does the Agent act so to maximize the social welfare *ex post*? In order to calculate this, we simply have to consider the sum of the two principals', P1 and P2, expected utilities and that of the Agent when the latter has to choose his strategy for C1 and C2, given that the two principals entered into the game. Again the

assumption is made that the three players' payoffs are comparable and the social welfare function is utilitarian. Under the Agent's best strategy, social welfare is

$$W = EU_A^t[(k; p_{A \text{ ex post}}; l, e^{**}|C1); (k; p; a, e_a|C2)] + EU_{P1}^t(k; p_{A \text{ ex post}}; l, e^{**}) + EU_{P2}^t(k; p; a, e_a) = 15.55$$

Otherwise, under the linked Agent's strategies (l, e^*) , social welfare is

$$W = EU_A^t[(k; p_{A \text{ ex post}}; l, e^*|C1); (k; p; a, e^*|C2)] + EU_{P1}^t(k; p_{A \text{ ex post}}; l, e^*) + EU_{P2}^t(k; p; l, e^*) = 15$$

Thus, the Agent's choice is – in utilitarian sense – efficient *ex post*. Nevertheless, two social welfare problems arise: (a) there is a distributive iniquity concerning the treatment of the two principals P1 and P2, such that P2 *ex post* can only regret having entered into relationship with the Agent – i.e. P2 complains about *unfairness* of his treatment. Because this is the consequence of a preference accorded to client P1's conflicting interest, she complains about *disloyalty* in the Agent's conduct, and as far as it amounts to subtracting effort from litigating his own case he also complains about a lack of *due care*. (b) If social welfare is attached just to the effects of the lawyer's action on the enforcement level of clients' legal rights, which are protected by liability rules – hence putting aside the lawyer remuneration from the social welfare calculation – then the Agent's rational behaviour in the context of incomplete information makes the level of rights enforcement *suboptimal*, because it leaves a Principal completely unsatisfied – i.e. this solution would not pass a *Pareto optimality* test, because the solution is not unanimous among the rights holders. Thus beyond a distributive unfairness, the amount of social welfare is also suboptimal in Paertian sense.

Nevertheless, the Agent's conduct is not only individually rational *ex post*, leading to a game equilibrium given the rational *ex ante* actions of principals P1 and P2, but it is also efficient in utilitarian sense, for it maximizes the sum of the players' utilities. We see this social efficiency in utilitarian sense (using the hypothesis of interpersonal utility comparability) from the fact that the Agent and principal P1 in the new context obtain jointly an additional rent such to earn more than what principal P2 loses.

9. The failure of personal Agent's compliance with deontology

It is quite immediate to recognize the solution the lawyer could devise simply by herself in order to solve problems (a) and (b), preserving efficiency and rationality in his behaviour. He could redress client P2 with a side utility payment to be added to client P2's expected *payoff* coming from the Agent's choice a of not litigating the case C2. Such integration would make the client P2 indifferent between the prospect that the Agent puts *effort* e^* in her lawsuit case and the prospect that he conciliates the same case. To this end, the lawyer must rely on his own *payoff* got from the choice to litigate the case C1 with effort e^{**} if it is great enough. Hence I call this conduct the *charitable professional solution*.

Because in order to make simpler utility comparisons I here assume that the lawyer and the clients are both neutral to risk, a side payment equal to 5 would leave client P2 in a state of indifference compared to what he had figured out in the moment in which he decided to enter into a relationship with the lawyer. The necessary condition is, however, one of the Agent's incentive compatibility

$$EU_A^t [(k; p_{A \text{ ex post}}; l, e^{**}|C1); (k; p; a, e_a|C2)] - T \geq EU_A^t [(k; p_{A \text{ ex post}}; l, e^*|C1); (k; p; l, e^*|C2)]$$

where T is the utility side payment that is transferred from the Agent to the principal P2 and makes the latter indifferent. In fact, the Agent's utility level when he litigates both the trial with effort e^* is the one under which the Agent cannot go without losing incentive to choose the strategy $[(l, e^{**}|C1), (a|C2)]$. Hence, it is necessary that the additional rent the Agent earns conciliating C2 and litigating C1 with maximal effort is not less than what makes P1 indifferent

$$\Delta_{P2} \leq \Delta_A$$

where

$$\Delta_{P2} = [EU_{P2}(k; p; l, e^*) - EU_{P2}^t(k; p; a, e_a)]$$

and

$$\Delta_A = \{EU_A^t [(k; p_{A \text{ ex post}}; l, e^{**}|C1); (k; p; a, e_a|C2)] - EU_A^t [(k; p_{A \text{ ex post}}; l, e^*|C1); (k; p; l, e^*|C2)]\}$$

