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Agency Models in Law and Economics

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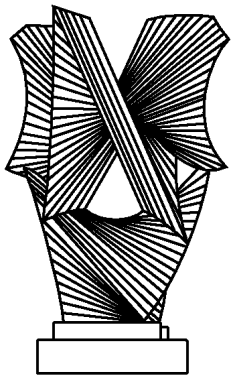

The Coase Lecture
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Agency Models in Law and Economics

Eric A. Posner

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The Coase Lecture Series

The Coase Lecture Series, established in honor of Ronald H. Coase, Clifton R. Musser Professor Emeritus of Economics at the University of Chicago Law School, is intended to provide law students and others with an introduction to important techniques and results in law and economics. The lectures presuppose no background in the subject.

Coase Lecture: Agency Models in Law and Economics

Eric A. Posner[1]

I. The Basic Theory.

This lecture is about agency models and agency relationships. An agency relationship, in its simplest version, is a relationship in which one person, the "principal," benefits when another person, the "agent" performs some task with care or effort. I will start with an example, then discuss the theory, and then talk about legal applications.

Suppose that you want to sell your house. You have no experience selling houses, and you don't have the right contacts, so you hire a real estate agent. You want the agent to use as much care or effort as possible to sell your house. You want her to show the house to as many potential buyers as possible, to lavish it with praise, to prod buyers to make generous bids, to display its charms while minimizing its defects. But you know that the agent might not want to work as hard as you want her to work. She might prefer working 9 to 5, when in fact the best time to contact potential buyers is in the evening when their defenses are down. But the agent is tired in the evening, and would rather play with her kids than call buyers. She might want to take frequent breaks during working hours; she might avoid your house because it is a little farther away than the other houses that she sells; she might be lazy, as far as you know. Maybe, she has a side business -- an internet startup, no doubt -- on which she would rather spend her time. Your problem, then, is to figure out a way to get the real estate agent to work hard for you, when she might prefer to do other things, and do the bare minimum for you.

Now, one possibility is to monitor the agent and fire her if she does not do a good enough job. But how exactly would you monitor her? You have work to do, and can't follow her around to make sure that she is showing your house to her clients. If you are devious, you might set up a voice-activated tape recorder in your house, so at least you can determine, when you get home from work, whether the agent ever stopped by, and whether she does a good job of praising your house. But suppose you find out that she has stopped by only once the day before, you confront her, and she responds that her clients on that day all preferred to see a less expensive house. How do you know whether she is lying or telling the truth?

Another possible solution to this problem -- which is generally called an agency problem -- is to wait a while and see if the house is sold, and fire the agent if it is not sold. But suppose you wait a month and the house is not sold. You ask the agent why, and she says that currently the market is down, but it may come alive again at any moment. She knows that some people would buy your house at a low price, but she is confident that if she waits a little longer, she will be able to find someone who will pay you more. Again, unless you are an expert about the housing market, and we will assume that you are not, it will be difficult for you to evaluate the agent's claims. The problem, as before, is that you cannot directly observe the agent's efforts, and you cannot infer them from the outcome of her work -- the sale or non-sale of your house within a certain time -- because you do not know the influence of luck and other extraneous factors on the sale of your house.

There is a solution to this problem, or at least a partial solution, and that is to design a contract that gives the agent the right incentives to use effort in selling your house. What should

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this contract look like?

To keep the example clear, let's make some simplifying assumptions. First, let's assume that the agent can take two levels of effort -- high or low. The agent prefers to take the low level of effort, everything else equal. And let's assume that the house will be sold either for a high amount (say, $200,000) or a low amount (say, $100,000). If the agent engages in a high level of effort, the house will more likely (say 90%) be sold for the high amount; and if the agent engages in a low level of effort, the house will more likely (say 90%) be sold for the low amount. But the key fact is that some luck is involved, so a high-effort agent might sell the house for $100,000 because of low demand (with 10% probability), and the low-effort agent might sell the house for $200,000 because of high demand (with 10% probability) -- and demand is not observable by you, the seller, who is known as the "principal" in the model we are discussing.

Second, let's assume that the agent is risk-averse. This means that the agent prefers, say, $100 to a 50-50 chance of receiving a payoff of $200 or 0. This is a reasonable assumption. The real estate agent owns her own home, and has to make mortgage payments on it. She needs food for her children. If in a particular month, she does not receive any income, she will default on her mortgage, lose her house, and so on. So she would be willing to give up a little money in order to ensure a relatively steady stream of income over time. She would rather earn $3000 every month than $3100 on average every month where some months she receives much more and some months she receives much less.

