ECON 522 - DISCUSSION NOTES ON CONTRACT LAW-PART 2

I Contracts

I.1 Investment in Performance

Investment in performance is investment to reduce the probability of breach. For example, suppose I decide to pay a contractor to build me a new house. The contractor can buy fire extinguishers to reduce the chance that the house burns down mid-project, or it can buy the materials ahead of time to secure prices and reduce the probability of breach due to cost increases. But these actions cost something, they aren't free. Thus, when the contractor is deciding whether or not to invest in performance, he will compare how much benefit he gets from the investment (the increased probability of successfully completing the contract and getting paid) to the cost (what the investment costs, and what the expected cost of breach will be based on the probability of breach).

What we saw in lecture was that if expectation damages include reliance, then a promisor will invest the efficient amount in performance, but if reliance is not included in expectation damages then there will be under-investment in performance. The reasoning again has to do with externalities. If I'm the promisor, and if I don't have to pay back reliance in expectation damages, then I won't take into account the fact that the promisee loses the money invested in reliance if I breach. Thus every dollar that I *don't* invest in performance imposes a *negative* externality on the promisee (or, every dollar that I *do* invest imposes a *positive* externalty). To force me to internalize this externality, we have to include reliance in expectation damages, as the following example (from lecture) shows.

Example. You hire me to build you a plane, and I have the ability to reduce the probability of breach by investing in performance. My ability to reduce the probability of breach is described by the function:

$$p(z) = \frac{1}{2}e^{\frac{-z}{40000}}$$

Where $p(z)$ is the probability of breach, and z is the amount in dollars that I invest in performance. Your expected payoff from the plane is \$150,000, but on top of that you've built a hangar (this is an example of reliance) that will give you a return of \$180,000 if you get the plane. My payoff from the contract is \$100,000 minus however much I decide to invest in performance, but if I breach I have to pay some damages D.

Point: We haven't decided what D should be. We're going to solve this problem to figure out what D has to be so that I have the incentive to invest the efficient amount in performance.

Efficiency requires that social welfare is maximized. With probability $p(z)$ the contract is broken, so I must pay you damages D, but that is a transfer and has no effect on efficiency. With probability $(1 - p(z))$ we get a combined payoff of $150000 + 180000 + 100000 = 430000$. And for sure I have to pay z (I choose what z to pay, but I spend it before the realization of breach/no breach). Thus, social utility is:

$$U = (1 - p(z))(430000) - z$$

So, we figure out the optimal z by taking first order conditions. Note that:

$$p'(z) = -\frac{1}{2}\frac{1}{40000}e^{\frac{-z}{40000}} = -\frac{1}{40000}p(z)$$

So the first order condition is:

$$U'(z) = 0 = -430000p'(z) - 1$$
$$= \frac{430000}{40000}p(z) - 1$$

Therefore the optimal z is such that $p(z) = \frac{40000}{430000}$

When I decide how much to invest in performance, I don't care at all that you've relied. All I care about is that if I breach I'll have to pay D. So my utility is $u(z) = (1 - p(z))(100000) + p(z)(-D) - z$, since if I breach I pay D, and if I don't I get \$100000, and in either case I pay z. So I take first order conditions to get:

$$u'(z) = -100000p'(z) - Dp'(z) - 1 = -p'(z)(100000 + D) - 1 = \frac{100000 + D}{40000}p(z) - 1 = 0$$

$$\Rightarrow p(z) = \frac{40000}{100000 + D}$$

Take a look at the efficient probability of breach $p(z) = \frac{40000}{430000}$ versus the probability that I choose $p(z) = \frac{40000}{100000+D}$. In order to get me to invest the optimal z, we must have $D = \$330,000$, which is *exactly* what expectation damages are if we include reliance! Thus we need to include reliance in expectation damages if we want efficient investment in performance, but we've already seen that this will result in over-reliance. What to do?

Solutions: One solution is to only include efficient reliance in expectation damages. This probably isn't feasible. To implement this rule a court would have to determine the probability of breach and the expected benefit of all reliance to the promisee, which would be difficult.