A simple payoffs review demonstrates that the condition is not satisfied. In fact the Agent, under his best response strategy, obtains expected payoff 5.5, but the side utility payment that would leave P2 indifferent is 5, what would reduce the Agent to an expected payoff of 0.5. Instead, by adopting the alternative strategy $(l, e^*|C1, C2)$, the Agent could secure himself an expected payoff of 4. Let's remember that this is the appropriate Agent's incentive compatibility condition, because he chooses his strategy *ex post*, when the new possibility has been already revealed. However, whether for moral reasons the Agent had the willingness to take his *ex ante* expected utility (at the moment of signing the contract with the two Principals P1 and P2) as the adequate reference point for incentive compatibility, nevertheless the term $EU_A [(k; p; l, e^*|C1); (k; p; l, e^*|C2)] = 2$, substituted in Δ_A would not prevent that

$$\Delta_{P2} = 5 > \Delta_A = 3.5$$

As a consequence, the structure of the contingent contract doesn't allow the Agent the personal arrangement that I called the charitable solution, consisting of a side payment taken from his own fee to redress the client P2 from the Agent's choice to coalesce with principal P1 at the expense of P2. The structure of the lawyer's contingent remuneration therefore makes the lawyer's deontological conduct incompatible with his basic incentives, even when the latter has the willingness to maximize his own expected utility under the constraint of not damaging client P2 with respect to his initial expectations.

If, therefore, the lawyer were obliged for deontological reasons to pursue the interests of both clients, then he could only choose the inefficient strategy $(l, e^*|C1, C2)$, that doesn't allow him to take advantage of the disclosed opportunity thanks to learning *ex post* about the possible new state of the world. Let's call this Agent's conduct the *egalitarian professional solution*.

Hence, when the agent's deontological motivation is strong enough, we have an egalitarian but inefficient implementation of the contingent fees mechanism, because the individual incentive isn't consistent with the efficient allocation of the Agent's effort. But not litigating with effort e^{**} case C1, as far as it treat equally the two clients, may also be seen as a violation of the duty of *due care* toward client P1, who legitimately *ex post* claims to be redressed by a damage compensation proportional to the prospects of his individual case. In other word the Agent doesn't serve the best

interest of principal P1. Thus contingent fees, under the constraint of equality of clients' treatment, implies an infringement of a deontological obligation toward principal P1, as well as in the foregoing case, under the assumption of one-sided personal utility maximisation, it led to an infringement toward the principal P2 (an harder violation indeed, as it was associated with a betrayal of the initial expectation the principal had when he entered the contract and the generation of a sharp distributive inequality), which amounted to acting both *unfairly* and in *conflict of interests*.

According to the *ex ante* incentive mechanism logic whereby contingent fees are designed, this undesirable result should have been *ex ante* managed by providing the lawyer with a more intense incentive, i.e. giving him in every case a greater percentage of the damage compensation. But quite evidently this would simply mean treating the Agent's commitment to impartiality just as the utmost case of moral hazard, which materialises because of the Agent is endowed with particularly "expensive" moral preferences to the principal P1. The principal-agent relationship becomes more inefficient in so far the situation is one such that, in order to align the agent's incentives to the principal's goals, the latter must relinquish a larger share of the damage compensation to the professional.