Finally, let's add some nonessential structure to the problem. Let's assume, contrary to fact, that your house will definitely be sold one month after you put it on the market -- either at the high price or the low price. You can hire one real estate agent, and can design any contract you want. If you don't hire an agent, you sell the house by yourself, and because you have no idea how to do this, you would net only about $80,000. The agent must be paid some minimum amount; otherwise, she will look for some other job. Let's say this minimum amount is $3000 for a month of work, assuming that she gets that amount with certainty and does engage in high effort. If she engages in low effort, $2000 will be adequate compensation. If there is some risk that she will get less than that amount, she will demand a larger amount in expected value terms. And let's assume that you, the principal, are risk-neutral.

Given these assumptions, how should you design your contract with the agent?

A nice way to answer the question is to produce a baseline contract that assumes away all of our agency problems, then relax those assumptions. In other words, suppose that you have perfect information about what the agent does, so you know exactly how much effort she takes. Then the optimal contract is this: $3000 for the agent if she uses high effort, and $0 otherwise.

Why is this the optimal contract? First, you pay the agent the least amount of money that you can get away with, namely $3000. Second, you ensure that she will engage in high effort. She prefers $3000 with high effort, to $0 with low effort, so she will work in order to get paid. Third, you ensure that she will accept this contract rather than going elsewhere for work. We assumed that the agent does better by receiving $3000 with high effort, than whatever she can get elsewhere. And we don't have to worry about her risk aversion: she knows that if she engages in high effort, she will be paid $3000 with certainty. While you can't be sure that your house will be sold at the high price -- remember that luck can't be eliminated entirely -- you do ensure, at least cost, the highest probability that your house will be sold at that high price.

But this optimal contract can only be taken as a baseline, because it wouldn't work in the real world, where you can't directly observe the effort level of the agent. You wouldn't be able to say to her, "I'll pay you only if you engage in high effort," because she would reply, "how would you know whether I engaged in high effort?" So let's consider some alternatives.

The flat-rate contract. One possibility is to pay the agent a flat rate. You might, for example, promise to pay the agent $50 per hour. An alternative is to pay the agent $3000 when the house is sold. Let's stick to the last possibility. Is this a good idea?

The answer is no. The agent knows that she will receive $3000 regardless of whether the house is sold for the high price or the low price. Thus, the amount of effort she uses will have no influence on the amount of compensation she receives. But we know that she prefers to engage in low effort, rather than high effort, so we know that she will choose to engage in low effort. But you want her to engage in high effort, so you should consider an alternative contract.

The high-power incentive contract. Another possibility is to pay the agent an amount that increases with the sale price. A simple example would be: pay the agent $3000 if the house is sold for a high price and $0 if the house is sold for a low price. (Notice the difference between this contract and the baseline, full-information contract of $3000 if the agent uses high *effort*, and $0 otherwise.)

This contract would give the agent an incentive to engage in high effort. If she does not, she most likely receives 0, which we assume does not compensate her even for low effort. More precisely, as long as the agent prefers a 90% chance of $3000 (given high effort) to a 10% chance of $3000 (given low effort), she will engage in high effort. But we face two further problems. First, remember that the agent needs to get $3000 if she puts in a high level of effort. But there is a chance that even with a high level of effort, the house will fetch a low price. You need to give her at least $3000 in expected terms. So if there is a 10% chance that a high level of effort will result in a low price, you need to pay the agent at least $3333 if the house is sold at the high price.

Second, and more important, remember that the agent is risk-averse, and would accept $3000 only if she can expect it with certainty. But the current contract, while giving her $3000 in expected terms, forces her to bear the 10% risk of receiving no payment, that is, when the house is sold at the low price. She would not agree to such a contract unless you paid her much more than $3000 in expected terms. Maybe, you would have to pay her $4000 if she sells the house at a high price, in which case her expected payoff would be $3600.

In sum, under the high-powered contract you pay the agent a lot of money -- $4000 -- with a 90% probability, so you expect to pay her $3600. She engages in high effort, so you maximize the likelihood that your house will be sold for a high price. But can you do better?

The mixed contract. The final possibility is to give the agent both incentives to engage in high effort and insurance against a bad outcome -- what I will call a "mixed contract." The contract might say: pay the agent $3400 if the house sells for a high price, and pay the agent $1000 if the house sells for a low price. Although the numbers are arbitrary, as they depend on unspecified parameters such as the degree of risk-aversion on the part of the agent, they illustrate the basic point. By making the compensation higher when the good outcome occurs, you give the agent an incentive to engage in high effort. By giving the agent some money even if the bad outcome occurs, you give the agent some insurance against bad luck. Because she receives some money in the bad state of the world, she will feel secure against her fear of missing a mortgage payment, and so won't demand quite as much money in the good state of world, where she is able to sell the house at a high price. You get high effort from her, but because you agree to bear some of the risk, you don't have to pay her as much as under the high-power contract ($3160 rather than $3600 in expected terms).[2]

