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Unbundling Efficient Breach

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THE UNIVERSITY OF CHICAGO LAW SCHOOL

Unbundling Efficient Breach

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THE LAW SCHOOL
THE UNIVERSITY OF CHICAGO

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Unbundling Efficient Breach

ABSTRACT: Current law and economics scholarship analyzes efficient breach cases monolithically. The standard analysis holds that breach is efficient when performance of a contract generates a negative surplus for the parties. However, by simplistically grouping efficient breach cases as of a single kind, the prior literature overlooks some important factors that meaningfully distinguish types of efficient breach, such as effects of the breach on productive and allocative efficiency, restraints on the incentive to breach, information-forcing, and competitive effects of the right to breach. We argue that these factors are important for the development of a more nuanced economic theory of efficient breach. More specifically, we contend that there are relevant economic considerations that distinguish breaches carried out for the pursuit of a gain (“gain-seeking breaches”) from breaches meant to prevent a loss (“loss-avoiding breaches”) and breaches carried out by the seller from those carried out by a buyer. We show that the economic argument for loss-avoiding efficient breach is stronger than for gain-seeking efficient breach especially when the breaching party is the seller. From this analysis, we generated several hypotheses, which we tested in an incentivized lab experiment. The data show that test participants’ reactions differ with respect to gain-seeking and loss-avoiding breaches, exhibiting behavior in line with our theoretical predictions, giving us insight into the preferences and expectations of ordinary people in cases of breach, and being correlated with the apparent intuitions of judges in deciding efficient breach cases.

KEYWORDS: *contract damages, efficient breach, motives for breach*

JEL CODES: K12, D86, C9

...“the essential purpose of a contract between commercial men is actual performance and they do not bargain merely for a promise, or for a promise plus the right to win a lawsuit”.

UCC, Section 2-609, Comment 1

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1. Introduction

The concept of “efficient breach” is the cornerstone of the economic analysis of contract law. Parties form contracts to plan for the future, exchanging promises for future performance. Nevertheless the world is chaotic and unpredictable, and an exchange that seemed sweet when agreed upon may sour in the intervening interval prior to delivery. If changed circumstances render the performance of such a promise more detrimental to the promisor than beneficial to the promisee, then it is argued that we should allow the promisor to simply pay compensation rather than requiring performance.

The economic perspective, though persuasive, is not the only lens through which legal scholars view the law of contracts, the most influential alternative being the moral conception, which grounds contracts in the morality of promise-keeping. On the question of efficient breach, there exists a subtle tension between the two viewpoints. Both perspectives consider the failure to perform on a promise excusable in at least some subset of cases when the net social benefit of breach is sufficiently large (Warkol 1998, p. 321). Yet they do not always agree on the boundary conditions when such breaches may be permitted. Assuming Kaldor-Hicks wealth maximization, the standard economic analysis contends that if the promisor gains more than the promisee loses from a breach, then a damages rule (allowing nonperformance with compensation) will be efficient. Moreover, to the extent that expectation damages are perfectly compensatory, and the promisee is thereby fully compensated, such a breach would be Pareto efficient, leaving neither party in a worse position than if the promisor had in fact performed. In attempting to justify the economic approach to moralist critics, Shavell (2009) developed a hypothetical revealed-preference argument in defense of efficient breach, framing efficient breach in terms of “incomplete contract theory.” Because both parties are better off *ex ante* with the option to breach and pay damages (at least when the promisee is fully compensated), Shavell contends that it is what the parties *would have* agreed to, if they had contemplated whatever breach-inducing events hindered performance, and thus, he argues, the law should allow such breaches. Markovitz

and Schwartz (2011) proposed a similar argument, showing that when given a choice between alternative remedies in case of breach, sophisticated and rational contracting parties will choose expectation damages rather than bargaining for the stronger protection (e.g., specific performance or disgorgement). In a subsequent paper, Markovitz and Schwartz (2012) returned to this topic, further arguing that moral objections to efficient breach became irrelevant once it could be shown that parties would opt for a right to breach if left free to bargain over remedies.⁵

Notwithstanding these arguments advocating the economic interpretation of efficient breach, moral objections have continued to be levied against the permissiveness of the economic efficient breach doctrine (Sidhu, 2006; Shiffrin, 2009, 2012). In particular, deontological philosophers of contract law take the moral duty to keep one's promises as a foundational principle of contracts, which cannot be brushed aside by cost-benefit analyses. It is not the case, however, that philosophers of contract law insist on specific performance in all cases. Nearly all philosophers of contract law agree that failure to perform because of frustration or unanticipated changes in circumstance should be excused. The precise positions that philosophers of contracts have taken are variegated and nuanced. Some scholars (e.g., Fried, 2007) view expectation damages as appropriate in cases of "mildly frustrated" circumstances, whereas others (e.g. Mather, 1999; Shiffrin, 2007) argue that something more should be expected in cases of willful breaches.