Notice that these results are born from the hypothesis that the Agent's conduct could diverge from the simple maximization of his self-interest due to the adherence to some deontological obligation that requires the professional's interest be pursued within the limits of pursuing equally and impartially all his clients interests. However, the point is that from the observation of the agent's behaviour under the current contractual mechanism based on contingent fees, we cannot validate the hypothesis about the Agent's conformity to the deontological obligation of providing a side utility payment capable to redress principal P2. We only see an Agent that needs higher inducement in order to be convinced to carry out his highest effort in litigating the most remunerative cause, or otherwise we see just an inefficient implementation of the contingent fees contract which might be imputed to an insufficient level of the Agent's incentive.

In section 5 we saw that the institution of professional relationships depends on a parameter of conflict of interests between the client and the lawyer, taken as

exogenous. In this case, we see that it is the contingent contractual structure itself that leads to perverse incentives in the client-professional relationship, or to create a trade-off between the loyalty to client P1 and that to client P2. Efficiency and impartial respect of legal rights in this context come into conflict due to the contractual incentive structure wherein the Agent operates. As a consequence, to treat the client-professional relationship as an agency problem through an incentive contract leads to a professional's disloyalty (which is the legal equivalent to "moral hazard") toward at least one of his clients, and/or to the violation of social efficiency (in utilitarian sense). A result that may be included in the growing literature on the perverse effects of incentive contracts (see for example Frey 1997, Fehr, Klein and Schmidt 2001, Fehr and Gächter 2002).

10. Social efficiency and equal respect for all clients' rights

Does an alternative contractual arrangement exist where, if the Agent's behaviour were driven by fiduciary obligations to her clients, then this behavioural drive could manifest its positive effects? In other terms, does an institutional arrangement of the lawyer-client relationship exist such to allow using incomplete contract flexibility in order to exploit the opportunity represented by the state ω_4 in the mutual advantage of the Agent and the two principals P1 and P2?

Consider that if the Agent operated for a single Principal in two linked cases like C1 and C2, then the latter could be redressed for the lawsuit conciliated by to the additional rent accruing her from the possibility of winning the case C1 in the unforeseen state. Actually, if in order redressing the gain lost in the second case C2 the damage compensation from case C1 can be involved, then the conditions for the Principal's acceptance of conciliating the case C2 are guaranteed by the fact that, under the obvious hypothesis of intrapersonal comparable utilities, the client gets more from case C1 than what he loses in C2. Under the more requiring hypothesis of interpersonal utility comparability, we can try to transfer this reasoning to the side payment between Principals P1 and P2. In this case the Agent can use the total damage compensation obtained from all the litigated and not litigated cases to generate all the clients' payoffs. This means that he can use the compensations

obtained in the case C1, litigated in behalf of the client P1, to redress client P2 for the lack of compensation in case C2. Resorting to total compensation allows then a side payment which makes P2 indifferent between litigating or not case C2 - taking as reference point what principal P2 would have expected from litigating his case with effort e^* -, and at the same time to satisfy the Agent's condition of incentive compatibility . This amounts to requiring

$$\Delta_{P2} \leq \Delta_{A+P1}$$

where

$$\Delta_{P2} = [EU_{P2}(k; p; l, e^*) - EU_{P2}^t(k; p; a, e_a)]$$

and

$$\Delta_{A+P1} = \{EU_A^t [(k; p_{A \text{ ex post}}; l, e^{**}|C1); (k; p; a, e_a|C2)] + EU_{P1}^t (k; p_{A \text{ ex post}}; l, e^{**})\} \\ - \{EU_A^t [(k; p_{A \text{ ex post}}; l, e^*|C1); (k; p; l, e^*|C2)] + EU_{P1}^t (k; p_{A \text{ ex post}}; l, e^*)\}$$

which is obviously satisfied. Let's call this conduct the *ethically responsible professional* solution.

This solution is made difficult however by the fact that the lawyer should be able to decide how to distribute *ex post* the compensation among himself, the client P1 and the client P2 as well. But *this is not allowed by the contingent contract structure*, according to which the more “lucky” client has right to a prefixed percentage of the damage compensation obtained in his case independently of the outcome. If, on the contrary, the lawyer had formal authority in the *ex post* decision about the division of total damage compensation between clients, he could make some redress across them. This implies that the lawyer manages the damages compensation for different lawsuit like a trustee of a mutual fund, to which the clients confer the cases. He exercises all the decisional rights concerned by his authority position, but he acts in favour of the clients as beneficiaries, to whom he grants no less compensation than the expectations they had before entering into the fiduciary relationship, plus a rent depending on the profitability of their case.