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[2] If the agent is risk neutral, then optimal contract will pay her $13,000 if the house sells for a high price; and *she* will pay the *principal* $87,000 if the house is sold for the low price! To see why, note that the principal would be happy to sell the house to the agent for its expected value given high effort, while compensating her for that effort:

Actual real estate agents usually earn a percentage commission, like 6%, on the sale. This contract is similar to what the agency model predicts, but not exactly. Note that there is an incentive to work hard, because the agent's compensation increases with sale price. And there is some insurance: the agent receives something as long as the house is sold. But when effort is continuous and there is a chance of no sale, as is the case with the real world, one would predict something else. One would expect the percentage to increase with the sale price. If it takes a tremendous amount of effort to sell your lousy house for more than $200,000, then it makes sense to give the agent a higher percentage of the surplus over that amount. And if there is a chance of no sale, then it might make sense to give the risk-averse agent a small base fee (like $500 per month) and percentages above that depending on the sale price. But we do not observe these contracts, and the reason is that the agency model so far described is too simple.[3]

II. Some General Observations and Some Complications.

Now let's pull back a bit and look at what we've learned. Then we'll talk about some complications -- or reasons why you should take this model with a grain of salt.

An agency relationship is a relationship between two people, one of whom (the "principal") benefits when the other (the "agent") performs some task. The principal benefits more when the agent takes care or uses effort when performing the task, than when the agent fails to take care or use effort. The agent, however, would rather not go to the effort unless she is compensated for that effort. If the principal can observe the agent's level of effort, then the principal will pay the agent to engage in the proper level of effort, and if the payment is large enough, the agent will engage in the proper level of effort. But if the principal cannot directly observe the agent's level of effort, we have what is called an agency problem. The agent might engage in low effort, or what is often called "moral hazard." The agent might promise to use effort, but unless the principal can observe the level of effort, the agent's promise is not enforceable, so the principal has no reason to believe the agent's promise.[4]

Although there is a tension between the principal's and the agent's goals, this should not be exaggerated. The agent will work if paid enough; and the principal may benefit enough by the agent's work that he would be willing to pay the agent enough. Even if the agent is highly risk-averse, and monitoring is very costly, the parties will be able to make a deal, as long as the gains from trade are high enough that they can compensate each party for his or her costs.

We've learned that in any agency relationship, the basic problem is that the principal wants the agent to work hard, but the agent doesn't want to work hard, and because information problems are ubiquitous, the principal cannot directly reward the agent who works hard and penalize the agent who does not work hard. If the principal pays a flat amount under these conditions, the agent will engage in little effort (called "moral hazard"). Compared to the baseline hypothetical contract -- where the principal compensates the agent for engaging in the right amount of effort -- there is an efficiency loss, which is called the "agency cost." If there were no agency costs, the efficient or first-best outcome can be obtained; because of agency costs, it cannot. But if

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so $190,000 - $3000 = $187,000. The agent will use high effort, and net $13,000 with 90% probability ($200,000 - $187,000); and lose $87,000 with 10% probability ($100,000 - $187,000). In expected terms, the agent receives $3000. This is the same as the contract described at the beginning of this footnote.

[3] See Karen Eggleston, Eric A. Posner, and Richard Zeckhauser, Simplicity and Complexity in Contracts (manuscript, University of Chicago Law School, 2000).

[4] The clearest sophisticated treatment of the agency model that I have seen is David M. Kreps, A Course in Microeconomic Theory ch. 16 (1990), which also contains a bibliography of the economic literature on the subject. See also Bernard Salanié, The Economics of Contracts: A Primer (1997).

we figure out ways to reduce agency costs, we increase efficiency.

Principals want to minimize agency costs (and the agent wants the principal to minimize agency costs, to the extent that she will share the savings). There are two main ways of doing this. The first is what we've been discussing: design a contract that makes compensation depend on the output of the agent. As output rises, so should compensation. Notice that the principal does not need to know the actual level of effort; he simply looks at the amount of output, which should be easily verifiable. The problem is that if the agent is risk-averse -- and this will almost always be the case -- the agent will demand insurance against unlucky outcomes. So the principal might offer a mixed contract containing both insurance and incentives.

The second way of reducing agency costs is to invest in monitoring. Employers do this all the time. They buy computer programs that count the number of keystrokes made by secretaries. They videotape cashiers. They listen in on telephone operators. They put bumper stickers on company trucks asking drivers to call in if the truck is being driven carelessly. But all of these things are expensive, so there is a limit on how much monitoring will be profitable.