The apparent conflict between moral and economic theories of contract law has led some legal scholars to insist on a strict conceptual separation between legal and moral obligations. Brooks (2006, p. 595) points out that the efficiency paradigm has led many to dissociate the moral and legal conceptions of promise-keeping. Yet despite the sustained efforts of legal academics to disentangle the legal and moral dimensions of contract breach, in practice both judicial and lay intuitions seem

⁵ For a critique of Markovitz and Schwartz (2011) implied-consent argument, and a formulation of alternative moral arguments in favor of the expectation remedy, see Klass, 2012.

ambivalent with respect to the notion of efficient breach (Warkol, 1998; Baron and Wilkinson-Ryan, 2009; Zamir and Medina, 2010).

In this paper, we seek to bridge the divide between economic and moral perspectives on efficient breach. We argue that the economic approach has ignored important differences in distinct types of efficient breach, treating the phenomenon monolithically and failing to appreciate that not all efficient breach cases are equal. Posner typifies the traditional thinking, writing, “[T]he law doesn’t really care about intentions. The remedy is the same . . . notwithstanding the intent of the breaching party” (Posner, 1999, p. 207; Posner, 2009).

Survey-based studies conducted in recent years (Baron and Wilkinson-Ryan, 2009) suggest that lay intuitions about the excusableness of nonperformance are surprisingly nuanced. Survey participants were tolerant of breach in cases where the promisor sought to pay damages in lieu of performance to mitigate unanticipated costs (“loss-avoiding breach”). Yet they were unwilling to excuse performance when the promisor breached to pursue a better deal (“gain-seeking breach”). The intuitions of laymen seem to track consequentialist (economic) reasoning in cases of loss-avoiding breach, while being deontological (moralist) in cases of gain-seeking breach.

These results suggest that the distinction between loss-avoiding and gain-seeking breach may be analytically important. We therefore investigate what *economic* reasons may justify survey participants' preferences, finding that a more fine-grained economic analysis resolves some of the tension with moralist accounts and lay intuitions regarding efficient breach. We analyze the distinctions between (1) loss-avoiding vs. gain-seeking and (2) buyer-breach vs. seller-breach with respect to five effects: (a) allocative efficiency, (b) productive efficiency, (c) restrained incentives, (d) information-forcing effects, (e) competitive effects. We hypothesize that the social norms and conventions that shape contract practice capture these differences, and that these factors, at least in part, are reflected in the lay intuitions.

Additionally, we are sensitive to the possible criticism that survey results from the prior literature should not be taken too seriously. We therefore

generated hypotheses from our analysis, which we then tested in an incentivized laboratory experiment. This study is the first to investigate these issues in a non-hypothetical, strategic environment, where subjects make decisions with real pecuniary consequences, both for themselves and for other participants of the experiment. Our results confirm that, broadly speaking, lay intuition is compatible with our refined economic rationale for efficient breach. We find that the experimental results support our conjectures, which indicate that the promisees require a higher compensation to consent to gain-seeking than to loss-avoiding breaches, while no significant differences emerge depending on whether the promisor is the seller or the buyer.

The paper is structured as follows. In Section 2, we review the moral and economic arguments for efficient breach in the prior literature. In Section 3, we explore how the distinctions between different types of efficient breach affect economic consequences differently. In Section 4 we claim that some legal rules and doctrines might demonstrate different reactions to loss-avoiding vs. gain-seeking breaches. In Section 5, we present the results of our experiment, which show that people's reactions differ with respect to gain-seeking and loss-avoiding breaches, while remaining the same with respect to seller-breaches and buyer-breaches – consistent with our hypotheses. In Section 6, we conclude with a summary of our results and possible policy implications.

2. Efficient Breach: Moral vs. Economic Arguments

We begin by surveying the philosophical and economic positions on efficient breach. The idea of efficient breach is a relatively modern concept. Many historical theories of contract law were hostile to such a permissive attitude toward promise-keeping. The Roman principle of *pacta sunt servanda* (literally, “agreements should be honored”) was bound up with moral implications (Schultz, 1936), and the binding force of contractual promises was grounded on moral and religious dogmas, such as the idea that “contracts were considered as being under Divine protection” (Wehberg, 1959, p. 775). The moral significance of contractual promises was also

forcefully established in the Scholastic tradition, as in Aquinas' *Summa Theologica*, II-II, question 89, art. 7: "[W]e must conclude that whoever swears to do something is bound to do what he can for the fulfillment of truth; provided always that the other two accompanying conditions be present, namely, judgment and justice."

Hume is also often cited by scholars of contract law as endorsing the idea that contractual promises create a moral obligation to perform,⁶ "This on the strict observance of [the stability of possession, its transference by consent, and the performance of promises], that the peace and security of human society entirely depend; nor is there any possibility of establishing a good correspondence among men, where these are neglected" (Hume, 1739-40, Book III, Part II, Section V). Yet the significance of this passage must be understood in the context of Hume's broader ethical outlook, which makes the obligatory force of contracts contingent on social relations rather than some objective moral "reality." In the Humean view of the world, breach is undesirable because it undermines the reliability of social relations, with respect to which contracts are an important element.

Present-day moral arguments frame the question more subtly, grounding objections to efficient breach on the "promise principle," a sophisticated development of the historical rationales.⁷ The argument from the promise principle runs as follows: When *A* promises *B* to do *X*, then the statement of the promise *P* is either true or false, contingent upon whether *A* subsequently performs *X* or not (i.e., *X* is the "truth-maker" of *P*). The immorality of a contract breach is therefore equivalent to the immorality of lying, since failure to perform *X* is equivalent to making *P* untrue. This conflicts with the permissibility of efficient breach insofar as breaching remains immoral (i.e., *P* is made untrue by the breach), despite *B*'s financial compensation by expectation damages.⁸ Thus, even if *B* is fully

⁶ See, e.g., Fried (1981, p. 1): "Security of the person, stability of property, and the obligation of contract were for David Hume the Bases of a civilized society."