In a nutshell, exercising deontology requires more discretion than what the contingent contract allows, because the latter does not allow *cross subsidization* between clients and cases. Still, the professional's higher discretion requires *ex post accountability* in terms of professional's compliance with deontology obligations to act loyally and

impartially towards both clients. The scheme of the proposed solution in fact is the following:

- a. A fiduciary relationship with an obligation owed to each client of pursuing her best interest is set, which is constrained by a symmetric obligations owed to third parties, other clients included, requiring the Agent to grant fair and impartial treatment of all clients;
- b. the lawyer is allowed to settle *ex post* the amount of damage compensation due to clients and *his own fee* , under the constrain that these decisions have to satisfy loyalty and fairness obligations owed to all clients;
- c. the lawyer conciliates the less advantageous case and obtains the maximum compensation from C1;
- d. the lawyer redresses client P2 by a side payment taken away from the compensation of case C1, in such a way to grant her a payoff equal to $EU_{P2}(k; p; l, e^*)$. On the remaining compensation a proportional fee will be applied according to the existing arrangement among the parties.

That is equivalent for the lawyer to have the authority to bargain *ex post* the fee with the “lucky” client in such a way to have at his disposal enough resources to redress the “unlucky” client. Given that the lawyer acts with respect for the deontological obligations, this would allow her to respect fairly the claims of the “lucky” client as well. A logical reference point for fairly adjudicating these diverse claims is the *ex ante* hypothetical contract in which the professional would have committed herself to all clients with the obligation of pursuing their interests according to the reasonable expectations that have led them to enter into the relationship with the professional. If *ex post* unforeseen events show up causing a potential welfare surplus, such opportunities could be utilized only under the condition that their exploitation could have been agreed upon also in the *ex ante* perspective, which means that these opportunities do not cause detriment to any of the parties. It is reasonable that in the *ex ante* perspective, in case it were predicted that there was such a large profit in C1 to suggest conciliating the case C2, the client P2 would have consented to this course of action, as long as it was mutually advantageous for all the clients, he included. A

redress such that the client P2 becomes indifferent between litigating or conciliating her own case, defines the condition for her to accept such an eventuality.

According to this model, remunerations of the professional and the clients are understood as the result of a three players cooperative game for their mutual advantage. It is quite obvious that the Agent carrying out effort e^{**} must be paid a payoff not lesser than when he carries out effort e^* . At the same time it must be recognized that the client P1's case C1 is what allows maximizing the aggregate compensation, which amounts to saying that player P1's contributes the opportunity ω_4 to the cooperative surplus. Hence quite naturally player P1 claims most of the surplus associated to the possible state ω_4 with respect to the baseline compensation obtainable in the alternative less profitable states. But player P2 seems to have a veto right. The *ex ante* contract obliged the lawyer to litigate both cases in order to grant each client i at least the expected payoff $EU_{P_i}(k; p; l, e^*)$. Thus she is who must permit the lawyer to put aside case C2 in order to be able litigating with highest effort case C1, and she will afford such a permission only whether this will grant herself at least the *a priori* expected payoff.

11. Conclusion

Let's conclude with some remarks on what has been shown so far. As far as the arrangement of the professional's remuneration (put forward in the last section) is concerned, everything depends on whether the conduct complying with fiduciary obligations is performed in equilibrium. It is obvious that whenever this condition is not met and if we do not have any explanation of the rationality of respecting an obligation like as "maximize your utility under the constrain of maximal impartial pursuing of all the clients' interests", then the contractual arrangement with higher professional's discretion would involve a greater space for the Agent's abuse of his (formal and real) authority. The professional could try to completely appropriate the surplus associated with the new opportunity revealed by the state of the world ω_4 , leaving the client P1 barely with what she expected at the moment she entered the professional relationship and at the same time without *ex post* redressing the client P2. In fact, the client P1 would receive a damage compensation identical to what she

would receive if her case had the structure of a game like that shown in fig.1, so that her payoff wouldn't reveal to herself and the client P2 the existence of an opportunity like ω_4 .