Now here are the complications. First, in our model the agent has one task. Usually, agents will have more than one task, or more complex tasks than the one described in the model. Consider a different agency relationship, where an employer hires a salesman to travel around selling the employer's products. In the simple model, we might conclude that the employer should pay the salesman on commission, so that more sales mean higher pay. The employee engages in the high-effort hard sell, rather than a more comfortable and friendly, but less remunerative, "soft sell." But in a more complex model, we might have doubts. The hard sell yields high sales in the short term, but in the long term offended and humiliated customers go elsewhere -- but long after the salesman has left the company. The soft sell yields medium-level sales in the short term, but in the long term customers stay with the employer. The employer wants the salesman to be nice and polite, but if he uses the commission system the salesman has the wrong incentives. He'll engage in the hard sell, because he gets more pay in the short term, and in the long term he'll either be gone or he'll share the general decline in sales with other employees rather than incurring the entire cost of his behavior by himself. It is possible that the employer should pay the salesman a flat fee, in the hope that if he prefers nice and polite to the hard sell, his actions will align more closely to the employer's interests.[5]

The second complication is that while our model has only one agent, often a principal will have several agents. An employer usually has many employees, not just one. This fact can have various implications. On the one hand, when there are many agents, the principal may have an easier time determining whether a particular agent shirked or was the victim of chance. If all of the salesmen had poor sales, then one is more confident that market conditions are responsible than if only one salesman had poor sales. Moreover, it may be possible to design incentive schemes that exploit the large numbers: for example, giving a bonus to the salesman with the most sales might produce incentives that track level of effort. On the other hand, when tasks require cooperation among multiple agents, but agents are paid only on the basis of independent work, they will shirk on cooperative tasks. For example, piece rate workers will work very fast on the assembly line but they will not take the time to train newcomers.[6]

The third complication is that we assumed only one principal, when in many cases a single

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[5] See Bengt Holmstrom and Paul Milgrom, Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership and Job Design, 7 J. Law, Econ. & Org. 24 (1991).

[6] See, e.g., D. Mookherjee, Optimal Incentive Schemes with Many Agents, 51 Rev. Econ. Stud. 433 (1984).

agent will have multiple principals. A good example is the CEO of a corporation, who is responsible to hundreds or thousands of shareholders. When these shareholders' interests are aligned, we need not worry about the multiple principal problem. But in small corporations with few shareholders, different shareholders might have difference risk tolerances and different interests. What is the optimal contract for the CEO? Also think about real estate agents, who usually represent multiple seller/principals rather than a single one. One implication of this is that their contracts might not need a lot of insurance built into them, because as long as one's luck for each sale is independent of the other sales, the large numbers will provide some insurance. If the agent has trouble selling one house because no one likes it, she may have at the same time no trouble selling another house which happens to catch the eye of an eccentric millionaire.

The fourth complication is that often both parties in a contract will have agent-like and principal-like qualities. Imagine that two lawyers set up a partnership. Who is the principal and who is the agent? The answer is that both are both. Each lawyer benefits if the other lawyer uses high effort, because they share all profits. So they are both principles. Each lawyer has an incentive to shirk on his own side, because he must pay some of his returns to the other lawyer; and neither lawyer will find it easy to monitor the work of the other.[7] Even in a more typical agency relationship, the agent might depend on the principal's engaging in the right conduct. A real estate agent wants the owner of the house to keep it clean; if the agent obtains all the profit from the sale, the principal will lose the incentive to keep the house clean, making the agent's job harder. As a result, the optimal contract might split the profits between the two parties.[8]

One could go on for a long time, spinning out more complications. But the point is that even as we take into account the complications, the basic lessons of the model hold. In any agency relationship there will be potential agency costs, which can be minimized through clever monitoring and clever design of the contract that trades off incentives, on the one hand, and insurance, on the other.

III. Applications to the World.

Agency relationships are ubiquitous, and so are agency problems. Agency problems arise whenever one individual (the agent) can benefit another individual (the principal) by taking a certain action, but the latter cannot directly monitor the first and pay him for doing the right thing. Usually, the agent has some expertise or other advantage that the principal lacks, and the principal benefits enough by the agent's action, and the agent loses little enough from taking that action, that the principal can pay the agent for taking the action. Let me give you some examples.

The landlord is the principal and the tenant is the agent. The landlord wants the agent to take care of the premises: to keep them clean and not to subject them to too much wear and tear. But the landlord cannot directly observe the tenant, so it may not be clear whether the washing machine broke because the tenant stuffed too many clothes in it or because it malfunctioned. A security deposit minimizes agency costs. The tenant knows that if he trashes the apartment, the landlord will keep his security deposit, so he has an incentive to take care. At the same time, the tenant will usually not be liable if, for example, the entire building is destroyed by fire, or he may be judgment proof in any case. The tenant thus does not bear all the risk of a bad outcome. Like the real estate agent, the tenant has some incentive to take care, but does not bear all the risk of the bad outcome.

