Frustration of Purpose and the Voluntary Acceptance of Contractual Obligations: An Economic Analysis

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Abstract

The legal doctrine of frustration of purpose determines whether a contract will be enforced or discharged when a contingency arises that was not provided for in the contract. I argue that the doctrine does not and should not always allocate risk to the superior risk bearer. Though the doctrine undoubtedly has the effect of allocating the risk of the contingency, there are other factors that one must consider. An important consideration is whether enforcement is mutually beneficial to the parties to the contract. When a contingency arises for which the parties did not bargain, their preferences may not be adequately revealed by their acceptance of terms designed for other circumstances. By considering the nature of the obligations that the parties voluntarily accepted, the doctrine serves to ensure that mutually beneficial bargains are enforced, while allowing parties to avoid the transaction costs of reaching and describing a complete contingent contract. I analyze the incentives for the participation of individual parties and show that contracts should be discharged, at a minimum, when a party's ex-ante purpose for contracting would be destroyed by enforcement under the circumstances. Specifically, the contract should be discharged if enforcement under the circumstances would result in a negative ex-ante expected utility from the contract for one of the parties. This rule will not always allocate the risk to the superior risk bearer. It also suggests that contracts should sometimes be discharged when the value of performance still exceeds its cost. Under certain assumption, such a rule dominates a rule of strict enforcement.

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I. Introduction

The doctrine of frustration is a defence against liability for breach of contract. A party may escape liability for breach of contract when contractual obligations are radically altered by an exogenous contingency that was not provided for in the contract.[1] If a party is successful in arguing that the contract has been frustrated by some event, then the contractual obligations of both parties will be discharged. If the contract is discharged, the parties can recover for benefits that their performance prior to discharge bestowed on others.[2] If the contract is enforced, the contractual liabilities survive. A party may be forced to specifically perform his promise[3] or he may have the option of paying damages in lieu of performance. Common causes of frustration include crop failure in contracts for agriculture products, rezoning in land transactions, war, legislation preventing performance, death and the destruction of the subject matter of the contract by a "force majeure"[4]. These are just some examples of the more common causes of discharge. Because of transaction costs, parties rarely describe all the circumstances under which their bargain is intended to apply, so unallocated risks of changed circumstances are common. Therefore, the rule that determines whether changed circumstances result in discharge is a significant determinant of contractual obligations. I argue that the doctrine helps to ensure that only Pareto improving contracts are enforced and in doing so avoids some of the transaction costs of negotiating and describing contingent agreements.

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[1] *Davis Contractors v Fareham Urban DC*, [1956] AC 696 at 727-28, [1956] 2 All ER 145.
[2] *Frustrated Contracts Act*, RSO 1990, c F34, s 3.
[3] The remedy of specific performance is available to a plaintiff who can demonstrate that the subject of the contract has a quality that makes it particularly suitable for its intended purpose that cannot be reasonably duplicated elsewhere. *John E Dodge Holdings Ltd v 805062 Ontario Ltd* (2003), 63 OR (3d) 304 (available on WL Can), (CA).
[4] Examples of a "force majeure" include fire or natural disasters. These are events beyond the control of the parties. Another common term for these events is "acts of God."

Complete Contracts vs. State Contingent Claims

To be enforceable, contracts must provide essential terms such as price. However, it is not always essential or practical for parties to specify what obligations should apply for every remote possibility. A typical case of frustration involves a contract that specifies the obligations of the parties under normal circumstances, but is silent on its application in the face of some abnormal event. A literal interpretation of an unqualified statement of obligations will result in the enforcement of those obligations in all circumstances. However, contracting parties don't always intend the terms to be enforced literally under absolutely any circumstances and those that do could signal as much in a few words.[5] If one were to fully describe performance of the literal terms in one set of circumstances, this may be quite different from performance of the same terms in other circumstances. The obligations that parties accept for one state of the world can be viewed as state contingent claims. Accepting an exchange of these state contingent claims may be quite different from accepting the exchange of different state contingent claims that enforcement of the literal terms would impose in other circumstances.[6] If the parties had described the obligations they accepted in intricate detail, it may be apparent that changed circumstances have made enforcement of the agreement impossible. The foundation of an agreement is found in the packages of costs and benefits that the parties accept and not necessarily in the words used to summarize a bargain. If circumstances change, then the costs

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[5] Shavell argues that some method of interpretation, rather than literal enforcement, is socially desirable. He provides a model to demonstrate that literal enforcement can be dominated by more flexible rules of interpretation because of transaction costs. He suggests that it is sometimes desirable for courts to override general terms. Steven Shavell, "On the Writing and Interpretation of Contracts", online: (2003) Harvard Law School John M Olin Center for Law, Economics and Business Discussion Paper Series 445 <http://lsr.nellco.org/harvard_olin/445>.

[6] See KJ Arrow, "The Role of Securities in the Optimal Allocation of Risk-bearing", 31:2 The Review of Economic Studies 91 (JSTOR).

and values of state contingent obligations may change, making the obligations that literal enforcement would impose essentially different from the obligations that were accepted.

If the contract does not provide a sufficiently clear agreement concerning the obligations of the parties under the circumstances, then there is a gap in the contract that the law must fill with a default rule.

Transaction Costs and Gaps in Contracts

The doctrine of frustration is a form of default rule. It fills the gap left in a contract when the parties do not bargain over a contingency. Parties can choose to make the default rule inapplicable by providing their own terms for the contingency. There are transaction costs involved in making contingent agreements designed to provide the ideal terms for multiple possible contingencies.[7] Possible sources of transaction costs include the cost of identifying contingencies, the costs of negotiating an agreement and the costs of providing a sufficient description of the agreement.[8] Complex bargains often require significant amounts of labour, so these transaction costs may not be trivial. The parties can avoid transaction costs by choosing not to bargain over a contingency, allowing the application of the default rule. Whether the

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[7] There is a vast literature on incomplete contracts and there are other potential reasons for incompleteness. Examples include bounded rationality, indescribable contingencies and strategic incompleteness. See e.g. Luca Anderlini & Leonardo Felli, "Incomplete Contracts and Complexity Costs" (1999) 46:1 Theory and Decision 23 (SpringerLink) [*Anderlini & Felli*]; Oliver Hart & John Moore, "Foundations of Incomplete Contracts" (1999) 66 Review of Economic Studies 115 (EconLit) [*Hart & Moore*]. My paper focuses on the specific problem of frustration rather than the problem of contractual incompleteness in general. Like many authors in the literature on frustration, I assume incompleteness is caused by transaction costs.

[8] Some authors have suggested that the transaction cost savings are trivial. They argue that the parties need not bargain over all circumstances. Instead, the parties can simply provide a rule of general application. For example, the parties could agree to discharge whenever, without default of either party, the costs of performance exceed the benefits. However, such allocations do not avoid the transaction costs of negotiating an agreement concerning the obligations that will apply in various contingencies. These solutions will, at best, reduce the transaction costs of identifying specific contingencies and recording agreements. Alternatively, the parties could use a term to specify obligations "in all other circumstances." This could reduce the cost of signalling intentions. However, a low cost of signalling simple agreements such as the desire for strict enforcement in all circumstances may make discharge more attractive, since parties who intended to make absolute contracts could easily have signalled as much. See Eric A Posner, "Economic Analysis of Contract Law after Three Decades: Success or Failure?", online: (2002) John M Olin Law & Economics Working Paper (2nd) 146 <http://ssrn.com/abstract=304977>.

parties choose to bargain over the contingency will depend on its probability, the costs of bargaining and the benefit substituting perfect contingent terms for the default rule. Parties will provide for a contingency in the contract when the expected benefit of providing perfect contingent terms is greater than the transaction costs.[9]

In the law and economics literature, the usual recommendation for filling a gap in a contract is that the court should enforce the terms the parties would have chosen had they bargained for the realised circumstances. Pareto efficient terms would be enforced and the transaction costs of ex-ante bargaining would be avoided. One would also have to consider whether the reduction in transaction costs would outweigh the costs of administering the default rule ex-post, such as litigation costs.[10] In frustration cases, there are tremendous barriers to determining what the parties would have agreed in a first-best world.

Unlike other gaps in contracts, situations of frustration cast doubt on the applicability of the entire contract. Since the entire contract is in doubt, courts cannot simply imply additional terms that the parties must have intended in order to give efficacy to the existing terms. Since the parties did not bargain for the contingency, there can be no evidence of what the parties intended. The parties could have chosen to enforce the contract, discharge it or enforce an entirely different set of terms. When preferences are not revealed by voluntary participation, courts lack sufficient information to identify the efficient terms. For this reason, it is doubtful that courts can supply first-best terms in frustration cases. Rather than writing new agreements, courts decide whether or not to enforce existing agreements.

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[9]See Ian Ayres & Robert Gertner, "Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules" (1989) 99:1 Yale LJ 87 (JSTOR)[*Ayres & Gertner*]; Robert Cooter & Thomas Ulen, Law & Economics 5th ed (Boston: Pearson Education, 2008) at 218ff [*Cooter & Ulen*].

[10] See *Cooter & Ulen*, *ibid* at 221.

Contrary to the suggestion of Posner and Rosenfield[11], courts do not and should not always apply the doctrine of frustration to allocate the risk to the superior risk bearer. The legal response to the problem of changed circumstances has focused primarily on the correspondence between the obligations that enforcement would impose under the circumstances and the obligations that were accepted. This attention to the voluntary participation is appropriate. Voluntary acceptance of terms designed for other circumstances may not reveal a party's preferences in the realised circumstances. The justification for enforcing obligations in circumstances where the parties have not specified their intentions is that it reduces the transaction costs of reaching and describing agreements. When obligations are radically altered by changed circumstances, this justification for enforcement is weakened. This is because more parties will find it worthwhile to provide different contingent terms for extreme changes, rather than accept a default rule that enforces terms designed for other circumstances. Contracts should be discharged, at a minimum, when enforcement under the circumstances would make a party's ex-ante expected utility from the contract negative. This criterion will not always allocate the risk to the least risk-averse party and will sometimes discharge the contract when performance is still efficient. Under certain assumptions, this rule dominates a rule of strict enforcement.