Therefore, in order to sustain a professional authority relationship, the hypotheses introduced in sections 4.3 and 5 about conformist preferences for the existence of the professional's authority relationship are crucial. A full fledged modeling of conformist preferences of the professional community as well as the single professional, would show the following. Granted indifference with the material payoff the Agent gets by carrying out effort e^* , he has a positive psychological incentive to implement cross redressing between the clients. Moreover the professional would also be ready to give up part of his material surplus in order to make room for a fair redress of the "unlucky" client. The necessary condition for the existence of such a *psychological Nash equilibrium* (for general reference see Genakopulos et al. 1989, Rabin 1993 and also Grimalda and Sacconi 2005) would be that the renounce in terms of material payoff is not too high with respect to the gain in term of psychological utility, which ensues from the conformity to a deontological code as far as it is believed to be complied with by the whole profession.

It should be admitted that considering professional ethics just as ineffective "cheap talk" and mere "window dressing", without any relation to the reasons for clients accept the profession's authority, is quite an unrealistic explanation of a phenomenon lasting from the very beginning of the professions as social institutions. A more realistic approach is to maintain that professionals' conduct follows the general hypothesis of motivational complexity. According to this hypothesis at some extent self-interest is paired off with a disposition to conform deontological obligations owed to clients, as far as these are agreed upon and accepted by the professional community and there are shared expectations of their observance on the part of the other members of the profession.

Institutions and contractual arrangements however matter in fostering or depressing these alterative motivations. The main conclusion I have reached in this essays in fact is that as long as the ongoing contractual structure asks for professionals' remuneration contingent upon outcomes, professional deontology cannot show any effectiveness in directing the professionals' conduct.

In the first case (section 8) according to individual rationality meant as the agent's participation condition, and given self-interested maximization of the Agent's payoff, we are lead to violate fairness of treatment and loyalty toward client P2. In the second case (section 9), admitting just a minimal condition of individual rationality as incentive compatibility, not only utilitarian efficiency is violated but also the right of the client P1 to a diligent treatment of his case.

In the third case (sec.10), an institutional and contractual mechanism, allowing for more discretion but also for compliance with all fiduciary duties, is presented. It is consistent with the hypothesis that the professional is motivated by conformist preferences for reciprocal compliance with fiduciary obligations. But the arrangement under which (admitted conformist preferences) all the deontological tenets are satisfied - i.e. *equality* and *impartiality* of treatment for all the clients, *loyalty* and *due care* in discharging professional obligations owed to each clients - reaches this goal simply violating the requests inherent in the contingent fees mechanism. In fact this mechanism does not permit pooling ex post the damage compensations gained by litigating distinct cases belonging to different clients, and distributing them according a fairness criterion.

Hence contingent fees make their behavioral hypothesis about the prevailing selfishness of professionals a self-fulfilling prophecy. Starting from this assumption, and by institutionalizing contingent fees as remuneration scheme for professional services, what is obtained is necessarily the same as the premise. In equilibrium any conduct conforming effectively to a professional obligation of impartial and loyal pursuing of the best interests of all his clients cannot be observed.

References

- A.G.C.M, (1997), *Indagine conoscitiva sulla regolamentazione dei servizi professionali*, Roma.
- Aghion P., Tirole J. (1997), "Formal and Real Authority in Organisations" *Journal of Political Economy*, vol. 105, n.11. pp.1-29.
- Alpa G. (1996), "Autodisciplina e codice di condotta" in P.Zatti (a cura di), *Le fonti di autodisciplina*, CEDAM, Padova.