A manager of a corporation is an agent of the shareholders. The problem again is that the

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[7] See, e.g., Bengt Holmstrom, Moral Hazard in Teams, 13 Bell J. Econ. 324 (1982).

[8] See Saul Levmore, Commissions and Conflicts in Agency Arrangements: Lawyers, Real Estate Brokers, Underwriters and Other Agents' Rewards, 36 J. Law. & Econ. 503 (1993).

shareholders cannot directly observe the manager's level of effort. Did sales collapse because the manager did not take important clients out to restaurants often enough, or because of a subtle shift in demand? Did sales skyrocket because the managers spent so much time on the phone or because of the independent efforts of subordinates? Shareholders can give managers the right incentives by paying them solely in stock, so they make money if the company does well, and not otherwise. But managers will not accept this level of risk. If a recession strike, and demand for the firm's product dries up, the manager would receive no compensation. So compensation schemes typically include a salary plus stock or stock options.

The insurance company is the principal and the client is the agent. This might sound backwards, but it makes sense. The client's task is to drive his car carefully or recklessly. The insurer benefits if the client drives the car carefully, because this minimizes the chance of accident and payment of insurance. But if the client is fully insured, the client has little incentive to drive carefully. The solution is the deductible: the insurer will not pay the client's full losses, and because the client absorbs some of the loss, he has an incentive to take care. However, it would defeat the purpose of insurance to give the client nothing if he has an accident, although this would give the client the best incentives to take care. You buy insurance precisely to protect yourself against risk.

Your doctor is your agent, and you -- the patient -- are the principal. You pay your doctor to examine you for illness, and you hope that your doctor puts in the right level of effort. Your lawyer also is your agent, and you -- the client -- are the principal. Notice that in both cases it is very difficult to monitor the agent. You never really know whether the doctor or lawyer did a good or bad job. Worse, often you don't even know how to evaluate the output: you are not around when your will is executed, so you won't know if there are any mistakes. Concerns about monitoring when the principal is extremely ignorant about the nature of the agent's tasks lead to professionalization. The agents create bodies of experts that supervise them. This is supposed to give the principals confidence that the agents will do a good job. Whether it does or not is another question.

The agency model can be extended outside the employment context. Think about how a politician is the agent of citizens. Or how administrative agencies like the EPA are the agents of Congress (or are they the agents of the President?). Or how judges are agents of Congress. What are the agency problems in this context? Politicians engage in a high level of effort when they implement the interests and values of citizens, and low effort when they accept bribes or respond to the demands of interest groups. Is campaign finance reform the solution to an agency problem? Administrative agencies are supposed to implement statutes under the President's direction, not create regulations that benefit industries or lobbyists. Judges are supposed to enforce laws, not implement their personal or ideological preferences. So these are the agency costs; think about how the political process might minimize them or make them worse.

There is a sense in which every citizen is an agent for every other citizen. When you drive carefully, you are a good agent for other drivers, and when they driver carefully, they are acting as good agents for you. Littering or failing to pay taxes might be considered shirking or low-effort behavior on the part of citizen-agents, the result of high agency costs, that is, the high costs for each citizen of monitoring all other citizens. The police and the courts, then, are an attempt to minimize agency costs.

Let me conclude my discussion of agency relationships by considering the case of restaurants and waiters. The manager of the restaurant is the principal, and the waiters are agents. The waiters' task is to provide good service. If the waiters use a high level of effort, the manager will benefit from increased sales. But waiters find it easier to be rude, or to be slow, than to be prompt and courteous to obnoxious customers. The manager might be able to minimize agency costs by observing some waiters some of the time, but she will generally be busy doing other

things.

Waiters earn a lot of money from tips; at the same time they are paid a flat wage by the restaurant. This is exactly the sort of mixed contract that the agency model predicts. The flat wage protects the waiter from slow nights and miserly customers; the tips give the waiter an incentive to do a good job. But there is a twist to this story. Waiters often pool their tips and divide them evenly; other times, the managers require them to pool their tips and divide them evenly. Notice that this increases insurance against bad tippers, but reduces the incentive to provide good service. Part of the reason for pooling from the manager's perspective comes from the multiple agent problem: when waiters depend heavily on tips, they have no incentive to cooperate with each other. This is why a waiter who does not serve your table will sometimes be rude or impatient when you ask him for some help. To enhance cooperation, the manager requires pooling of tips. And the waiters might not object. From their perspective, pooling allows them to insure against the chance that on a given shift all one's customers are bad tippers.