This paper will proceed as follows. Part II will outline the law of frustration of purpose. Part III provides a review of the literature concerning the law and economics of frustration. Part IV contains an analysis how the choice of default rules will affect the incentives to participate in incomplete contracts. Finally, Part V examines the correspondence between competing theories of frustration and decisions from actual cases.

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[11] Richard A Posner & Andrew M Rosenfield, "Impossibility and Related Doctrines in Contract Law: An Economic Analysis" (1977) 6:1 J Legal Stud 83 (JSTOR) [*Posner & Rosenfield*].

II. The Law of Frustration of Purpose

In this section, I will discuss leading cases on the doctrine of frustration. These are some of the most frequently considered cases of frustration in the common law jurisprudence, academic articles and treatises.[12] They show how the law has developed, the modern legal response to changed circumstances and the types of fact patterns that could raise the issue of frustration.

The Development of the Doctrine

The doctrine of frustration has a long history. Rules allowing discharge under changed circumstances have existed since at least Roman times.[13] Prior to *Paradine v Jane*, the English common law often discharged contracts under changed circumstances, but a general rule had not yet developed.[14] *Paradine v Jane* is the case most frequently cited for the principle that the common law did not recognize a defence of impossibility at the time the case was decided in 1647.

In *Paradine v Jane*, the defendant had been expelled from land, which he leased from the plaintiff, by the invading army of the German Prince Rupert during the English Civil War. The court enforced the lease, reasoning that it was still possible to perform the contract. The fact that war had destroyed the benefit that the defendant had contracted for was not sufficient to release him from the obligation to pay rent. If the parties had had other intentions, they were expected to

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[12] See e.g. John D McCamus, *The Law of Contracts* (Toronto: Irwin Law, 2005) [*McCamus*].

[13] Michael G Rapsomanikis, "Frustration of Contract in International Trade Law and Comparative Law" (1979) 18 Duq L Rev 551 at 552 (Hein Online).

[14] John D Wladis, "Common Law and Uncommon Events: The Development of the Doctrine of Impossibility of Performance in English Contract Law" (1986) 75 Geo LJ 1575 at 1577 (Hein Online) [*Wladis*].

provide for them in the contract.[15] In the two hundred years following *Paradine v Jane*, it was cited as precedent for imposing a rule of strict enforcement.[16]

In the middle of the nineteenth century, the courts began to erode the rule of strict enforcement. The leading case in this transition was *Taylor v Caldwell.* In *Taylor v Caldwell*, the defendants promised to provide the Surrey Gardens and Music Hall for a series of concerts. Prior to the concerts, the hall was destroyed by fire. The court reaffirmed that a promisor must perform or pay damages when he has made an absolute contract. However, the same is not true when the contractual obligation is subject to an express or implied condition. The court concluded that the contract was not absolute. It was instead subject to an implied condition that the parties would be excused on the perishing of the concert hall, as the parties must have contemplated its continued existence as the foundation of their agreement.[17]

A Modern Restatement

It was later recognized that one cannot imply the terms that parties must have intended in cases where the parties did not bargain for the contingency. The doctrine was recast in an effort to focus on what the parties would have accepted, rather than what they intended.[18] One of the most frequently cited statements of the modern law of frustration is found in the following words of Lord Radcliffe:

> "[F]rustration occurs whenever the law recognizes that, without default of either party, a contractual obligation has become incapable of being performed because the circumstances in which performance is called for would render it a thing radically different from that which was undertaken by the contract. *Non haec in foedera veni*. It was not this that I promised to do."[19]

[15] Paradine v Jane (1647), Aleyn 26, 82 ER 897 (KB). See also *Wladis*, *ibid* at 1579ff.
[16] See *Wladis, supra* note 14.
[17] *Taylor v Caldwell* (1863), 3 B & S 826, 122 ER 309 (QB).
[18] See *Davis Contractors*, *supra* note 1 at 727-28.
[19] *Ibid* at 728-29.

One may wonder exactly what is required to make an obligation radically different so as to render performance of the agreement impossible. Although an increase in the expense or onerousness of outstanding obligations is not a sufficient cause for frustration, courts have "interpreted impossibility of performance to encompass not only absolute impossibility but also impossibility in the sense of impracticality of performance due to extreme and unreasonable difficulty, expense, injury or loss."[20] To get a more precise idea of what is meant by words like incapability, impracticality and impossibility one must consider precedents in the jurisprudence.

I will discuss examples from the case law in section V, but it is worth briefly considering the famous case of *Krell v Henry* here. *Krell v Henry* is one of several cases that arose when the Coronation procession of King Edward VII was delayed due to illness. The case of *Krell v Henry* involved a defendant who rented several rooms in a hotel at inflated prices. It was decided that the substance of the contract was to rent windows with a view of the procession. The contract was discharged.[21] This suggests that contracts may be discharged when a change in circumstances destroys the purpose for which a party entered the contract.

One should note that the threshold for discharge is high. The change in circumstances must be such that it destroys the foundation of the contract or radically alters obligations.[22]

When a contract is discharged, the parties are released from their outstanding obligations. Payments made prior to discharge are recoverable. The court has the discretion to grant a party full or partial recovery of expenses and benefits conferred on others.[23] The effect is to restore

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[20] *Kesmat Investment Inc v Industrial Machinery Co* (1985), 70 NSR (2d) 341 at para 21, (available on WL Can), (NSCA).
[21] *Krell v Henry*, [1903] 2 KB 740 (CA).
[22] See *Edwinton Commercial Corp v Tsavliris Russ (Worldwide Salvage & Towage) Ltd (The Sea Angel)*, [2007] 2 All ER (Comm) 634 at paras 111 (available on WL Can), (CA) [*Edwinton*];
[23] *Frustrated Contracts Act*, *supra* note 2. These discretionary remedies resemble the equitable remedy of restitution. These remedies may help encourage performance by providing just compensation when the contract is discharged. In a situation where the contract may not be enforced, a party will be less reluctant to incur

parties as much as possible to their pre-contract positions. However, any irreversible costs incurred in reliance upon the contract will not be recovered.

The following conditions for discharge can be ascertained from the jurisprudence:

1. The event must not have been provided for in the contract. Neither party can have accepted the risk.
2. The circumstances must not be the fault of either party. Neither party can have breached the express or implied terms of the contract prior to the frustrating event.
3. The outstanding obligations must differ significantly, under the circumstances, from those which were accepted.

The first condition can be justified by the fundamental purposes of contract law. Examples of the purposes for enforcing voluntary agreements include enabling people to cooperate, securing optimal reliance, securing optimal performance and reducing transaction costs.[24] If the event is provided for in the contract, then it is an ordinary contract with no gap. Since the parties accepted terms meant to apply in the circumstances, they would correspond with the intentions of the parties and be Pareto efficient under standard assumptions.

The second condition can be justified by incentives for efficient breach. Subject to some qualifications, expectation damages provide an incentive for efficient decisions of whether to perform or default.[25] A party that causes default, even indirectly by making performance

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expenses for the benefit of the other party if there is an alternative form of compensation available in the event that the contract is discharged. Alternatively, this discretionary redistribution of costs could be used to spread the risk between parties.

[24] See *Cooter & Ulen*, *supra* note 9 at 205.

[25] This measure seeks to put the innocent party in as good a position as he would have been in had the contract been performed. *Hawkins v McGee* (1929), 84 NH 114, 146 A 641. It is often assumed that these damages will provide the incentives for efficient performance and breach. The promisor may be faced with a choice of performing at cost C or breaching and paying the value of performance V. Applied perfectly, this would induce performance if and only if $V>C$. However, this measure of damages may cause the promisee to expend excessive costs in reliance on the contract unless damages are limited to those that would arise under efficient reliance. See Steven Shavell, “Damage Measures for Breach of Contract” (1980) 11:2 Bell Journal of Economics 466 at 478

impossible, should not be relieved of his contractual obligations. This can also be viewed as a direct breach of the implied promise to take reasonable steps to ensure performance[26], the breach of which should be discouraged by the enforcement of damage rules.

The first two conditions identify situations in which contracts will not be discharged. They are uncontroversial and are often assumed to be satisfied in the law and economics literature. The third condition is of primary interest. That condition would allow discharge when the agreement pertained to a different set of circumstances and enforcement under the realised circumstances would differ significantly from what was agreed.

The economic intuition supporting the third condition is familiar. Compared to the courts, the parties are better informed about their preferences and have the incentive to pursue mutually beneficial exchanges. Courts should generally enforce agreements between the parties, but not impose exchanges on the parties. If the performance of obligations does not differ significantly from what was agreed, then the court can reasonably infer that the exchange is mutually beneficial. Insignificant differences support the conclusion that the literal interpretation would have been intended to apply under the circumstances. However, when obligations are significantly altered, the court has no basis for concluding that the parties would have agreed to enforcement. The contract is enforced when doing so is essentially the same as enforcing the agreed terms. The contract is discharged when enforcement would essentially be the imposition

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(JSTOR); Benjamin E Hermalin, Avery W Katz & Richard Craswell, "Chapter 1 Contract Law" in AM Polinsky & S Shavell eds, *Handbook of Law and Economics Volume 1* (Amsterdam: Elsevier, 2007) 3 at 102-15 [*Handbook L & Econ*]; *Cooter & Ulen*, *supra* note 9 at 274. However, courts cannot observe subjective valuations perfectly. The risk of incorrect estimates of V could induce inefficient performance. Difficulties in observing subjective value may also explain a further imperfection. The innocent party is relieved of his remaining obligations when the breach deprives him of "substantially the whole benefit which it was the intention he should obtain from the contract." *Hong Kong Fir Shipping Co Ltd v Kawasaki Kisen Kaisha Ltd*, [1962] 1 All ER 474 at 487 (available on QL), (CA) [*Hong Kong Fir*]. The expectation damages would be reduced by the cost savings of the innocent party, but the promisor would not receive the benefit of the innocent party's performance. The cost of breach to the promisor would then be the value of his performance plus the value of the surplus created by the performance of the innocent party.