⁷ The central proponent of this view is Fried (1981), with a rather ambivalent take about efficient breach.

⁸ Some care is required on this point. The promise *P* is not a declaration of the *intention* to perform *X*. Rather, it is a declaration that *X will* be performed. Farnsworth (1998, p. 10-13) draws an additional distinction between a resolution (to oneself) and a promise (to others).

compensated, it remains the case that *A* has, by committing himself to *X* and failing to perform *X*, acted immorally.⁹ Henry Mather (1999, p. 118) subscribes to the promise principle, opposing the economic rationale for efficient breach. Addressing economists, he argues on practical grounds, writing, “The so-called ‘efficient’ breach ... [should] be discouraged. A contracting party should not be encouraged to breach whenever he thinks his own gain will exceed the other party's loss. [...] Contracting parties should be made to understand that the legal norm requiring performance of contracts demands compliance, not private cost-benefit analysis.” Mather (1999, p. 118-119) is further concerned that, given imperfect information and negative effects of breach on the perceived reliability of contracts, the efficient breach doctrine could ultimately encourage inefficient and undesirable outcomes: “One party is seldom in a position to accurately predict the other party's loss, and is likely to resolve all doubts in his own favor, exaggerating his own potential gain and underestimating the other party's probable loss. This leads to ‘inefficient’ breaches. [...] Furthermore, the crude version of the efficient breach theory considers only the gains and losses of the two parties and thus ignores community values and the substantial social costs engendered by breach of contract. Any breach impairs social trust, and when breach becomes widespread, planning for the future becomes difficult or impossible (a very inefficient result).”

Realizing that expectation damages are not sufficient to deter efficient breach, Mather (1999, p. 119) argues that the use of punitive damages may be warranted in some cases to deter nonperformance: “A more sophisticated version of the efficient breach theory would recognize the need to deter breach by way of extra-compensatory liability whenever two conditions are both present: (1) the

The distinction is critical, because on this view, an efficient breach is not made moral by the fact that *A* *intended* to perform at time T_0 , though later changed his mind at time T_1 . Rather, the promise was that *A* would perform *X* at T_1 ; and it is only an incidental fact that the statement was uttered at time T_0 .

⁹ The criticism of the economic view, from the promise-principle perspective, is that it betrays contractual obligations and the reliance of *B* on *X*, or the expectation of *B* that *X*. However, these expectations are mere consequences of the contract – are not the essence of the contract (Farnsworth, 1998, p. 11).

social costs of breach would exceed the social gains, and (2) the promisor's gain from breach would exceed his expected compensatory liability. Undoubtedly, these two conditions sometimes coexist. [...] Punitive damages can serve beneficial purposes. [...] Punitive damages can perform a moral education function, teaching defendants and other members of the public that the duty to perform contracts is an important community norm, and it is not 'o.k.' to deliberately breach a contract so long as you pay your victim compensatory damages. We learn through punishment, and punitive damages may help some of us learn the standards of common decency."

Shiffrin (2007) argues that contracts create two distinct obligations: one legal and one moral. Both obligations are grounded in the "promise principle." In her view, the problem is that, by allowing parties to deviate from their legal promise via efficient breach, the law implicitly *encourages* the violation of their moral promise.¹⁰ Shiffrin brings to fore the tension between the legal and moral norms, questioning the coherence of contract law as being at the same time grounded upon and indifferent to promise-keeping: "How could a moral agent think both that breach of promise is, all things considered, wrong and also that it makes sense for us, as a community of moral agents, to create a system in which we attempt to encourage, however mildly, breach of promise (all the while holding out the possibility of deploying our moral condemnation of breach)?" (Shiffrin, 2007, p. 732). Shiffrin argues against the strong version of efficient breach theory (that contract law should regard efficient breach as "good") as inherently mistaken, since it conflates economic welfare with morality. As to the weaker version of efficient breach theory (that contract law should be considered independent from a moral theory of promises), she argues that this view contains an implicit alternative norm, observing that: "Under efficient breach theory, what propels the lack of punitive

¹⁰ Shiffrin (2007, p. 708): "Although the law should not aim to enforce interpersonal morality as such, the law's content should be compatible with the conditions necessary for moral agency to flourish. Some aspects of U.S. contract law not only fail to support the morally decent person, but also contribute to a legal and social culture that is difficult for the morally decent person to accept. Indeed, U.S. contract law may sometimes make it harder for the morally decent person to behave decently."

damages is an affirmative normative position: agents *should* breach when it would yield net economic gain. So punitive damages must be foregone in order to make breach, and thereby a more efficient system of exchange, more likely. A virtuous agent can surely accept that there may be good aspects to wrongful breach on certain occasions. Yet, if such breach is indeed, all things considered, wrong, a virtuous agent cannot accept the economic benefits of breach as constituting a sufficient, or even a partial, contributory justification for the law's content." (Shriffin, 2007, p. 732).