But this does not mean that there is no incentive to provide good service. When customers pay with credit cards, they record their tip on a piece of paper -- the receipt, of course, which will have the waiter's name or code number -- that the manager will be able to see. So the manager will learn about the quality of service provided by different waiters, and the manager can reward good waiters and punish bad waiters by giving better waiters the more popular tables or promoting them or by firing the bad waiters.

IV. Applications in Law.

As a private citizen and as a lawyer, you will have to deal with contracts all the time. As a private citizen, you will want to know whether the contracts you enter serve your interests. When you are in the position of agent -- say, as an employee of a law firm, or as the lawyer for a client, or as a tenant, or as the purchaser of insurance, or as the renter of a car -- your main concern will be about the insurance side of the contract. The other person will want to give you high-powered incentives, and one incentive is to make you pay if something goes wrong. You have to be alert for provisions in the contract that make you responsible for losses. You might be made liable, for example, if you damage the car that you rent; or you might forfeit your insurance coverage if you fail to install smoke detectors; or you might be subject to firing or even criminal prosecution if you fake your billing records while a lawyer at a firm. If you don't like provisions that create high-powered incentives, demand that they be removed or look for another contractual partner.

When you are in the position of principal -- say, as the manager of a law firm, or as a landlord, or as a homeowner who pays a contractor to renovate the kitchen, or as an investor in a company -- your main concern will be about the incentives side of the contract. You want your agent or agents to work hard, to take care, to do a good job. You will think about bonuses, promotions, commissions, and penalties. The agent will resist, and you will have to compromise.

And as a lawyer, your clients will show you the contracts that they are thinking about entering, and they will ask you for your advice. And you will give them advice that will reflect agency principles, whether you've learned them or not. You will warn them about their responsibilities under the contract, the extent to which they might have to pay; and you will warn them about the incentives that the other person faces under the contract.

Agency principles also help us understand the design of the law. Let me give some examples.

A. Contract law.

Many laws regulate contracts. One relevant cluster of examples consists of laws that

regulate the contracts between real estate agents, buyers, and sellers. Typically, real estate agents work for sellers, but sometimes buyers do not realize this, and share confidences with the real estate agent which the agent will duly exploit. A response in some states has been the enactment of laws that require the agent to act as a "dual" agent for the seller and the buyer. One should ask oneself what effect this law will have. It may be unenforceable, because it is hard to tell whether the agent violates the buyer's confidences when she uses that information to propose a price higher than what the seller might otherwise extract. If it does restrict agents' freedom, then it might make sellers more reluctant to hire real estate agents. But the law might also solve a contract problem: the optimal contract would be negotiated ex ante by buyer, seller, and agent; perhaps the law supplies the terms that the parties would agree to if they had the opportunity to negotiate.

When analyzing contract law generally, we often talk in very general terms. We say that the promisor is the person who must perform now; whereas the promisee is the person who paid him a while ago and is now entitled to performance. For example, the promisor is the employee who failed to reach sales goals; the promisee is the employer who expected the promisor to attain these goals. So the promisor is the agent, and the promisee is the principal.

Let me put this in another way. The promisee will often write down in a contract, sometimes in great detail, the promisor's obligations. When the promisor fails to satisfy these obligations, he breaches the contract. The promisee sues for damages. If the court decides that the promisor did not satisfy his obligations, it will award damages. So far so good.

But what should the level of damages be? Here we can use the agency model. Simplifying greatly, we can treat breach as "low effort" and performance as "high effort." If damages are too low -- say, 0 -- the promisor has no incentive to perform. She is like the real estate agent who is paid a flat fee to sell your house. So we predict the promisor to breach when damages are set very low.

Suppose we set the level of damages at some high amount, say, the value to the promisee of performance (expectation damages). Now the promisor has an incentive to perform. She will perform, in fact, as long as the cost of performance is less than the amount of damages. This might seem like a good outcome.

But the agency models helps us see two problems with this analysis. First, if the promisee is risk-averse and the promisor is risk-neutral -- and this will be roughly correct in the standard employment relationship -- a high level of damages will make contracts unattractive to the promisor. Employees know that there is some chance that they will not be able to avoid breach, because bad luck can never be eliminated. Think of the real estate agent who knows that even if she puts in high effort, there is some chance that she will not be able to sell the house for a high price. Just as she does not know want to enter a contract that gives her nothing if she fails to sell a house, she would not want to enter a contract that forces her to pay expectation damages if, because of bad luck, she is unable to perform. Thus, the standard measure of damages -- expectation damages -- may be too high.