- Arrow K. (1963), "Uncertainty and the Economics of Medical Care", *American Economic Review*, vol. 53, pp.941-973.
- Bayles M. (1981), *Professional Ethics*, Wadsworth, Belmont Calif.
- Benson Sir H. (1979), *Final Report of the Royal Commission on Legal Services (I & II)*, Cmnd 7648, London, HMSO.
- Bowels R. (1994), "The Structure of the Legal Profession in England and Wales", *Oxford Review of Economic Policy*, vol.10, n.1, pp.18-33.
- Broadbent J., Dietrich M., Robert J. (eds.) (1997), *The End of the Professions? The Restructuring of professional work*, Routledge, London.
- Camerer C., G. Lowenstein, M. Rabin (eds.) (2004), *Advanced in Behavioral Economics*, Russell Sage Foundation, Princeton.
- Cooter R.D., Rubinfeld D.L. (1989), "Economic Analysis of Legal Disputes and Their Resolution", *Journal of Economic Literature*, 27, pp.1067-1097.
- Curran C. (1998), "Regulation of the Professions", *The New Palgrave Dictionary of Economics and the Law*, (P.Newman ed.) McMillan, London, vol. 3, pp.247-254
- Danovi R. (1993), *Il codice deontologico forense*, EGEA, Milano.
- Danzon P.M. (1983), "Contingent Fees for Personal Injury Litigation", *Bell Journal of Economics*, 14, pp.213-24.
- Davis M. (1987) "The Moral Authority of a Professional Code", in *Authority Revised*, NOMOS XXIX Pennok and Chapman (eds), New York Univ. Press, N.Y.
- Dietrich M., J Roberts, (1997) "Beyond the Economics of Professionalism" in *The End of The Professions?*, Broadbent, Dietrich and Roberts (eds), Routledge, London.
- Dondi A. (a cura di) (1993), *Avvocatura e giustizia negli Stati Uniti*, Il Mulino, Bologna.
- Dzienkowski J.S. (ed.)(1996), *Professional Responsibility Standard, Rules, Statutes*, (1996-97 Edition), West Publishing Co., St.Paul, Minn.
- Easterbrook F.H., Fischel D. (1993), "Contract and Fiduciary Duties", *Journal of Law & Economics*, XXXVI, pp.425-451.
- Falk A. and U. Fishbacher (2001), *Theory of reciprocity*, April 2001 Institute for Empirical Research in Economics Working Paper No. 6; CESifo Working Paper Series No.457
- Flannigan R. (1989), "The Fiduciary Obligation", *Oxford Journal of Legal Studies*, 9, pp.285-294.
- Fher E., A.Klein, K.M. Schmidt (2001) *Fairness, incentives and contractual incompleteness*, CESIFO Working paper, n.445, Munich. Germany.
- Fehr E., K.M. Schmidt (2000), "Fairness Incentives ad Contractual Choices", *European Economic Review*, vol. 44.

- Fehr E., S.Gächter (2002) , *Do incentive contracts Undermine voluntary cooperation?*, Institute of empirical research in economic, Working paper n.34, Univ. of Zurich.
- Frankel T. (1998), “Fiduciary Duties”, *The New Palgrave Dictionary of Economics and the Law*, (P.Newman ed.), McMillan, London, vol. II, pp.127-132.
- Frey B. (1997), *Not just for the money*, Edward Elgar, Brookfield.
- Fudenberg D. (1991), “Explaining cooperation and commitment in repeated games”, in J.J.Laffont (ed.) *Advances in Economic Theory, 6th World Congress*, Cambridge U.P., Cambridge.
- Geanakoplos, J. Pearce, D. and Stacchetti, E. (1989), “Psychological Games and Sequential Rationality”, *Games and Economic Behavior*, Vol. 1, pp. 60-79.
- Gintis H., S. Bowles, R. Boyd and E. Fehr (eds.), (2006), *Moral Sentiments and Material Interests*, MIT press, Cambridge Mass.
- Grimalda and Sacconi (2005) “The Constitution of the Not-For-Profit Organisation: Reciprocal Conformity to Morality”, *Constitutional Political Economy*, Vol. 16(3), September, 2005, pp.249-276
- Gravelle H.S.E., Waterson M. (1993), “No Win, No Fee: Some Economics of Contingent Legal Fees”, *The Economic Journal*.
- Grief A., Milgrom P., B.R.Weingast (1994) “Coordination, Commitment and Enforcement: The Case of Merchant Guild”, *Journal of Political Economy*, vol.102, n.41, pp.745-775.
- Grossman S. e Hart O. (1986), “The Costs and Benefit of Ownership: A Theory of Vertical and Lateral Integration" , *Journal of Political Economy*, 94, pp.691-719.
- Hansmann H. (1988) “Ownership of the Firm”, *Journal of Law, Economics and Organisation*, 4, 2, pp.267-304
- Hart O. (1995) *Firm, Contracts and Financial Structure*, Clarendon Press, Oxford,.
- Hart O., Moore J. (1990), “Property Rights and the Nature of the Firm”, *Journal of Political Economy*, vol. 98 n.6 pp.1119-1158.
- Koehn D. (1994), *The Ground of Professional Ethics*, Routledge , London.
- Kreps D. (1990) “Corporate Culture and Economic Theory” J.Alt and K.Shepsle (eds.), *Perspectives on Positive Political Economy*, Cambridge U.P., Cambridge.
- Maskin E. and J.Tirole (1999) “Unforeseen contingencies and Incomplete Contracts”, *The Review of Economic Studies*, 66(1) No. 226, pp. 83-114
- Mattews R.C.O. (1991), “The economics of professional ethics: Should the professions be more like business?” *The Economic Journal*, 1010, pp.737-50.
- Pratt J.W., Zeckhauser R.J. (1985), *Principals and Agents: The Strucutre of Business*, Harvard Business School Press, Boston Mass.