Like Mather and Shiffirin, Charles Fried's (1981) position is that contract law is philosophically grounded on promises. In Fried's view, our society has constructed the norm of promising-keeping as a device that allows humans to have mutual trust in one another, and "promising [...] gathers its moral force from that premise" (Fried, 1981, p. 17). Contracts are a special case of "promises [that] have attained legal as well as moral force. But since a contract is first of all a promise, the contract must be kept because a promise must be kept" (Fried 1981, p. 17). Unlike Mather, Fried should not be misread as endorsing a specific performance or punitive damages remedy to deter efficient breach. Rather, Fried's conceptual move aims at placing social welfare in a secondary role in contract theory, rather than the primary role that law and economics has traditionally given to it. Ultimately however, Fried pairs the promise principle with the expectation principle, favoring an expectation damages rule.¹¹

Several law and economics scholars have responded the moral arguments against efficient breach, attempting to make the economic argument more palatable for non-economists. Shavell (2006) observed that, while efficient breach *can* be immoral when the awarded damages are less than expectation damages, moral considerations should be tempered by the understanding that contracts are

¹¹ Fried (2007) largely considers expectation damages (and efficient breach) consistent with his conception of the promise principle: "Efficiency celebrates breach followed by compensation – this is the doctrine of efficient breach – while morality, so the instrumental theorists proclaim, would demand that the seller doggedly keep his bargain. [...] This is a conception of morality that I do not recognize.") (Fried, 2007, p. 5).

necessarily *incomplete* promises and that generally parties *would have* agreed to an expectation damages remedy if they had bothered to select a remedy *ex ante*. Similar arguments arise in the work of other scholars who suggest that the cost-benefit analysis underlying the notion of efficient breach reflects the implicit will of the contracting parties (Shavell, 2009; Markovitz and Schwartz, 2011 and 2012).

Moral theorists have not found these defenses of efficient breach convincing. The argument that in a hypothetical complete contract the parties would have included a right to breach in their agreement leaves a fundamental question unanswered. If a right to breach truly reflects the contracting parties' preferences and natural expectations (such as to amount to the implied will of the majority of them), how do we explain the promisees' distaste for efficient breach even when full compensation is granted?¹² Furthermore, Macaulay (2000) points out that, although crude practices of efficient breach could be observed in one-shot contractual interactions, when parties are involved in a relational contract they are less likely to indulge in efficient breach. This view is similarly embraced by the Official Comments to the Uniform Commercial Code: "This section rests on the recognition of the fact that the essential purpose of a contract between commercial men is actual performance and they do not bargain merely for a promise, or for a promise plus the right to win a lawsuit." (UCC, Section 2-609, Comment 1). Hence, the question arises again: if efficient breach is explained on efficiency grounds in one-shot relationships, why is it the case that repeat-players do not take advantage of their right to breach in their relational contracts?

A possible answer to these objections comes from a general complaint about efficient breach: expectation damages rarely make the promisee whole in practice. This complaint is echoed by several authors and is by most scholars accepted as an uncontroversial fact in contract practice. Shavell (2009) explains the reasons why expectation damages are rarely fully compensatory in practice: "The reasons given for believing that the expectation measure is often under-compensatory include the

¹² Macaulay (2000) observes that the presence of other factors is clearly reflected in the promisees' distaste for breach, even when full compensation is granted.

following. First, courts are reluctant to credit hard-to-measure components of loss as damages. Hence, lost profits and idiosyncratic losses due to breach are likely to be inadequately compensated or neglected. Second, courts are inclined to limit damages to those that could have been reasonably foreseen at the time the contract was made. Third, damages tend not to reflect the considerable delays that victims of breach may suffer. Fourth, legal costs are not compensated.” As with Shavell, the problem with efficient breach for Fried (2009) is not in its theory but in its application – damages are rarely equivalent to the promisee’s *expectation*: “In the end, [...] is the well-known fact that rarely do expectation damages make the disappointed promisee completely whole. If he is forced to sue, he will usually not get back his lawyer’s fees and court costs, not to mention that he has had to bear the risk of an unjustly unfavorable outcome in that suit. All this is avoided in the case in which the defaulting promisor at the outset offers full compensation measured by the promisee’s expectation” (Fried, 2009, p. 5).¹³ But if imperfect compensation is what drives the wedge between the economic and non-economic attitudes toward efficient breach, we should expect the promisee’s disappointment for the breach to be a function of under-compensation; or at least, the observed distaste for efficient breach should be invariant with respect to the circumstances that led to the breach. Yet recent survey research by Baron and Wilkinson-Ryan (2009) seems to suggest that circumstances matter.

These problems and objections challenge the very core of the incomplete-contract and implied-consent arguments used by law and economics scholars in defense of efficient breach. In this paper we wish to consider these challenges seriously, stepping away from the economic vs. non-economic discursive dichotomy, in the search for the factors that could explain the discrepancy between the economic and layman’s views on efficient breach. The theoretical analysis and the experimental findings, respectively discussed in Sections 3 and 5, will shed new

¹³ Fried (2007) had previously raised this concern when noting that the problem with efficient breach is not in its theory but in its application: “[Offering] full compensation measured by the promisee’s expectation ... is what the promisor *should* do. That is what morality demands and efficiency does not require otherwise” (Fried, 2007, p. 6).

light on the ongoing debate identifying some previously overlooked factors that play a role in the normative assessment of efficient breach. In Section 3, we explore these overlooked dimensions of efficient breach within the domain of economic analysis. In Section 5 we build on our theoretical framework to formulate some hypotheses and test them in an incentivized lab experiment. Our findings taught us a good lesson of wisdom as law and economics scholars. The layman's view is consistent with a more articulate understanding of the incentive effects of efficient breach.