Second, don't forget that sometimes the nominal principal is also an agent. The employer might be an agent in the sense that if he uses a high level of effort, the employee is more likely to be able to perform. For example, maybe the employer is expected to provide the employee with some training. The employer fails to do so, and so the employee finds it too hard to perform. If the failure to train is not technically a breach -- say, it's not included in the contract -- expectation damages provides the wrong incentives, because they reward the employer who fails to engage in high effort. A low level of damages if the employee breaches would give the employer the optimal incentives to train the employee. But then we see the tension -- a low level of damages also reduces the employee's incentives to engage in high effort. A high level of damages, like expectation damages, might give the employee good incentives while giving the employer bad

incentives; but a low level of damages, like zero damages, might give the employee bad incentives while giving the employer good incentives.

I have only scratched the surface of a very complex subject. But I hope I have given you a sense of how agency principles shed light on contract doctrines.[9]

B. Other areas of law.

Now I am going to give you a quick tour of some of your other classes.

Tort law. Tort law often matters in contractual relationships. Product liability law makes a manufacturer strictly liable for injuries caused by its products. The manufacturer is agent, the consumer is principle. Vicarious liability rules, the old fellow servant rule, and workers' compensation all govern the relationship between employers and employees. So these laws can be analyzed straightforwardly using agency models. But think also about whether it makes to sense to say that when I drive down the road, I am an agent for pedestrians or other drivers, who are principals; and the other drivers are agents for me? The standard economic models of negligence and strict liability can be cashed out in terms of the tradeoff between optimal incentives and optimal insurance for risk-averse people, on analogy to the agency models.[10]

Property law. Historically, many towns had what were called "commons." (Think of the Boston Commons, for example.) This was common property: generally speaking anyone could forage on the commons or graze his livestock on the commons. Every citizen is an agent for the community. The agency problem is that I might overforage or overgraze my sheep, with the result that there will not be enough left for others. There is a similar problem with fisheries, or for that matter, air, water, and soil, which can be overused through pollution. To return to the commons, we could give people the right incentives by dividing the commons into private strips of property. Now I will not overforage because I incur all the losses if nothing grows next year. The problem is that if I can forage only from my strip, and if random environmental factors cause my strip to be barren one year while others' are not, then I am out of luck. So private property creates better incentives not to overforage, but at the cost of bad insurance for the risk-averse. By contrast, the commons insures me against variations in the growing patterns on any small piece of it. One compromise is private property, but with some sort of side deal -- an insurance contract that gives me the right to forage on your property only when some easily monitored condition -- say, a flood -- makes mine unusable.[11]

Civil procedure. Is the lawyer an agent of the client, as we said above, or is the lawyer an agent of the court? The client wants the lawyer to do whatever it takes to win her case. The court wants the lawyer to expose the truth, and not to delay, harass the other side, and so on. If the client can get the lawyer to sign a high-power incentive contract -- like the contingency fee contract -- we can expect the lawyer to serve the client well but the court poorly. This is the sort of lawyer who would knowingly allow his client to commit perjury, would indeed encourage his client to commit perjury. But the court does not want this, and so threatens the lawyer with sanctions if the lawyer goes too far. We can imagine the lawyer as agent of the court. This lawyer might even be

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[9] A recent survey of this literature is Steven Shavell, Contracts, 1 The New Palgrave Dictionary of Economics and the Law 436 (Peter Newman ed. 1998).

[10] See William Landes & Richard A. Posner, The Economic Structure of Tort Law (1987); Steven Shavell, Economic Analysis of Accident Law (1987).

[11] For a general discussion, see Robert Ellickson, Property in Land, 102 Yale L.J. 1315 (1993).

paid by the government. But this lawyer would be less concerned with enabling his client to win than with pleasing the court. He would not suborn perjury, but he would not try very hard to seek out hard-to-find evidence that would benefit his client's case.[12]

Corporate law. Corporate managers and directors are agents of shareholders. I mentioned above that corporate employment contracts are designed to minimize agency costs, and so one way the law can minimize agency costs is just by enforcing these contracts. But often contracts are not enough; they may have gaps as a result of transaction costs or information asymmetries. Corporate law, on one view, fills these gaps with default terms. These terms include the general duties of care and loyalty, but also (arguably) such features as limited liability, the derivative suit, voting rules, and rules governing the disclosure of information when a firm issues securities. A vivid example comes from the wave of corporate takeovers in the 1980s. Many people objected to takeovers because they often resulted in the loss of jobs and the disruption of local communities. There was much enthusiasm for state laws that interfere with takeover attempts. But the agency model suggests that takeovers are desirable. They can occur only when managers fail to maximize the value of the corporation, for they are motivated by the belief that a better managed company would be worth more. Corporate raiders, despite their unsavory reputations in some quarters, are the solution to an agency problem, and on this view should be celebrated rather than reviled.[13]