- Rabin M., (1993), "Incorporating Fairness into Game Theory and Economics". *The American Economic Review* 83(5),1281-1302.
- Raz J. (1985) "Authority and Justification" *Philosophy and Public Affairs*, 14.
- Rickman N. (1994), "The Economics of Contingent Fees in Personal Injury Litigation" *Oxford Review of Economic Policy*, vol.10, n.1, pp.34-50.
- Sacconi L. (1999) "Fondamento ed efficacia delle deontologie professionali", S.Zamagni (a cura di) *Le professioni intellettuali tra liberalizzazione e nuova regolazione*, EGEA, Milano, pp.21-96
- Sacconi L. (2000) *The social contract of the firm*, Springer, Berlin, pp.230
- Sacconi L (2004), "Efficiency of the non profit Enterprise: Constitutional Ideology, Conformist Preferences and Reputation" in B.Hodgson (ed.) *The Invisible Hand and the Common Good*, Springer, Berlin, pp. 207-256.
- Sacconi L. (2006), "CSR as a model of extended corporate governance, an explanation based on the economic theories of social contract, reputation and reciprocal conformism", in F. Cafaggi (ed.), *Reframing self-regulation in European private law*, Kluwer Law International, London.
- Sacconi L and G. Grimalda (2007) "Ideals, conformism and reciprocity: A model of Individual Choice with Conformist Motivations, and an Application to the Not-for-Profit Case" in P.L. Porta and L.Bruni (eds.) *Handbook of Happiness in Economics*, Edward Elgar (in print)
- Sacconi L (2007), "Incomplete contracts and corporate ethics: A game theoretic model under fuzzy information" , in F.Cafaggi, A.Nicita and U.Pagano (eds.) *Legal Orderings and Economic Institutions*, Routledge, London
- Salaniè B. (1997), *The Economics of Contracts*, A Primer. The MIT Press, Cambridge Mass.
- Schwartz M.L., Mitchell D.J.B. (1970) "An Economic Analysis of the Contingent Fees and Personal Injury Litigation" , *Stanford Law Review*, 22, pp.1125-62
- Simon H.(1951), "A Formal Theory of Ownership Relationship", *Econometrica*, 19, pp.293-305.
- Swanson T.M. (1991), "The Importance of Contingent Fee Arrangements", *Oxford Journal of Legal Studies*, 11, 193-226.
- Tirole J. (1999), "Incomplete contracts: where doe we stand?", *Econometrica*, 67, 4, pp.741-781.
- Weber M. (1974), *Economia e società*, (trad. it.) Edizioni di Comunità, Milano.
- Williamson O.(1986), *The Economic Institutions of Capitalism*, The Free Press, New York,

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