3. Unbundling Efficient Breach: Theory

Philosophical writings on contract law do not distinguish contract breach cases using economic categories; instead, nearly every philosophical discussion of efficient breach distinguishes between cases where failure to perform was due to “frustration” or “unanticipated changes in circumstance” (in which cases the promisor is morally excused), and “willful breaches” (in which case the promisor is morally culpable). Between these two groups of cases, there is a less defined category of “*mildly* frustrated” circumstances. Moral theorists are split in their evaluation of the implications of these contract breach categories.

In Table 1 below, we introduce an economic taxonomy of contract breach categories, introducing a distinction between loss-avoiding vs. gain-seeking breaches, which we consider roughly analogous to the philosophical distinctions, and also between seller vs. buyer breaches.

		Breaching Party	
		Seller	Buyer
Reason for Breach	Loss-Avoiding	Case 1 (seller breaches to avoid a loss)	Case 3 (buyer breaches to avoid a loss)
	Gain-Seeking	Case 2 (seller breaches to pursue a gain)	Case 4 (buyer breaches to pursue a gain)

Table 1: *Four Cases of Efficient Breach*

This taxonomy has two interrelated objectives, which we pursue in this Section, and in Section 5, respectively. First, we introduce this taxonomy to distinguish four qualitatively different types of breach. We consider the effects of breach with respect to several potential effects: (a) allocative efficiency, (b) productive efficiency, (c) incentive alignment; (d) information-forcing effects, and (e) competitive effects. The resulting analysis of the effects of a right to breach will allow us to formulate some qualitative conclusions on the relative desirability (or lack thereof) of a right to breach in the four scenarios of breach that we consider. These qualitative results will allow us to formulate some testable hypotheses. In Section 5, we use this same taxonomy to test whether the lay intuitions of efficient breach map out along the lines of economically relevant factors. If they do, then we will have gone a long way toward resolving the discrepancy between moral and economic viewpoints on breach.

3.1 The Value of the Right to Breach

From a finance perspective, the right to breach a contract by paying compensatory damages is equivalent to an option. The option gives a prospective breacher (option holder) the choice between two alternative obligations: performance of the contract or payment of damages. Compared to the remedy of specific performance, the

option to breach gives an advantage to the promisor and a disadvantage to the promisee: at the time performance is due, the promisor can unilaterally choose the cheaper of the two alternatives (performance or damages), whereas under specific performance the promisor is forced to perform or to negotiate with the promisee to be relieved from his obligation to perform.

Yet, although the option to breach gives an advantage to the promisor and a disadvantage to the promisee, it is the net value of the option to the parties that will determine the parties' willingness to include an option to breach in their contract. The distributive effects of the option will be accounted for in the contract price, and parties will agree to an option to breach if the benefit of the option for the promisor exceeds the loss for the promisee.

It is well established in investment theory (McDonald and Siegel, 1986; Pindyck, 1991; Dixit and Pindyck, 1994), that the value of an option increases with (i) the volatility of the market (i.e., the volatility of the future costs and benefits of the contract), (ii) the duration of the option (i.e., the time lag between the formation of the contract and when the performance is due), and (iii) the existence of irreversible costs (or benefits) related to the contract performance.¹⁴ While the elements of volatility and duration are relatively straightforward, the understanding of the irreversible costs that are likely to be affected by a right to breach warrants special consideration.

3.1.1. Irreversible Losses

In order to illustrate the effects of an option to breach on irreversible deadweight losses let us begin by considering two cases of seller breach, characterized by different motivations ("why") for the breach. Does the value of an option to breach differ according to the motivation for the seller's breach? We suggest that the value of the option may indeed be different in "loss-avoiding" and

¹⁴ As Arrow and Fisher (1974) point out, the option may have a negative value when the irreversibilities on the benefit side exceed the irreversibilities on the cost side. Under those circumstances, the option value of a right to breach would be negative and we should not expect parties to include an efficient breach option in their agreement.

“gain-seeking” cases. One reason for divergent valuations of the option to breach is that in loss-avoiding cases the performance of an inefficient contract is likely to generate larger irreversible deadweight losses than in gain-seeking cases. The right to breach avoids the irreversible losses that would be created by an inefficient performance. For example, consider the following situation in which a change in circumstances increases the cost of performance above the expectation value:

Case 1: Seller’s Loss-Avoiding Breach. Seller undertakes to manufacture a machine for Buyer. Buyer pays 90, expected cost of performance is 80, and the value of the machine to Buyer is 100. In case of a breach by Seller, Seller compensates buyer for 100. After contracting, due to an unexpected rise in the price of raw materials, Seller faces an increase in performance costs to $80 + x$. For all values $x > 20$, Seller would choose to breach the contract, paying damages of 100. Performance of the original contract would create an irreversible deadweight loss equal to $x - 20$.