The Rest of Law. Once one has mastered the agency model, it is a fine game, especially on long car trips, to apply it to everything in the universe. Let me mention a few other legal topics. In labor law, the union represents the employees; the union is the agent, the employees are principals. Labor law, among other things, constrains unions so that they do not violate the interests of employees. The election rules also try to minimize agency problems by dividing employees into bargaining units on the basis of the employees' interests. In corporate bankruptcy, it is useful to think of the debtor as an agent for the creditors which, because of the debtor's insolvency, become residual claimants. In employment and franchise law, the employment and termination at will default rules are often justified on the theory that the principals (the employer, the franchisor) have no more effective way of deterring the agent from misbehavior than by ending the relationship. In administrative law, the notice and comment provisions of the Administrative Procedure Act are often justified on the theory that they enable regulated parties to alert Congress when agencies deviate from the legislative mandate. In international, there is much concern about whether international institutions, including international arbitrators, have the right incentives to respect the interests of sovereign nations.

An old theory of political organization holds that government is invented to solve an agency problem. Each citizen is an agent of every other citizen, but no citizen has the incentive to use care when, for example, littering or driving. The government is invented to solve this agency problem. The government enacts laws that deter moral hazard, and it punishes people who violate those laws. But this creates a new agency problem. The government consists of people; once these people are given guns, what prevents them from acting contrary to the interest of citizens? One possibility is the Constitution, which is a set of rules that restricts the behavior of the government. The Supreme Court enforces the Constitution. But what prevents Supreme Court justices from engaging in moral hazard? The solution to every agency problem creates a new agency problem, or so it might appear.

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[12] An agency model of lawyering can be found in Geoffrey Miller, Some Agency Problems in Settlement, 16 J. Legal Stud. 189 (1987); see also Levmore, supra note __, at 521-25.

[13] There is a vast literature on this subject. See, e.g., Frank H. Easterbrook and Daniel R. Fischel, The Economic Structure of Corporate Law (1991); Paul G. Mahoney, Mandatory Disclosure as a Solution to Agency Problems, 62 U. Chi. L. Rev. 1047 (1995).

V. Conclusion.

When you think about the purposes of the law, and why it might or might not make sense, think about whether it seems to be responding to agency relationships. Think about what the agency costs are, and how they can be minimized. I'm not saying that agency relationships are all that there is. It's only a small part. But it can help you see connections between different areas of the law, and how different areas of the law respond in similar ways to common problems.

One last agency relationship. Professors are agents of their students. The professor's task is to educate the student, and this can be done well or poorly. Lazy professors, or professors who want to make lots of money or become famous scholars, might engage in low effort, which leaves them time to go on vacation, or consult, or do research. How is the agency problem solved? One solution is reliance on student evaluations. The students, who are the principals, directly monitor the professors. Our salaries could be a simple function of the scores we receive on these evaluations.

Fortunately, there are three problems with this approach. First, we are risk-averse. If I receive no salary this year, because my evaluations sink below a certain level, I will probably look for another job -- even if on average my evaluations are very high. A possible response to this problem is to base compensation on a moving average of my evaluations, but then my incentives will not be as sharp. If I do very well in one year, I may slack off the next year.

Second, students often don't realize they have received a good education until long after they have filled out the evaluation. You will not know until you are lawyers. In this way, the teacher relationship is like the doctor/patient or lawyer/client relationships, where the great gulf between the knowledge of the agent and the information of the principal frustrates the use of contracts to provide optimal incentives.

Interestingly, universities have managed to develop a solution to this problem. They receive a good portion of their funding from alumni who make donations. The hope is that alumni, who are now in the position to evaluate their education, will donate a lot if the education was good, and this -- through the offices of the dean -- will ensure that professors do a good job. Notice that it is not so necessary for elementary and high school education; there we expect parents to be able to monitor the teachers by observing the progress of their children. Agency costs are minimized because parents complain, or remove their children from school, if teachers do a bad job. But in the university setting, the solution is more complex, because students' parents generally don't know enough to be able to evaluate their children's progress.

Third, scholars are supposed to engage in scholarship. If their salaries were solely a function of student evaluations, they would focus entirely on teaching, and do very little scholarship, possibly at the cost of the reputation of the law school, and therefore of the long-term value of the students' diploma. This is the problem that arises when the agent has more than one task, which I discussed above.

The result of these complications is that monitoring and rewarding of professors is quite complex. An intermediate institution, namely the dean, is invented to persuade students and alumni that the faculty does a good job, and also to monitor the faculty and reward those who do well and punish those who do poorly. This is all done, of course, in a genial and subtle manner -- with lots of informal pressure, and a lot of work on the front end to screen out professors who are unlikely to produce scholarship or take their teaching seriously. The dean, like all of us, must spend a good part of his time analyzing agency relationships, and figuring out ways to minimize agency costs.

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