[26] See D*awson v Helicopter Exploration Co*, [1955] SCR 868 at paras 23, 29, (available on WL Can).

of an entirely different agreement that the parties did not accept. This concern for the voluntary participation of the parties prevents parties from transacting around the default rule and taking other unnecessary precautions. It avoids inefficient misallocation of resources and the additional transaction costs of reallocating those resources. Judicial restraint from imposing bargains may also reduce litigation expenses and rent seeking.

Foreseeability and the Inference of Risk Allocation

The issue of the foreseeability of a contingency appears frequently in both the jurisprudence and the law and economics literature. Several decisions have suggested that parties should only be relieved from their obligations if the contingency is unforeseen.[27] Treatises on the law of contract and more recent cases have made clear that contracts are sometimes frustrated by a foreseeable event. A high degree of "foreseeability" creates a rebuttable inference that one of the parties assumed the risk.[28] The following passage from Chitty on Contracts, adopted by the Court of Appeal of the United Kingdom, provides some insight into the meaning and effect of foreseeability:

> "The issue which the court must consider is whether or not one or other party has assumed the risk of the occurrence of the event . . . [F]oreseeability will support an inference of risk-assumption only when the supervening event is one which a person of ordinary intelligence would regard as likely to occur or . . . the contingency must be 'one which the parties could reasonably be thought to have foreseen as a reasonable possibility."29

When interpreted appropriately, this inference from foreseeability may be efficient. If an event is said to be "foreseeable" when the expected benefit of bargaining over it is greater than the transaction costs, then one can assume that the parties would allocate the risk of

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[27] See *Canadian Government Merchant Marine Ltd v Canadian Trading Co* (1922), 64 SCR 106 (available on WL Can).

[28] See *Edwinton Commercial Corp v Tsavliris Russ (Worldwide Salvage & Towage) Ltd (The Sea Angel)*, [2007] 2 All ER (Comm) 634 at paras 103-05 (available on WL Can), (CA) [*Edwinton*]; *McCamus*, *supra* note 12 at 582.

[29] *Edwinton*, *ibid* at para 104, citing HG Beale, ed, *Chitty on Contracts*, 29th ed (London, UK: Sweet & Maxwell, 2004) at para 23-058.

"foreseeable" events. Because rational parties would not leave a gap in such an agreement, the court can infer that the terms were intended to apply under the realized circumstances. It can therefore be presumed that the contract is complete, represents the true intentions of the parties and should be enforced.

The inference of risk assumption serves to identify cases in which there is no true gap in the agreement. Under this interpretation, the lack of "foreseeability" raises rather than resolves the issue of frustration. By striving to identify such agreements, the courts can reduce the costs of describing the circumstances in which the terms are intended to apply. The "foreseeability" test does not solve the problem of how to fill gaps in the agreement. The application of the "foreseeability" test should depend on how gaps are filled, since the expected benefit of bargaining over the contingency will depend on the default rule that would be used to fill a gap. For the remainder of this paper, I will focus on the problem of filling actual gaps concerning the obligations of the parties in the realized circumstances.

III. Literature Review

Though there is a large literature on incomplete contracts and contracting under uncertainty[30], I will limit my discussion to the literature that deals with the specific problem of the economic analysis of frustration. The literature on the law and economics of frustration can be divided into two categories. The first category assumes that the parties rationally chose not to allocate the risk of the event. The second approach assumes that the possibility of a frustrating event could not have been anticipated and that the parties had thought that its probability was

[30] See e.g. *Anderlini & Felli*, *supra* note 7; *Hart & Moore*; *supra* note 7; Marie-Louise Vierø, "Contracting in Vague Environments", online: (2006) Working Papers, Queen's University, Department of Economics 1106 <http://econpapers.repec.org/RePEc:qed:wpaper:1106>.

zero. Since a contingency with a perceived probability of zero would not affect the ex-ante behaviour of the parties, this approach focuses on the ex-post resolution of disputes.[31]

As discussed above, foreseeability does not prevent frustration of purpose, but only creates a rebuttable inference that the parties allocated the risk. Additionally, it is difficult to accept that contracting parties assign a probability of zero to events such as fire or crop failure. For these reasons, I will focus on the first category of analysis.

In an influential paper, Posner and Rosenfield argued that the risk should be allocated to the superior risk bearer.[32] They consider a contingency that causes the cost of performance to exceed the benefits. They assume that neither party was at fault for causing the event and that the contract does not allocate this risk to either party. The authors argue that, in order to maximize the surplus available for division between the parties, the parties would have allocated the risk to the superior risk bearer. The superior risk bearer rule would reduce transaction costs by providing the same terms that the parties would have made had they negotiated over the contingency. They identify the superior risk bearer by the costs of estimating the probability and magnitude of the loss, and the costs of reducing risk through diversification. The authors acknowledge the uncertainty that would result from case by case inquiries into risk aversion. They suggest that their analysis should be used as a guide for the formation of rules that apply to groups of cases and not to allocate risk in particular cases. The authors identify groups of cases for which they believe the existing doctrine provides a good proxy rule for the superior risk bearer criterion and other cases for which it does not.

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[31] See Pietro Trimarchi, "Commercial Impracticability in Contract Law: An Economic Analysis" (1991) 11 Int'l Rev L & Econ 63 [*Trimarchi*]; Marta Cenini, Barbara Luppi & Francesco Parisi, "The Comparative Law and Economics of Frustration in Contracts", online: (2009) Minnesota Legal Studies Research Paper 09-20 <http://ssrn.com/abstract=1418035> [*Cenini, Luppi & Parisi*].

[32] *Posner & Rosenfield*, *supra* note 11.

Wright defended the superior risk bearer test from the perspective of behavioural economics.[33] He compared it with a test based on foreseeability. Under a foreseeability test, heuristics, hindsight bias, confirmation bias and over-optimism may lead to uncertainty or mistakes concerning liability which could result in inefficient behaviour. He argues that the superior risk bearer test avoids inquiring into foreseeability and thus avoids misapprehensions concerning liability.

Elofson was less supportive of the superior risk bearer test.[34] He criticized it for producing unpredictable results. He argues that strict contractual liability has significant advantages of predictability and lower enforcement costs.

A deeper problem with the superior risk bearer test is that Posner and Rosenfield assumed that the parties would charge a higher price in recognition of this default allocation of risk. That assumption appears to violate the fundamental conditions of frustration. In frustration cases, the terms negotiated by the parties apply to different circumstances than those realised. In particular, the negotiated price applies to a different state of the world.[35] If the parties negotiate a higher price in recognition of the allocation of risk, then they have negotiated over the contingency. Considering that they negotiated over the contingency, they must have borne the associated transaction costs. They agreed to terms intended to apply under the circumstances and there is no gap in the contract. Therefore, if the doctrine of frustration is relevant, the parties cannot have negotiated a higher price to reflect the default risk allocation. This is one reason why one

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[33] Aaron J Wright, "Rendered Impracticable: Behavioral Economics and the Impracticability Doctrine" (2004) 26:5 Cardozo L Rev 2183 (Hein Online).

[34] John Elofson, "The Dilemma of Changed Circumstances in Contract Law: An Economic Analysis of the Foreseeability and Superior Risk Bearer Tests" (1996) 30 Colum JL & Soc Probs 1 (Hein Online) [*Elofson*].

[35] Cooter and Ulen recognized that the court may have to adjust terms to reflect the default allocation of risk. *Supra* note 9 at 222. Because of the imperfect information and incentives of the courts, a less flexible approach may be appropriate. Allowing complete flexibility to write the terms of a contingent agreement the parties never made would transform the role of the courts from that of enforcer to that of writer of the contract.

cannot assume that the "superior risk bearer" criterion enforces the same terms the parties would have chosen.

Sykes also analyzes risk allocation and assumes that the parties will negotiate a higher price in response to the default allocation of risk.[36] However, he argues that courts lack sufficient information to impose the first-best contract. He then analyzes whether a rule that sometimes allows discharge can dominate a rule of absolute enforcement. He argues that discharge cannot be justified on the basis of risk allocation when the promisor is risk-neutral. He shows that neither enforcement nor discharge is always optimal when the promisor is risk averse and that discharge can serve to share the risk between the parties. Assuming that courts have imprecise information about the parties' utility functions, he says the choice is ambiguous in cases where the promisor is risk averse. He fails to identify any discharge rule that can dominate a rule of strict enforcement. He also observes that, assuming that courts cannot identify the efficient level of reliance on which to base damages, frustration may reduce inefficient reliance by refusing compensation and thus internalizing the risk that expenditures taken in reliance on the contract will be wasted. Sykes also argues that law should avoid vagueness and uncertainty. Uncertainty would cause parties to contract around the default rule and create a barrier to out of court settlements.

Bruce suggested that the Posner-Rosenfield approach should be refined to reflect imperfections in information and incentives to mitigate damages.[37] He shows that a better informed party may exploit asymmetric information in order to contract around the "superior risk bearer" rule and allocate risk to the less informed, higher cost risk bearer. The parties may also be able to influence the probability of the contingency or the resulting damages. He proposes

[36] Alan O Sykes, "The Doctrine of Commercial Impracticability in a Second-Best World" (1990) 19:1 J Legal Stud 43 (JSTOR) [*Sykes*].
[37] Christopher J Bruce, "An Economic Analysis of the Impossibility Doctrine" (1982) 11:2 J Legal Stud 311 (JSTOR).

two alternative rules to maintain efficient incentives to mitigate the damages of an event and disclose information. The first rule would hold the promisor strictly liable, but limit damages to those that would occur if the promisee takes the optimal level of precaution. The second rule, a sort of negligence standard, would hold the promisor liable only if he took insufficient steps to prevent breach and mitigate damages. He suggests that the disclosure of information could be considered as a precautionary step or failure to disclose could be considered as a fraudulent misrepresentation.[38] Bruce argues that the choice of whether a contract should be discharged depends on the relative enforcement costs of these two rules.