In this situation, performance of the original contract may lead to an irreversible deadweight loss. Once a good is produced at a cost that exceeds its expectation value, a deadweight loss is irreversibly generated.

In contrast, losses are often reversible when the prospective breach is driven by gain-seeking opportunities. For example, if a seller finds a better offer, performance of the original contract may at first sight appear inefficient, because the buyer offering a higher price is more likely to value the good more. However, if the object of the contract is a transferable good, the secondary market could reverse the misallocation created by the performance of the original contract. The original buyer could, in fact, resell the goods to the higher valuing third party.¹⁵ The following example illustrates this.

Case 2: Seller’s Gain-Seeking Breach. Seller undertakes to manufacture a machine for Buyer. Buyer pays 90, expected cost of performance is 80, and the value of the machine to Buyer is 100. In case of a breach by Seller, Seller compensates buyer for 100. After contracting, Seller finds a better buyer,

¹⁵ We discuss other possibilities infra.

offering a higher price $90 + w$. For all values $w > 10$ Seller would choose to breach the contract, paying damages of 100. Performance of the original contract would create a misallocation loss for all $w > 10$. However, the misallocation loss could in some cases be corrected through the secondary market, in which the original buyer would resell to the new buyer for a price greater or equal to 100.

These examples illustrate that the value of an option to breach may be greater for loss-avoiding cases than gain-seeking cases. In loss-avoiding cases, forcing specific performance would produce larger irreversible losses. By examining the differences in deadweight losses associated with loss-avoiding and gain-seeking situations in the examples above, we can hypothesize that the contracting parties might be more willing to include an option to breach in their contract for loss-avoiding breaches than gain-seeking breaches.

Along similar lines, we could explore the other two remaining cases with a buyer carrying out the breach. This will allow us to consider whether the identity of the breaching party ("who") should affect the option values for the right to breach. Also the remaining two cases of buyer breach will be characterized by different motivations ("why") for the breach. Does the value of an option to breach differ according to the motivation for the buyer's breach? We suggest that as in the case of seller's breaches also in the case of buyer's breaches, the value of the option may be different in "loss-avoiding" and "gain-seeking" cases, due to the different irreversible deadweight losses involved, but in the opposite order: the concern of irreversible losses is more severe with buyer's gain-seeking breach than with buyer's loss-avoiding breach. One reason for divergent valuations of the option to breach by the buyer is that in loss-avoiding cases the inefficiency of performance is due to the allocative inefficiency (i.e., the buyer is no longer the high valuing user). This form of inefficiency in some cases may be corrected through the secondary market: the low-valuing buyer can resell to a higher-valuing party after the original contract is performed. In contrast, in gain-seeking cases, a buyer's breach may instead avoid a productive inefficiency. If the buyer identifies a cheaper producer, performing the contract with the original seller means that the original, less-efficient party produces the good. The right to breach in this case avoids an

irreversible loss, which could not be corrected after the contract through the secondary market. For example, consider the following situation in which a change in circumstances decreases the benefit of performance below the cost of production:

Case 3: Buyer's Loss-Avoiding Breach. Seller undertakes to manufacture a machine for Buyer. Buyer pays 90, expected cost of performance is 80, and the value of the machine to Buyer is 100. In case of a breach by Buyer, Buyer compensates Seller for lost profit 10. After contracting, due to an unexpected change in circumstances, Buyer faces a decrease in the benefit of performance to $100 - x$. For all values $x > 20$, performance of the original contract would create a deadweight loss equal to $x - 20$. The deadweight loss will be irreversible when the performance cannot be redeployed toward different uses.

In this situation, performance of the original contract may lead to a (possibly irreversible) deadweight loss. Once a good is produced at a cost that exceeds its reduced value for the buyer, a deadweight loss is generated. The loss will be irreversible if the performance cannot effectively be redeployed toward alternative uses with a value above production cost. As we have noted when considering Example 1, a similar argument applies if the cost of performance for the seller were to raise above the expectation value for the buyer. The only difference between the two cases lies in the irreversibility of the loss. In Example 1, actual performance of the contract would lead to a productive inefficiency. Once the high-cost seller inefficiently produces the good, a deadweight loss would be created. The deadweight loss in this case would be irreversible. In Example 3, actual performance of the contract would instead lead to an allocative inefficiency. Once the low-valuing buyer gets a performance that she valued less than production costs, a deadweight loss is created. Unlike the previous case, however, if the performance can be redeployed to a higher-valuing buyer, the allocative deadweight loss can be reversed.

Consider now the last example, involving a buyer gain-seeking breach. As noted for Example 2, when the seller's breach is driven by gain-seeking opportunities, losses are often reversible. If a seller finds a better buyer, performance of the original contract may lead to allocative inefficiency. But, the

secondary market could often reverse the resulting misallocation. In Example 4, we illustrate the case of a buyer's gain-seeking breach where losses from inefficient performance of the original contract would be irreversible and not correctable by the secondary market.