Another solution was"anti-insurance," where individuals in a contract would sell the right to capture the difference between expectation damages with and without reliance. This is also unlikely, since it would be difficult to establish a healthy market for "anti-insuarance" (but there are some pretty strange markets out there, so maybe this isn't so unbelievable).
What actually happens is that expectation damages cover *foreseeable reliance*, which is reliance that the promisor should reasonably expect the promisee to take. I would argue that foreseeable reliance is probably a pretty good proxy for efficient reliance.

I.2 Efficient Signing

Even if we can somehow guarantee efficient breach and reliance, it still may not be possible to ensure efficient signing. Continuing the above example, suppose expectation damages include reliance (thus $D = \$330,000$). Will I want to sign this contract? I'll sign if my expected payoff is greater than zero, which is represented by the following equation:

$$p(z)(-330000) + (1 - p(z))(100000) - z > 0$$

We've already figured out that I will invest until $p(z) = 4/43$, thus if we solve for the amount of money z I'll invest:

$$\begin{aligned}
\frac{1}{2}e^{\frac{-z}{40000}} &= \frac{4}{43} \\
e^{\frac{-z}{40000}} &= \frac{8}{43} \\
\frac{-z}{40000} &= \ln\left(\frac{8}{43}\right) \\
z &= -40000\ln\left(\frac{8}{43}\right) \\
&\approx \$67,270
\end{aligned}$$

Therefore my expected payoff from this contract is:

$$(4/43)(-330000) + (39/43)(100000) - 67270 = -\$7270$$

Thus, even though the expected social payoff is positive (i.e. the contract is efficient, since your expected payoff is still \$330,000, and $\$330,000 - \$7270 > 0$), I'm expecting to lose money by signing, and thus I will not sign.

I.3 One last math note

We decided in lecture that the 6th role of contract law is to promote enduring relationships. We motivated this by examining an investment game played over multiple periods. In the game, player A gives player B some money, and player B invests it. The investment gives a return with 90% probability, and once the return is realized player B can return some of the money to player A or steal the money and run away. The payoff of running away is a one time payment of \$200, and if player B sticks to the contract he gets \$50 every period that the there is positive return. We decided that if the present value of \$50 now until forever is greater than \$200, then it's a subgame perfect equilibrium for B to cooperate. Let $X =$ the presents value of getting \$50 today and forever. Then:

$$X = 50 + .9(50) + .9^2(50) + .9^3(50) + \ldots = 50 + .9(50 + .9(50) + .9^2(50) + .9^3(50) + \ldots) = 50 + .9X$$

$$\Rightarrow X - .9X = 50$$

$$\Rightarrow .1X = 50$$

$$\Rightarrow X = \$500$$

Just a reminder on how to do this type of geometric infinite sum.

I.4 Some Thoughts on Default Rules

The point of default rules is that transaction costs are too high to include every possible scenario, detail, contingency, etc. that could be included in a contract. For example, if I hire you to paint my house, and we write a contract, it may not seem worth it to stipulate what will happen if a tornado comes and destroys my house, or what happens if it rains, or what happens if it rains for three weeks then is sunny for two days then rains again, or ... You can't include everything; it's just not possible. Whatever isn't included in the contract is called a *gap*, and *default rules* are rules that the court uses to fill these gaps. Its quite possible (likely)

that a gap won't need to be filled (there probably won't be a tornado). But if the gap does need to be filled, courts fill them "by default" with the default rules (hence the name). You can think of the court as having some ultimate contract that has no gaps that they refer to whenever a case comes before them because of a gap in a contract. The court simply takes the default rule and plugs the hole.

Then how do the courts design default rules? One way is to establish *efficient default rules*. The thought process is this: Suppose there is a gap in a contract and whatever wasn't included in the contract ends up occurring (e.g. the tornado comes and destroys my house). The efficient default rule is the rule that the contracting parties *would have* written into their contract if they had filled the gap *before* the realization of the event. This is efficient, since the rule that two parties would agree upon must be efficient (if there were gains from some other rule then they would renegotiate the contract to collect the surplus). This seems reasonable, but we also saw that sometimes we want an inefficient rule ...