Bruce's second rule resembles the second condition of frustration listed above. If a party does not take optimal steps to ensure performance, then he will probably be held liable for defaulting on the implied promise to take the reasonable steps to ensure performance. The promisee's duty to mitigate damages is the subject of another doctrine of contract law which is beyond the scope of this paper. However, a discharge rule may affect the promisor's incentives to mitigate damages.

Cenini, Luppi and Parisi summarize the literature and provide another reason to reject the assumption that the parties would always allocate the risk to the superior risk bearer.[39] In situations of asymmetric information a party, even the higher cost risk bearer, may accept the risk of some contingency in order to signal information to the other party. The authors argue that the ability to replace the frustration rule by providing for a contingency in the contract allows information to be revealed and serves as a matching device.

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[38] If there is a fraudulent misrepresentation, the innocent party can seek a remedy of rescission or sue for damages. The practical effect would be to restore the innocent party to as good a position as he was in prior to the contract. See *Kupchuak v Dayson Holdings Ltd* (1965), 53 WWR 65, 53 DLR (2d) 482, (BCCA).

[39] *Cenini, Luppi & Parisi*, *supra* note 31.

White equates discharge with an award of zero damages.[40] She considers risk allocation and performance incentives to analyze efficient levels of damages. She concludes that the efficient level of damages is rarely zero. She proposes that courts should never discharge contracts and should focus instead on awarding the efficient level of damages. It is true that discharge is effectively a damage rule. Its practical effect is to determine whether a party will be liable to pay damages and discharge is equivalent to a rule of zero damages. It is therefore tautological that a rule that awards the efficient level of damages is more efficient than the current doctrine of frustration. However, such a solution does not address the problem of uncertainty. It is unrealistic to assume that courts can determine the efficient level of damages on a case by case basis. The abandonment of the rules that determine the appropriate award of damages would create tremendous uncertainty and cause parties to negotiate liquidated damages clauses which specify the consequences of breach.

Elofson and Ashley argued that, in the long run, customs would develop within industries that would allocate risk efficiently.[41] Courts may then be able to reduce transaction costs by implying applicable customs into the contract. However, this process would require a relatively homogeneous group and enough explicit allocations of risk to establish the custom. This customary evolution would not solve the problem of changed circumstances in cases all cases. In particular, it does not solve the problem in those cases to which the doctrine of frustration applies. If the contract allocates the risk of the contingency, even by a term implied by custom, then there is no gap to be filled by the doctrine of frustration.

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[40] Michelle J White, "Contract Breach and Contract Discharge Due to Impossibility: A Unified Theory" (1988) 17:2 J Legal Stud 353 (JSTOR).

[41] *Elofson*, *supra* note 34 at 38; Stephen S Ashley, "The Economic Implications of the Doctrine of Impossibility" (1974) 26 Hastings LJ 1251 at 1269 (Hein Online).

Though he analyzes cases where the realized circumstances were unforeseeable, Trimarchi provides some relevant insights.[42] While most authors assume frustration results from increased costs, Trimarchi points out that a change in circumstances will often affect the value of performance to the promisee, the person to whom the promise of performance was made. He considers the potential bankruptcy of the promisor and the potential windfall gains to the promisee. Trimarchi argues that discharge may improve planning, reduce administrative costs and create a better environment for renegotiation of the obligations to be performed. He also states that enforcement of damages measured by the cost of obtaining a substitute[43] may induce performance even when performance is inefficient, since the ex-post cost of the substitute may exceed the subjective value of performance.

Coloma analyzes reliance and expectation damages with and without a frustration excuse in a game theoretic model.[44] Under the assumption that the offeror adjusts the distribution of the surplus to reflect different rules, he finds that the rules can all induce efficient incentives for offer, acceptance and performance. He also analyses a model in which damages sometimes go unpaid. He finds that the threshold probability of payment, which must be exceeded to induce efficient behaviour, is lowest under expectation damages with a defence of frustration.

There is limited consensus in the literature.[45] Several of the considerations in the literature may have conflicting implications for whether to discharge or enforce a contract. In order to determine what the parties would have chosen, one would have to observe a great deal of information concerning their preferences. Unfortunately, the courts cannot easily observe

[42] *Trimarchi*, *supra* note 31.
[43] Such use of an observable market price is not unlikely, considering that the courts cannot observe the subjective value of performance to the promisee.
[44] German Coloma, "Damages for Breach of Contract, Impossibility of Performance and Legal Enforceability" (2008) 4:1 Review of Law & Economics 16 (EBSCOhost)[*Coloma*].
[45] See *Handbook L & Econ*, *supra* note 25 at 95-96.

these preferences. They do not know whether the parties would have been more concerned about incentives for reliance, incentives for performance or the costs of risk. No consensus has emerged concerning how these partial impacts of the doctrine can be combined to describe overall efficiency. Some authors favour strict enforcement; some favour discharge; some propose rules that would produce both results; some would modify terms and some would adjust damages.

The courts can observe one critical data point. They observe the agreement in another state of the world, which becomes less informative as the change of circumstances becomes more significant. A relevant consideration in determining whether the contract should be enforced is the degree of correspondence between enforcing the terms under the circumstances and the obligations that the parties actually accepted. In the next section, I analyze the incentives for parties to accept the application of a default rule.

IV. Frustration as a Requirement of Acceptance with Incomplete Contracts

The literature has generally focused on supplying the default rule that maximizes social surplus, on the theory that the parties would have preferred such a rule. The efficient allocation of risk has been of central concern.[46] However, individual parties to the contract may not accept the application of a default rule that would allocate a risk to them for which they are uncompensated. The focus of this section will be on the incentives of individuals to accept incomplete contracts. This analysis suggests a minimum set of contracts that should be discharged. I will then consider the private surplus of the parties and externalities. In doing so, I hope to integrate my analysis with the existing literature and explain why a radical change in obligations may be sufficient for discharge.

[46] See *Posner & Rosenfield*, *supra* note 9; *Sykes*, *supra* note 36.

The Voluntary Participation of Individuals

Consider a model where performance may be called for in one of two possible states of the world. The contract is made prior to the realisation of these contingencies. I assume that the parties bargain over State 1, bargain over both states or do not bargain at all. Recall that any adjustment of terms to compensate for the default allocation of risk would involve filling the gap with terms intended to apply in State two and is therefore not an incomplete contract.

Suppose that Party i has a utility function of wealth, such that $U_i'(W) > 0$, $U_i''(W) \leq 0$. If the contract is incomplete the relevant variables are defined as follows:

$$C_{ij} \equiv \text{Party i's cost of performance in state j}$$

$$V_{ij}(R_i) \equiv \text{the maximum amount Party i is willing to pay for performance in state j}$$

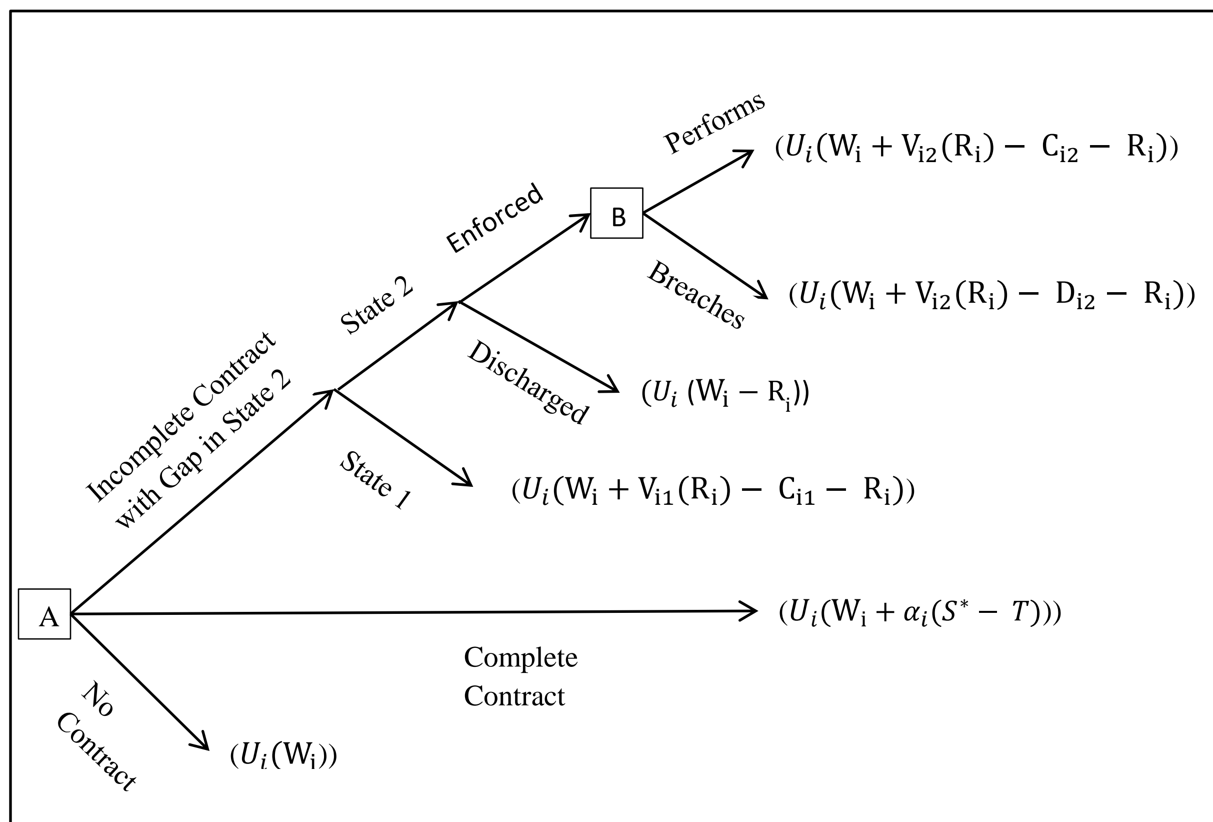
$$R_i \equiv \text{Party i's irreversible costs taken in reliance on the contract}$$

$$D_{ij} \equiv \text{the damages Party i must pay if he breaches in state j}$$

$$W_i \equiv \text{Party i's initial wealth}$$

If the parties transact around the default rule and provide their own terms for State 2 then the social surplus from this complete contingent contract is defined as S^*. The transaction costs of making the complete contingent contract are defined as T and the share of the surplus from contracting that Party i receives is α_i.