Case 4: Buyer's Gain-Seeking Breach. Seller undertakes to manufacture a machine for Buyer. Buyer pays 90, expected cost of performance is 80, and the value of the machine to Buyer is 100. After contracting, Buyer finds a better seller, offering a lower price $90 - w$. For all values $w > 10$, Buyer would choose to breach the contract, paying lost profits of 10 to Seller. Performance of the original contract would create a productive inefficiency loss for all $w > 10$. The deadweight loss (productive inefficiency) could not generally be corrected through the secondary market.

The four examples discussed above illustrate an important consideration that sets our four cases of efficient breach apart. The value of a right to breach depends on the magnitude of the irreversible losses produced by an inefficient performance of the contract. In the following two subsections we illustrate the momentousness of the irreversibility argument to differentiate cases in of allocative and productive inefficiency, spanning across the four cases of breach considered above.

3.1.2 Allocative Efficiency

In the previous discussion, we observed that the right to breach in Cases 2 and 3 might be instrumental to promote allocative efficiency. Let us dwell further into this issue by comparing these two cases involving allocative efficiency, beginning with the case of a seller's post-contractual effort to find a better buyer (Case 2). There are two possible reasons why a new buyer might be willing to pay a higher price for the same good or service. First, the difference in price may be due to a different division of the contract surplus between the buyer and seller. The seller might simply be able to extract a higher price from his new buyer. Alternatively, the second buyer may offer a higher price because he actually values the good or service more than the first buyer. Although it is difficult to determine the subjective valuations of a buyer from the price he agrees to pay, some probabilistic inference is

possible. A buyer who offers a higher price is likely to value the good more than a buyer who offers a lower price. Overall, a gain-seeking breach by the original seller may thus be allocatively efficient: due to the right to breach there is a greater chance that the party who values the contract performance more actually gets it. However, we should keep in mind that the object of the contract performance is in some cases transferable. Allocative efficiency could therefore be obtained on the secondary market. For example, if a contract involves the transfer of a good, the original buyer could resell the good to some higher valuing third party.

The situation is similar when the buyer is the loss-avoiding promisor (Case 3). Suppose a buyer faces an unanticipated decrease in the benefit he receives from performance, such that he now expects a negative surplus from the performance of the contract. If the original contract involved the sale of a transferable good, and performance of the original contract were to be carried out, the initial misallocation may be corrected by resale to a higher-valuing third party.

In sum, the allocative efficiency effects of the right to breach are present across the categories of loss/gain and seller/buyer breaches in our taxonomy. A common characteristic of the sellers' gain-seeking breaches (Case 2) and buyers' loss-avoiding breaches (Case 3) is that in both cases, allocative efficiency could also be obtained in the secondary market. However the role of secondary markets in correcting allocative inefficiencies is not without limits. Secondary markets may be at times unable to correct the allocative inefficiency of the original performance (e.g., sale of non-resalable goods, or provision of a non-transferable service). Further, sometimes transaction costs between the original buyer and the new prospective buyer would preclude a transaction between them (e.g., the new buyer may only be accessible to the seller, and not to the original buyer). In all such situations, a right to breach would play a residual, yet important role in promoting allocative efficiency.

3.1.3 Productive Efficiency

In Section 3.1.1, we observed that the right to breach plays an important role also in promoting productive efficiency. Let's proceed by considering the effects of a right to breach on productive efficiency, contrasting seller's loss-avoiding breach (Case 1) and buyer's gain-seeking breach (Case 4). In Case 1, the original promisor may no longer be the most efficient producer due to an increase in costs, and performance of the original contract may therefore lead to productive inefficiency.

Unlike what we have observed with respect to allocative inefficiency, the role of secondary markets in addressing productive inefficiency problems is more limited. For example, in some situations, the promisor could address an increase in production cost by resorting to the secondary market (e.g., by subcontracting to a cheaper producer). In these situations, the secondary market will dictate the actual cost of performance, with no need to invoke a right to breach (a right to subcontract may be enough to prevent productive inefficiency). In most situations, however, secondary market solutions are generally unavailable to mitigate productive inefficiency problems, and performance of the contract by the original promisor would result in a deadweight loss. The right to breach provides the simplest and most direct way of avoiding productive inefficiency. Performance of the original contract would lead to an irreversible loss: once the less efficient seller produces the good, no subsequent transfer in the market can correct or mitigate the resulting loss in productive efficiency.

Similarly, productive inefficiency may lurk behind a buyer's gain-seeking breach (Case 4). Consider a case in which a buyer breaches because he finds a cheaper seller. The new seller might charge a lower price for the same good or service, simply because he is willing to make a lower profit. For example, the buyer could leverage the original contract to solicit a better offer from another seller. In this case, the lower price would only reflect a different division of the surplus between buyer and seller, with no immediate efficiency implications. Alternatively, the lower price may reflect the fact that the new seller faces lower production costs. In this case, requiring the original promisor to perform the contract would lead to

productive inefficiency, inasmuch as a greater production cost would be incurred for the performance of the contract. Although it is difficult to determine whether a cheaper sale price is due to lower production cost, or merely a different division of the surplus, some probabilistic inferences are also possible in this case. A seller who charges a lower price is likely to face lower production costs than a seller who charges a higher price. Overall, a buyer's gain-seeking breach may thus promote productive efficiency. The buyer's post-contractual search for a cheaper seller may result in a social gain in terms of productive efficiency.