Penalty default rules are default rules that penalize individuals for not filling gaps in contracts, and thus are purposefully *inefficient ex post* (or at least *not always efficient* ex post). However, these rules can be efficient *ex ante* because they give contracting parties incentive to fill gaps in contracts. Refer to the home-selling example from lecture. When people sell houses they often hire a realtor. The reason they do this is because the real estate market is complicated, and a realtor has expertise in this area. When a buyer puts up an offer for the house, that buyer pays a deposit called "earnest money" as collateral, and they lose that deposit if they back out of the deal. A contract with a realtor should stipulate who gets that earnest money in case the buyer backs out. If the contract doesn't say anything, then that is a gap. If it's efficient for the realtor to get that money, then that is what the efficient default rule should be, but if it's efficient for the seller to get that money, then that is the efficient default rule. It may be difficult (impossible) for a court to decide which is the efficient outcome, so instead the court can use a penalty default rule to force the parties to fill the gap initially. The penalty default may be that the seller always gets the money, regardless if it's efficient or not. Then, since the realtor knows the market and the rules (including the default rules), if it's efficient for the realtor to get the earnest money, the two sides can negotiate and write a different rule to fill the gap. Note: If the penalty default were that the realtor always gets the earnest money, chances are the first time home-seller does not know this. So even if it's efficient for the seller to get the earnest money, a gap may be left in the contract since the realtor may have less incentive to fill that gap, and the seller doesn't realize there is a gap.[1]

This brings us to our last point about default rules: When gaps are left in contracts because the transaction costs of filling them are too high, then efficient default rules work well. When gaps are left due to asymmetric information, penalty default rules work well.

Important: default rules can be negotiated around. Default rules are only implemented if there's a gap, but contracting parties are allowed to fill gaps in ways different from the default rule (in fact, you probably only want to fill a gap if your way of dealing with it is different from the default rule, since there's always some cost of filling it). You cannot, however, write contracts that derogate public policy (i.e. you can't write a contract that breaks the law).

I.5 Some thoughts on "Dire Constraints" and other ways to back out of a contract

We saw that there are different ways to set up damages in case of breach, but sometimes we want contracts to simply be annulled, with no penalties for anyone. Recall that there are two main classes of excuses that are reasonable to void a contract: Formation Defenses (we never had a valid contract) and Performance Defenses

[1] If there were no transaction costs then this would never be a problem, since the two parties would always negotiate to the efficient contract.

(things have changed). The main formation defenses that we examined were the "dire constraint" examples: you cannot form a valid contract with someone under duress or in a situation of necessity. We decided that the "under duress" example was pretty straightforward, since, even though at the time of a contract both parties may want the contract enforceable and thus it must be efficient, we dont want to promote crime. We had a tougher time showing the necessity example made sense. However, we also pointed out that many contracts are formed under some sort of duress (e.g. "give me a raise or I quit"), and we decided that duress is OK as long as the threat is to not create new value, rather then destroy already existing value (e.g. "give me a raise or I destroy all of the office computers" is not OK). One way to think about necessity situations is that if youre negotiating with someone who really *needs* something, then youre implicitly threatening to destroy value. Also, someone really in need is probably not at their most rational or competent state of mind.

Note the difference between mutual mistake and frustration of purpose. Frustration of purpose means the purpose of the contract no longer exists, which is different then being mistaken about the contract. For example, in the king's coronation case that established this doctrine, there was no longer a purpose to have the contracts, since there was no longer a coronation parade. The case that established mutual mistake involved a cow which was thought to be barren, but turned out to be fertile (and already pregnant) when sold. In this case the *purpose* of the contract still exists: the buyer wants a cow, but they were mistaken over what they were contracting: barren cow vs. fertile cow.

Last note: Take a look at the performance defense list. We decided that bilateral mistake may be a reason to void a contract, but unilateral mistake often is not. Thus, if I know that a car I'm buying from you is an antique and you don't, and I subsequently buy the car at a very low price, that's a valid contract. This "unites knowledge with control," and gives people incentive to collect information.[2] Presumably I'll be able to use the car more efficiently since I know its true value, thus the deal is a net increase in social welfare. However, we also decided that one of the roles of contract law is to promote disclosure of information, which would seem to imply that unilateral mistake should be grounds to void a contract. So, sometimes it's efficient to incentivize disclosure of information, and sometimes it isn't.

[2] "Knowledge" is knowing the true value of an object, "control" is ownership.