The parties must decide whether to enter a contract, whether to transact around the default rule and whether to perform. The problem of an individual considering contracting is represented by the following decision tree, with the resulting utilities of Party i in parenthesis:



Note that I have assumed that the parties always perform in State 1, because the circumstances in State 1 always match those for which the bargain was designed. I have also assumed that breach does not relieve the innocent party of his obligations[47] so Party i will still receive $\mathrm{V_{i2}}(\mathrm{R_i})$.[48]

By reverse induction, one can see that whether the default rule enforces or discharges the contract will affect Decision A of whether to make an incomplete contract, transact around the default rule or not contract at all.

[47] In reality, the innocent party is relieved of his remaining obligations when the breach deprives him of "substantially the whole benefit which it was the intention he should obtain from the contract." *Hong Kong Fir*, *supra* note 25.

[48] I assume that he will receive $\mathrm{V_{i2}}(\mathrm{R_i})$ even in the event of the other party's breach. This is because he will have a claim to either expectation damages or specific performance. Recall that expectation damages attempt to put the innocent party in as good a position as he would have been in had the contract been performed. *Hawkins v McGee*, *supra* note 25.

Consider the situation where parties make an incomplete contract. Assume that there are no externalities and parties have symmetric information that State 2 has a probability of ρ. Party i's utility function is $U_i(W) = W^{x_i} - q_i$[49] such that $0 \leq x_i \leq 1$ and the subtraction of q_i sets utility from initial wealth equal to zero. If state one occurs, Party i will have the following utility:

$$U_i(W_i + V_{i1}(R_i) - C_{i1} - R_i) = (W_i + V_{i1}(R_i) - C_{i1} - R_i)^{x_i} - q_i \geq U_i(W_i) = 0$$

The inequality comes from the fact that he voluntarily accepted these terms with State 1 in mind. If the contract is enforced in state two, Party i has the following utility function:

$$U_i(W_i, V_{i2}(R_i), C_{a2}, D_{a2}, R_i) = Max \begin{cases} (W_i + V_{i2}(R_i) - C_{i2} - R_i)^{x_i} - q_i \\ (W_i + V_{i2}(R_i) - D_{i2} - R_i)^{x_i} - q_i \end{cases}$$

Compared to State 1, Party i's cost of performance may have increased, perhaps sufficiently to cause him to breach. Alternatively, the value he receives from the contract may have decreased. Such changes could result in a negative utility when the contract is enforced in State 2. Party i has the following ex-ante expected utility under a default rule of enforcement:

$$EU_i(\ldots) = Max \begin{cases} (1-\rho)((W_i + V_{i1}(R_i) - C_{i1} - R_i)^{x_i} - q_i) + \rho((W_i + V_{i2}(R_i) - C_{i2} - R_i)^{x_i} - q_i) \\ (1-\rho)((W_i + V_{i1}(R_i) - C_{i1} - R_i)^{x_i} - q_i) + \rho((W_i + V_{i2}(R_i) - D_{i2} - R_i)^{x_i} - q_i) \end{cases}$$

This linear combination may be negative if the change in values and costs makes utility negative in State 2. Party i will not agree to an incomplete contract if it would result in negative ex ante expected utility. When the following condition is met, the parties will be forced to either transact around a default rule of enforcement or not contract at all.

[49] For the purpose of clarity in my discussion of risk aversion, I adopt a standard Cobb-Douglas utility function of wealth, normalized to zero at initial wealth. The conditions I derive are based on whether the contract has a positive or negative impact on a party's expected utility and hold under a more general utility function.

$$EU_i(\ldots) = Max\begin{cases}(1-\rho)((\mathrm{W_i}+\mathrm{V_{i1}}(\mathrm{R_i})-\mathrm{C_{i1}}-\mathrm{R_i})^{x_i}-\mathrm{q_i})+\rho((\mathrm{W_i}+\mathrm{V_{i2}}(\mathrm{R_i})-\mathrm{C_{i2}}-\mathrm{R_i})^{x_i}-\mathrm{q_i}) \\ (1-\rho)((\mathrm{W_i}+\mathrm{V_{i1}}(\mathrm{R_i})-\mathrm{C_{i1}}-\mathrm{R_i})^{x_i}-\mathrm{q_i})+\rho((\mathrm{W_i}+\mathrm{V_{i2}}(\mathrm{R_i})-\mathrm{D_{i2}}-\mathrm{R_i})^{x_i}-\mathrm{q_i})\end{cases} < 0$$

This requires both the following conditions to be met:

$$1: (1-\rho)((\mathrm{W_i}+\mathrm{V_{i1}}(\mathrm{R_i})-\mathrm{C_{i1}}-\mathrm{R_i})^{x_i}-\mathrm{q_i}) < -\rho((\mathrm{W_i}+\mathrm{V_{i2}}(\mathrm{R_i})-\mathrm{C_{i2}}-\mathrm{R_i})^{x_i}-\mathrm{q_i})$$

$$2: (1-\rho)((\mathrm{W_i}+\mathrm{V_{i1}}(\mathrm{R_i})-\mathrm{C_{i1}}-\mathrm{R_i})^{x_i}-\mathrm{q_i}) < -\rho((\mathrm{W_i}+\mathrm{V_{i2}}(\mathrm{R_i})-\mathrm{D_{i2}}-\mathrm{R_i})^{x_i}-\mathrm{q_i})$$

Party i's purpose for contracting is to increase his expected utility. If the conditions above are satisfied, the occurrence of state two would destroy this reason for accepting the enforcement of obligations. If the default rule discharged the contract in state two, his expected utility from the contract would be the following:

$$EU_i(\ldots) = (1-\rho)((\mathrm{W_i}+\mathrm{V_{i1}}(\mathrm{R_i})-\mathrm{C_{i1}}-\mathrm{R_i})^{x_i}-\mathrm{q_i})+\rho((\mathrm{W_i}-\mathrm{R_i})^{x_i}-\mathrm{q_i})$$

The following condition must be satisfied in order for Party i to accept a default rule of discharge:

$$EU_i(\ldots) = (1-\rho)((\mathrm{W_i}+\mathrm{V_{i1}}(\mathrm{R_i})-\mathrm{C_{i1}}-\mathrm{R_i})^{x_i}-\mathrm{q_i})+\rho((\mathrm{W_i}-\mathrm{R_i})^{x_i}-\mathrm{q_i}) \geq 0$$

$$3: (1-\rho)((\mathrm{W_i}+\mathrm{V_{i1}}(\mathrm{R_i})-\mathrm{C_{i1}}-\mathrm{R_i})^{x_i}-\mathrm{q_i}) \geq -\rho((\mathrm{W_i}-\mathrm{R_i})^{x_i}-\mathrm{q_i})$$

When $\mathrm{V_{i2}}(\mathrm{R_i}) < \mathrm{D_{i2}}$ and $\mathrm{V_{i2}}(\mathrm{R_i}) < \mathrm{C_{i2}}$, the right hand side of conditions 1 and 2 will be greater than the right hand side of condition 3. In some cases, all three conditions would be satisfied. In those cases, Party i would be able to accept a default rule of discharge but not one of enforcement.

Assume there is a set of potential parties who could make contracts with different values of the variables above. Consider a rule that discharges contracts only when one of the parties would not have accepted a default rule of enforcement. Specifically, the rule would discharge the contract when conditions 1 and 2 are satisfied for a party. For every case where these

conditions aren't satisfied, this rule would produce the same result as strict enforcement and these rules will be equally efficient. When conditions 1 and 2 are satisfied for a party, some will transact around this discharge rule and others will not. The rule would only discharge the contract in situations where the parties would have transacted around a default rule of strict enforcement or not contracted at all.

If parties choose to accept either default rule, they must prefer the incomplete contract to no contract. If the parties transact around a default rule they will choose the efficient terms, yielding S^*. Suppose that the terms of the incomplete contract with the default rule yield a surplus of $S^d \leq S^*$. $S^* - S^d$ is the benefit of transacting around the default rule. Parties will transact around the default rule, assuming that $S^* - T > 0$, if the following condition is satisfied:

$$4: S^* - S^d > T$$

If this condition is satisfied, transacting around the default rule would increase social surplus. The parties could divide this additional surplus between themselves, making everyone better off.[50] If the parties do not transact around the default rule, the expected benefit from doing so must be less than the transaction costs.

Since I have assumed that there are no externalities, a default rule that the parties accept must produce more social surplus than a default rule that the parties transact around. Discharging contracts when conditions 1 and 2 are satisfied would be unambiguously more efficient than a default rule of strict enforcement, because the parties who would not accept this rule are a subset of the parties who would not accept strict enforcement. When conditions 1, 2 and 3 are satisfied while condition 4 is not, this rule would make more social surplus achievable

[50] See generally *Ayres & Gertner*, *supra* note 9 at 109; *Cooter & Ulen*, *supra* note 9 at 218.

than a rule of strict enforcement. In all other cases the rules would produce the same social surplus. This analysis produces the following result:

Result 1: A rule that discharges contracts when enforcement under the circumstances would result in negative ex ante expected utility from the contract for one of the parties can dominate a rule of strict enforcement. In other words, a contract should not be enforced when a contingency arises that destroys a parties purpose for contracting.

Recall the key assumptions supporting this result. These include symmetric and accurate information about the probability of the event, no externalities, the existence a true gap in the contract and that neither party is at fault for causing the event. The same assumptions and analysis produce two other results.

Consider Party i's Arrow-Pratt measure of absolute risk aversion:

$$ARR_i = \frac{-U_i''(W)}{U_i'(W)} = \frac{-(x_i - 1)W^{x_i - 2}}{W^{x_i - 1}}$$

Now assume that this measure of risk aversion is less than ARR_j. Party j will have a lower certainty equivalent value of the gamble concerning the loss in State 2.[51] Because his risk premium is higher, he is the inferior risk bearer. Yet there is nothing in conditions 1 and 2 to prevent the contract from being discharged for the benefit of Party i. Whether the conditions are satisfied for Party i depends on Party i's utility, not on the risk aversion of party j. Neither Party j's initial wealth nor x_j enters the calculation.

Allocating the risk to Party i by requiring him to perform or compensate Party j would make Party i an uncompensated insurer against the losses from this event. When conditions 1 and 2 are satisfied, these uncompensated costs of risk would cause Party i to refuse to accept an

[51] Geoffrey A Jehle & Philip J Reny, *Advanced Microeconomic Theory*, 2d ed (Boston: Addison Wesley, 2001) at 107-09.

incomplete contract. The parties would be forced to transact around a default rule of enforcement or not contract at all. Discharging such contracts would offer the parties the option of avoiding transaction costs, which they will sometimes prefer to the alternatives. Though Party i is the superior risk bearer, the contract should still be discharged for his benefit. This produces the next result:

Result 2: The risk of losses from a contingency for which the contract does not provide should not always be allocated to the superior risk bearer.

The final result is perhaps the most counterintuitive. Authors in the literature have assumed that frustration occurs only when the cost of performance exceeds its value.[52] My analysis suggests that discharge is sometimes appropriate even when the value of performance exceeds the costs.

Because the contract produces positive utility in State 1, utility must be negative in State 2 in order for the conditions for discharge to be satisfied. In order for this number to be negative, $Max \begin{cases} V_{i2}(R_i) - C_{i2} - R_i \\ V_{i2}(R_i) - D_{i2} - R_i \end{cases}$ must be less than zero. Conditions 1, 2, and 3 must be satisfied for discharge to outperform enforcement. That would require $Max \begin{cases} V_{i2}(R_i) - C_{i2} \\ V_{i2}(R_i) - D_{i2} \end{cases} < 0$. All of these conditions focus on the net value of the contract to an individual and do not consider the entire social surplus of performance. Cases are possible where $V_{j2}(R_j) > C_{i2}$, but $V_{i2}(R_i) < C_{i2}$ and $V_{i2}(R_i) < D_{i2}$. Party i's costs, or the compensation he must pay to the other party, may rise above the value he receives, yet still be below the value the other party would receive from Party i's performance. An example would be an increase the costs of performance to a level between the contract price and the maximum willingness to pay of the purchaser. The analysis above

[52] See e.g. *Posner & Rosenfield*, *supra* note 11. *Coloma*, *supra* note 44.

suggests that the contract should be discharged for negative probability weighted linear combinations of a party's utilities in each state. This rule would discharge some contracts when the social value of performance exceeds the costs.

The reason to discharge these contracts is that one of the parties would not accept a default rule of enforcement. A rule that enforced these contracts would force the parties to transact around the default rule or not contract at all. A default rule of discharge for these contracts would allow the same options and grant some parties the additional option of increasing social surplus by avoiding transaction costs. If the contract is discharged while performance is still economically viable, then the parties may be able to come to a new agreement that would result in efficient performance. This produces the final result of this analysis:

Result 3: Contracts should sometimes be discharged when the value of performance still exceeds the costs.

I do not mean to suggest that this is the most efficient default rule. I only intend to show the three results above. This analysis suggests a minimum set of frustration cases that should not be enforced. Assuming the other conditions above are satisfied, contracts should be discharged, at a minimum, when the court has strong reason to believe that a party would not have agreed to enforcement.

Considering the fact that the change in circumstances is typically caused by a low probability event, one may question whether this is likely to affect a significant number of contracts. I cannot provide an empirical answer of how often enforcement in some contingency would result in a negative ex-ante expected utility from the contract. However, the potential contracts and contingencies are diverse and numerous, so it is likely that this situation will

sometimes arise. This problem is particularly likely in competitive markets. Assume that the supplier operates in a competitive market and receives zero economic profits. Since the price is assumed to provide zero profits in state one, enforcement in a higher cost state two would always result in a negative expected utility.

Considering the limited information available to courts, it is unlikely that they can identify precisely when ex-ante expected utility becomes negative. However, they may be able to conduct a rough assessment. Courts can probably identify some cases where it is highly unlikely that a party would have agreed to enforcement. This assessment may be fairly precise in cases of contracts between profit maximizers where the change in profits can be estimated. This inquiry does not require courts to weigh preferences, risk aversion and other factors to identify the terms the parties would have chosen. Instead, this inquiry asks whether there is sufficient reason to conclude that a party would not have accepted a particular set of terms.

I have analyzed the participation decisions of individuals to establish a minimum set of contracts that should be discharged. Other factors affecting the social surplus of the contract may justify discharge in additional cases.

Other Considerations and Social Surplus

Suppose that the terms the parties would have made had they made a complete contract yield a social surplus of S^{**} in state two. Suppose that the terms the court would impose in state two yield a social surplus of $S' \leq S^{**}$. The difference, $S' - S^{**}$, is defined as δ and ρ is the probability that state two occurs.

Suppose that the parties can provide for the contingency at transaction costs of T. Risk-neutral parties will transact around the default rule if $T \leq \rho E(\delta)$, because doing so would

increase the expected surplus of the contract by more than the transaction costs. The parties can split this additional surplus between themselves, making each party better off.[53]

In cases where neither party would suffer an ex-ante loss, the default rule should minimize the value of $E(\delta)$. A rule with a lower value of $E(\delta)$ would cause fewer parties to transact around the default rule.

The literature has identified several factors that will affect social surplus. One should consider the distribution of information, the costs of risk, the incentives for reliance, incentives for performance and the incentives for mitigation when assessing whether discharge or enforcement would yield a higher value of S'. However, it may be difficult to determine whether parties in a particular case would have preferred a rule of discharge or enforcement without observing the parties preferences. Assessing how radically obligations have change from those which were accepted may provide a practical alternative to identifying the parties' preferred terms.

The Efficiency of Court Imposed Terms and the "Radical Change in Obligations" Test

The magnitude of the change in obligations is likely to affect the value of $E(\delta)$ for a rule of enforcement. Suppose there is a set of parties making contracts which are affected by multiple possible future states of the world. Some of the contracting parties may prefer a rule of enforcement and some may prefer discharge for a contingency that was not provided for in the contract. When the contract is incomplete, courts are assumed not to be able to identify the type of parties, except perhaps in some extreme cases. If it enforces the contract, the court will impose a combination of the express terms that were designed for other circumstances and implied terms.

[53] See generally *Ayres & Gertner*, *supra* note 9 at 109; *Cooter & Ulen*, *supra* note 9 at 218.

As the difference in circumstances increases, the revealed intentions of the parties in other circumstances provide less information about their likely intentions in the new state. At one extreme, there are cases were the change is insignificant. Enforcement under the circumstances would be essentially the same as enforcing the terms to which the parties agreed. S' approaches S^{**} as the change in obligations goes to zero. For classes of cases where the change in obligations is small, courts can be confident that a default rule of enforcement reduces transaction costs.

As the change in obligations increases, preferences become more uncertain and the risk of inefficient implied terms is likely to increase. The inefficiency of express terms designed for other circumstances is also likely to increase as changed circumstances alter their costs and benefits more radically. For example, assuming that there was no true agreement regarding the realized circumstances, a drastic increase in the costs of performance could significantly reduce the efficiency of terms specifying price, quantity and the consequences of breach.

As the change in obligations becomes more significant, the value of $E(\delta)$ for an enforcement rule is likely to rise. More parties will find it worthwhile to provide perfect contingent terms. As more parties transact around the default rule of enforcement, the transaction cost justification for enforcement is weakened. It is therefore not surprising that contracts tend to be discharged for radical changes in obligations but enforced for minor changes in obligations. The weakening transaction cost justification for enforcement and possible externalities may explain why a radical change in obligations can be sufficient for discharge.

Externalities

The default rule will affect the transaction costs of contracting. Some parties may find it privately preferable to leave gaps in contracts to be filled by the courts. However, access to the

courts is subsidized by the public. Since parties do not bear the full costs of litigation, there is an externality to their decision to rely on the courts to fill gaps in the contract. When parties do not provide a sufficient signal of their preferences, the administrative costs of a discharge rule are likely to be less than those of enforcement. This is because enforcement would require the gathering the information in an attempt to provide efficient terms.

By refusing to enforce contracts when the parties have not provided a sufficient signal of their preferences, courts may reduce negative externalities. Parties who want their contracts to be enforced for a particular radical contingency would have the incentive to provide a sufficient signal of that intention.[54] This would reduce the public costs of litigation to fill gaps. The incentive to provide clearer agreements may also encourage out of court settlements by making the terms that a court would enforce more certain. Finally, refusing to enforce contracts when the intentions of the parties are uncertain may reduce rent seeking, by refusing the opportunity to impose exchanges on others through litigation.

For these reasons, the courts should only enforce contracts when they are reasonably confident that the parties would have preferred enforcement to discharge. The court should assess the circumstances, the costs of risk, incentives and the agreement that the parties made. If the circumstances have changed so radically that the court can no longer conclude that the parties would have preferred a rule of enforcement, then the contract should not be enforced.[55] When there is no true agreement, no confidence that an enforcement rule saves transaction costs and no fault of either party the presumption should be in favour of discharge.

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[54] Discharging contracts when courts lack sufficient information would be a penalty default rule, designed to induce parties to provide sufficient information for enforcement. See *Ayres & Gertner*, *supra* note 9.

[55] Note that contracts are not enforced when they are so incomplete that the court cannot identify a meaningful interpretation of the intentions to be enforced. *R v Cae Industries Ltd*, [1985] 5 WWR 481, 20 DLR (4th) 347, (CA).

This presumption would explain why a radical change in obligations from those which were accepted may be sufficient for discharge even when it cannot be proved that the parties would have preferred discharge to enforcement. The radical change in obligations destroys the information that voluntary participation reveals concerning preferences. If the court cannot observe the preferences of the parties, this may be sufficient to destroy confidence that a rule of enforcement would save transaction costs. Given the social costs discussed above, the court can reasonably discharge such contracts, providing the incentive for parties who would have wanted enforcement to provide sufficient information.

A court pursuing such an inquiry does not require the unlikely ability to assess preferences over risk, various incentives and the appropriate adjustment of terms in order to reach the first-best contract. It does not even require the ability to accurately determine whether parties would have preferred discharge or enforcement. It need only determine whether the obligations have changed to make them essentially different from those which were accepted. The assessment of the nature of an agreement is well within the experience and expertise of the courts.

V. Frustration in Practice

This section examines the correspondence between the results of a selection of cases, the theory of frustration presented above and the dominant economic theory of frustration as a method for allocating risk. In the interest of brevity, I will focus on the same cases as Posner and Rosenfield.

The Supply of Agricultural Products

Bad weather can obviously interfere with contracts for the supply of agricultural products. Consider the case of *Pearce-Young-Angel Co v Charles R Allen*. The defendant was a farmer who had contracted to supply eight hundred bags of dried blackeye peas. The plaintiff, seeking reassurance that the peas would be of a certain quality, did not accept the contract until being informed that the peas would come from the Dilley locality of Texas. The court found that Dilley was the only locality in Texas where there were peas of the quality contracted for. Prior to harvest, the entire crop of peas in Dilley of the quality contracted for was destroyed by torrential rains. The case was determined by the question of whether the origin of the peas was a term of the contract. The Supreme Court of South Carolina discharged the contract, reasoning that an act of God had made it impossible to perform the contract for peas from Dilley.[56]

This decision appears efficient in light of the analysis of acceptance above. The parties accepted liability on the grounds that the peas would be of a certain quality and from the farmer's field in Dilley. They did not specify who would bear the risk that these conditions would become impossible to satisfy. The fact that the contract was for specific peas is significant. It shows that the parties never agreed that a substitute would be provided if the specific goods that were contracted for were destroyed. Additionally, the costs to the farmer of providing these specific peas may be quite different from the costs of acquiring peas on the market when the entire crop in Texas is destroyed. A specific good may also have special value to the purchaser. When a contract is for a specific good and that good is destroyed it becomes impossible to perform the obligations that were agreed. To compensate the wholesaler for the failure to perform, the producer would have to provide the market value of the peas after a drastic supply shock. This expense may be significantly greater than the liability he accepted. It

[56] *Pearce-Young-Angel Co v Charles R Allen* (1948), 213 SC 578, 50 SE 2d 698.

seems likely that he would not have accepted a default rule that imposed on him this uncompensated liability, especially considering that the farmer in this situation would lose his crop. At least, his obligations under the circumstances are sufficiently different from those he accepted to raise doubts that enforcement is the rule that the parties would have chosen.

Posner and Rosenfield suggest that contracts are usually discharged when the supplier is a producer and enforced when the supplier is a wholesaler. They applaud this practice, arguing that producers are less able to bear the risk than wholesalers and that wholesalers are more able to do so than retailers.[57] I accept that wholesalers may be superior risk bearers, because of their ability to diversify. An analysis of acceptance also supports enforcing the contracts where the wholesaler is the supplier and discharging them when a producer is the supplier. Wholesalers have agreed to purchase goods on the market and accepted some risk that the market prices may fluctuate. Producers have agreed to provide goods that they grow, not to purchase them on the market. In the event of crop failure, enforcement would change the producer's obligation from production to paying out insurance-like damages. The obligation to purchase a substitute good on the market, or pay equivalent damages, is much more similar to the obligations that the wholesaler accepted than it is to the obligations that the producer accepted.

The Coronation Cases

The Coronation cases were all precipitated by the same event. The Coronation procession of King Edward VII was delayed due to illness. Many people had entered into contracts with the intentions of viewing the procession. Some of these contracts were discharged. One example is the case of *Krell v Henry*, discussed above. Recall that the defendant rented several rooms in a hotel at inflated prices. It was decided that the substance of

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[57] *Posner & Rosenfield*, *supra* note 11 at 106-07.

the contract was to rent windows with a view of the procession. The substance of the agreement became impossible to perform when the procession was delayed. The contract was discharged. [58] This appears consistent with the analysis of acceptance above.

The defendant agreed to the obligation to pay in exchange for the benefit of viewing the new King. The costs and benefits were radically altered by the delay of the procession. The defendant's purpose for the contract was destroyed by the delay. The loss of the purpose of the contract in the realized circumstances destroys any confidence that the parties would have chosen enforcement. Considering that delaying the procession does not prevent the hotel owner from renting out the rooms at inflated prices on the future date, it may be more likely that the parties would have chosen discharge. This conclusion is supported when one considers the likely position of the hotel owner had the guest been the plaintiff. If the substance of the contract was to rent a view of the procession, then the delay made performance by the hotel owner impossible. Had he been sued by all his guests, the hotel owner would probably have taken the position that his obligation to provide this view was not intended to apply in the event that the procession was delayed.

The coronation cases illustrate a difficulty with the application of the "superior risk bearer" test. It is difficult to apply the "superior risk bearer" test when a party is involved in several contracts affected by the same event. The hotel owner may be in a better position to bear the risk of the loss to an individual guest. However, the total costs of risk may be less when spread between many guests, rather than imposing the losses to several guests on a single owner. Posner and Rosenfield admit that the "superior risk bearer" test provides little guidance in this situation.[59] An analysis of the obligations that were accepted does not have the same problem.

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[58] *Krell v Henry*, *supra* note 21.
[59] *Posner & Rosenfield*, *supra* note 20 at 110-11.

The obligations that a party would be willing to accept would reflect his entire circumstances, including his other liabilities. A party would either be willing to accept or not, and this will not conflict with his exposure to other contracts.

Death and Service Contracts

Death has often been grounds for the discharge of contracts for personal service. Such cases were cited as authority in *Taylor v Caldwell*, which ended the period of relatively strict enforcement that followed *Paradine v Jane*.[60] Posner and Rosenfield focus on the case of *Cutler v United Shoe Machine Corp*. The plaintiff in that case was the estate of an inventor who died before completing his contract of employment with a machinery company. The estate alleged that some work had been performed for which the defendant had a contractual obligation to pay.[61] The court found that the services were of a technical nature for which the employee possessed specific skills and so the contract was for the work of that specific inventor. The court decided that the contract of employment was subject the implied condition that the employee be alive and well enough to perform and all contractual liabilities were discharged when the employee died.[62]

Posner and Rosenfield found that this decision is consistent with the "superior risk bearer" criterion. They argue that the employee would have information about his own health and the ability to purchase life insurance. They also say that the contract should have been discharged if the employer had been the plaintiff. They argue that the employer would have

[60] *Taylor v Caldwell*, *supra* note 17.
[61] Note that when a contract is discharged due to frustration, a remedy for breach of contract is not available. However, if a party partially performs obligations prior to discharge, he may be able to recover the benefit that he bestowed on the other party as a restitutionary or statutory remedy. See *Frustrated Contracts Act*, *supra* note 2.
[62] *Cutler v United Shoe Machinery Corp* (1931), 274 Mass 341 (available on WL), (Sup Jud Ct).

information about life expectancies, information about the potential losses resulting from the death of an employee and the ability to insure against such losses.[63]

It is by no means certain that the employer is better able to bear the risk that death will prevent the employee's performance, but worse placed to bear the risk that death would make the payment of wages impractical. The "superior risk bearer" test does not seem to provide a reliable result in this case. The authors do not identify a party that is consistently found to be better placed to bear the risk of death. Additionally, Posner and Rosenfield's analysis shows the difficulty that frustration of multiple obligations can cause for the "superior risk bearer" test. They suggest that the decision could depend on who brings the action. If they had concluded that the employee was the superior risk bearer in an action by either party, then their analysis would suggest that an action by the employer should result in enforcement while an action by the employee should result in discharge. A rule that may discharge the contract when one is a plaintiff and enforce it when one is a defendant could cause a race to be the first to bring suit. Perhaps the authors would avoid that race by allowing courts to discharge a contract in one action and enforce it in another. Alternatively, they could award damages against the plaintiff. Since these solutions have no correspondence with the actual practice of the law, this problem raises doubt that the law corresponds with Posner and Rosenfield's superior risk bearer analysis.

The decision in *Cutler v United Shoe Machine Corp* does appear to be consistent with the analysis of acceptance presented above. The decision to discharge this contract accords with the fact that neither party caused the death and enforcement under the circumstances would be radically different from what the parties had agreed. The liability to pay an employee who performs his obligations is different from the liability to pay an employee who does not. Similarly, the liability to perform a service when alive is quite different from the liability to

[63] *Posner & Rosenfield*, *supra* note 11 at 100-01.

perform that service when dead.[64] It is reasonable to conclude that the employer would not have accepted an uncompensated liability to pay an employee who had not completed his work. It is also reasonable to conclude that the employee would not have agreed to pay damages amounting to free insurance to compensate the company for his failure to perform when dead. Note that it does not matter who brings suit when the analysis focuses on acceptance, since upholding the contract would require the conclusion that both parties would have accepted liability.

The Superior Risk Bearer in Government Contracts

The difficulty of assessing risk preferences and other factors in an attempt to identify the terms that the parties would have chosen can be seen in the case of *Transatlantic Financing v United States*. In that case, a ship owner contracted with the government of the United States to transport wheat from Texas to Iran. At the time of signing, the government of Egypt had already precipitated an international crisis by seizing control of the Suez Canal. While the ship was en route, an outbreak of war caused the closure of the canal, forcing the ship to take a longer route. The court decided that, though the closure was unexpected, the closing of the canal did not make the contract commercially impracticable and found in favour of the United States.[65] Though Posner and Rosenfield applaud this decision[66], it is not clear to me that a shipping company is a superior risk bearer relative to the United States. The United States enjoys several advantages including being highly diversified and having better knowledge of international affairs. It seems likely that the United States had superior information and ability to bear the risk of an invasion of Egypt by some of the closest allies of the United States.

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[64] Note that a dead man would not be liable to specifically perform a contract of employment. His liability would be to pay damages for his failure to perform.

[65] *Transatlantic Financing Corp v United States* (1966), 363 F (2d) 312 (available on WL Can), (DC Ct App) [*Transatlantic*].

[66] *Posner & Rosenfield*, *supra* note 11 at 103-05.

An alternative explanation is that the change of course was not sufficiently different from the obligation that had been accepted. The contract did not specify the route that the ship would travel. In the business of international shipping, one presumes that shipping companies accept some risk that they may have to deviate from their preferred course. The court found that the Suez Canal was widely recognized by industry peers at the time as a dangerous route and that this had caused charter prices to increase. The ship owner alleged that the detour caused additional costs of $43,972. The charter price that had been agreed and paid was $305,843. The detour increased the length of the journey from approximately 10,000 miles to approximately 13,000 miles.[67] The facts that the shipping company had accepted some risk associated with detours and with the Suez Canal, that prices had risen to at least partially compensate for such risks and that the increase in cost was relatively small make it more likely that the parties would have accepted a default rule of enforcement. The fact that travelling approximately one quarter of the distance cost approximately one seventh of the charter price suggests that the contract may still have been profitable for the shipping company, so ex ante expected utility under a default rule of enforcement was unlikely to be negative. Though the United States was probably the superior risk bearer, the fact that the contracts still appears profitable for both parties suggests that they would have accepted a default rule of enforcement.

VI. Conclusions

The doctrine of frustration does not and should not always allocate risk to the superior risk bearer. It appears instead to focus on voluntary participation. By essentially enforcing mutually agreed obligations and refusing to impose involuntary transactions, the doctrine may contribute to the efficiency of contract law. When changes in circumstances make the intentions

[67] *Transatlantic*, *supra* note 65 at para 9.

of the parties sufficiently uncertain, the transaction cost saving motivation for enforcement is weakened. Under such circumstances, contracts should be discharged in order to avoid the public costs of gathering information to supply efficient terms through litigation and to deter rent seeking activities. Contracts should be discharged, at a minimum, when enforcement under the circumstances would cause a party's ex ante expected utility from the contract to be negative. This may result in discharge in some cases where the defendant is the superior risk bearer and in some cases where performance would still increase social surplus. By discharging contracts that would not have been intended to apply under the circumstances, such a rule would allow parties to avoid transaction costs and would dominate a rule of strict enforcement. These considerations may explain why legal systems around the world and throughout history have refused to enforce contracts when changed circumstances make obligations radically different from those which were accepted.

Bibliography

LEGISLATION

Frustrated Contracts Act, RSO 1990, c F34.

JURISPRUDENCE

Canadian Government Merchant Marine Ltd v Canadian Trading Co (1922), 64 SCR 106 (available on WL Can).

Cutler v United Shoe Machinery Corp (1931), 274 Mass 341 (available on WL), (Sup Jud Ct).

Davis Contractors v Fareham Urban DC, [1956] AC 696, [1956] 2 All ER 145.

Dawson v Helicopter Exploration Co, [1955] SCR 868 (available on WL Can).

Edwinton Commercial Corp v Tsavliris Russ (Worldwide Salvage & Towage) Ltd (The Sea Angel), [2007] 2 All ER (Comm) 634 (available on WL Can), (CA).

Hawkins v McGee (1929), 84 NH 114, 146 A 641.

Hong Kong Fir Shipping Co Ltd v Kawasaki Kisen Kaisha Ltd, [1962] 1 All ER 474 at 487 (available on QL), (CA).

John E Dodge Holdings Ltd v 805062 Ontario Ltd (2003), 63 OR (3d) 304 (available on WL Can), (CA).

Kesmat Investment Inc v Industrial Machinery Co (1985), 70 NSR (2d) 341 (available on WL Can), (NSCA).

Krell v Henry, [1903] 2 KB 740 (CA).

Kupchuak v Dayson Holdings Ltd (1965), 53 WWR 65, 53 DLR (2d) 482, (BCCA).

National Carriers Ltd v Panalpina (Northern) Ltd, [1981] 1 All ER 161, 43 P & CR 72, (CA).

Paradine v Jane (1647), Aleyn 26, 82 ER 897 (KB).

Pearce-Young-Angel Co v Charles R Allen (1948), 213 SC 578, 50 SE 2d 698.

R v Cae Industries Ltd, [1985] 5 WWR 481, 20 DLR (4th) 347, (CA).

Taylor v Caldwell (1863), 3 B & S 826, 122 ER 309 (QB).

Transatlantic Financing Corp v United States (1966), 363 F (2d) 312 (available on WL Can), (DC Ct App).

SECONDARY SOURCES

Luca Anderlini & Leonardo Felli, "Incomplete Contracts and Complexity Costs" (1999) 46:1 Theory and Decision 23 (SpringerLink).

KJ Arrow, "The Role of Securities in the Optimal Allocation of Risk-bearing", 31:2 The Review of Economic Studies 91 (JSTOR).

Stephen S Ashley, "The Economic Implications of the Doctrine of Impossibility" (1974) 26 Hastings LJ 1251 (Hein Online).

Ian Ayres & Robert Gertner, "Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules" (1989) 99:1 Yale LJ 87 (JSTOR).

Christopher J Bruce, "An Economic Analysis of the Impossibility Doctrine" (1982) 11:2 J Legal Stud 311 (JSTOR).

Marta Cenini, Barbara Luppi & Francesco Parisi, "The Comparative Law and Economics of Frustration in Contracts", online: (2009) Minnesota Legal Studies Research Paper 09-20 <http://ssrn.com/abstract=1418035>.

German Coloma, "Damages for Breach of Contract, Impossibility of Performance and Legal Enforceability" (2008) 4:1 Review of Law & Economics 16 (EBSCOhost).

Robert Cooter & Thomas Ulen, *Law & Economics* 5th ed (Boston: Pearson Education, 2008).

John Elofson, "The Dilemma of Changed Circumstances in Contract Law: An Economic Analysis of the Foreseeability and Superior Risk Bearer Tests" (1996) 30 Colum JL & Soc Probs 1 (Hein Online).

Oliver Hart & John Moore, "Foundations of Incomplete Contracts" (1999) 66 Review of Economic Studies 115 (EconLit).

Benjamin E Hermalin, Avery W Katz & Richard Craswell, "Chapter 1 Contract Law" in AM Polinsky & S Shavell eds, *Handbook of Law and Economics Volume 1* (Amsterdam: Elsevier, 2007) 3.

Geoffrey A Jehle & Philip J Reny, *Advanced Microeconomic Theory*, 2d ed (Boston: Addison Wesley, 2001)

John D McCamus, *The Law of Contracts* (Toronto: Irwin Law, 2005).

William Herbert Page, "The Development of the Doctrine of Impossibility of Performance" (1920) 18:7 Mich L Rev 589 (JSTOR).

Eric A Posner, "Economic Analysis of Contract Law after Three Decades: Success or Failure?", online: (2002) John M Olin Law & Economics Working Paper (2nd) 146 <http://ssrn.com/abstract=304977>.

Richard A Posner & Andrew M Rosenfield, "Impossibility and Related Doctrines in Contract Law: An Economic Analysis" (1977) 6:1 J Legal Stud 83 (JSTOR).

Michael G Rapsomanikis, "Frustration of Contract in International Trade Law and Comparative Law" (1979) 18 Duq L Rev 551 (Hein Online).

Steven Shavell, "Damage Measures for Breach of Contract" (1980) 11:2 Bell Journal of Economics 466 (JSTOR).

———, "On the Writing and Interpretation of Contracts", online: (2003) Harvard Law School John M Olin Center for Law, Economics and Business Discussion Paper Series 445 <http://lsr.nellco.org/harvard_olin/445>.

Alan O Sykes, "The Doctrine of Commercial Impracticability in a Second-Best World" (1990) 19:1 J Legal Stud 43 (JSTOR).

Pietro Trimarchi, "Commercial Impracticability in Contract Law: An Economic Analysis" (1991) 11 Int'l Rev L & Econ 63.

Marie-Louise Vierø, "Contracting in Vague Environments", online: (2006) Working Papers, Queen's University, Department of Economics 1106 <http://econpapers.repec.org/RePEc:qed:wpaper:1106>.

John D Waldis, "Common Law and Uncommon Events: The Development of the Doctrine of Impossibility of Performance in English Contract Law" (1986) 75 Geo LJ 1575 (Hein Online).

Michelle J White, "Contract Breach and Contract Discharge Due to Impossibility: A Unified Theory" (1988) 17:2 J Legal Stud 353 (JSTOR).

Aaron J Wright, "Rendered Impracticable: Behavioral Economics and the Impracticability Doctrine" (2004) 26:5 Cardozo L Rev 2183 (Hein Online).