In sum, efficient breach may promote productive efficiency in both sellers' loss-avoiding breaches (Case 1) and in buyers' gain-seeking breaches (Case 4). As with allocative efficiency, we should not expect considerations of productive efficiency to play a differential role in perceptions of loss vs. gain breaches or seller vs. buyer breaches.

When invoking the implied-consent theories to support efficient breach, it is important to keep in mind that the factors that determine the value of a right to breach are those that will ultimately affect the likelihood that the contracting parties would choose such a remedy in their contract. As we have seen in the preceding discussion, the effect of a right to breach on allocative and productive efficiency is highly contextual and varies greatly across situations and cuts across the "why" and "who" categories introduced in our taxonomy.

3.2 Right to Breach and the "Restrained Incentives" Problem

Recent survey research has found that people react differently to a breach, depending on whether the breach is carried out in the pursuit of a gain or in the avoidance of a loss (Baron and Wilkinson-Ryan, 2009). That evidence suggests that the reasons motivating breach may be relevant factors in determining when and whether allowing breach is desirable. Moral theories of contract are largely consistent with (and possibly seek to explain) this lay intuition. In this subsection, we provide an explanation of how they may be understood from an economic standpoint. We shall argue that in loss-avoiding cases (Cases 1 and 3), the incentives

of promisors are “restrained,” whereas in gain-seeking cases (Cases 2 and 4), they are “unrestrained.” When incentives are restrained—so our argument goes—an option to breach is more valuable to the parties than when incentives are unrestrained. Thus according to the restrained incentives consideration the option to breach is more valuable in Cases 1 and 3, and less valuable in Cases 2 and 4. Note that this conclusion is different from the one we have reached in Section 3.1: the irreversibility argument consideration implies that the option to breach is more valuable to Cases 1 and 4, than in Cases 2 and 3.

Let us begin by considering the premise posited in Shavell (2006, 2009) and Markovitz & Schwartz (2011, 2012), that counterfactually, what parties would have agreed to *ex ante* is likely to be efficient, but also morally desirable. The argument is that a rule permitting parties to breach and pay damages (the “option to breach” rule) would be morally desirable, because it simply “completes” an incomplete agreement. Yet contrary to Shavell and Markovitz and Schwartz, we argue that parties will tend to care what the *reasons* for breach are, preferring a rule permitting the option to breach in loss-avoiding cases but not in gain-seeking cases, because of the differing incentives generated by the two types.

Consider that contracting parties’ interests diverge with respect to breach: the promisee hopes to receive the promised performance and instead receives a monetary compensation that is often insufficient to compensate for his expectation, whereas the breaching party usually avoids a loss or obtains a gain from the breach. This does not mean that it would not be in both parties’ *ex ante* interests to adopt the option to breach rule. Rather, whether the option to breach is mutually desirable depends upon whether the parties would have been able to agree on the valuation of breach and adjust the contract price accordingly. We argue that such pricing is more feasible with loss-avoiding breaches than with gain-seeking breaches. The reason is that with loss-avoiding breach, the promisor’s incentives to breach are *restrained* by his incentives to decrease the cost of performance (as a seller) or increase the value of performance (as a buyer), which in turn decreases the probability of breach. In other words, in the face of a prospective loss-avoiding breach, the parties’ incentives are aligned: both parties would like to avoid such

occurrence, inasmuch as neither of them will gain from it. On the other hand, in gain-seeking cases the promisor's incentives to breach are *not* restrained. Because the promisor may simply pay damages in lieu of performance if a better deal comes along, the promisor is incentivized to search for opportunities to breach when the breach presents an occasion to increase his profits. Thus, the prospect of a gain by breach of contract creates an incentive misalignment between the promisor and promisee. Because breaching parties have private (perfect) information about their expected efforts to perform, it would be much harder for the parties to price the option to breach if the incentives to breach are unrestrained and strong (gain-seeking breach) than if they are restrained and weak (loss-avoiding breach).

To better understand the argument, consider the following example. We start with a case when the promisee is undercompensated and extend our analysis to cases when compensation is perfect.

Example 5. Seller undertakes to manufacture a machine for Buyer. Buyer pays 90, the expected cost of performance is 80, and the value of the machine to Buyer is 100. In case of a breach, Seller compensates Buyer for 95, so Buyer is undercompensated by 5. Seller has some influence on his cost of performance and could either decrease or increase its expected value by either undertaking some costly measures, or avoiding some costly measures. In addition, Seller has some influence on the likelihood that a second buyer would appear and offer him a price higher than 95. Would the parties agree ex ante on an option to breach for the seller in case of a loss-avoiding breach and in case of a gain-seeking breach?

We argue that the parties would more easily find agreement on an option to breach in the case of a loss-avoiding rather than a gain-seeking breach. Consider the former case first. The parties understand that in the event of a breach, the seller pays 95. This means that the seller might breach inefficiently (if costs of performance increase above 95 but below 100), or efficiently (if costs of performance increase above 100). In either case, the buyer bears some risk under an option to breach rule, incurring a cost of 5 if the seller fails to perform. But the buyer knows that the seller is incentivized to minimize the cost of performance, since any savings in the cost of performance are fully captured by the seller. Thus,

the buyer knows that although he may be left with uncompensated losses in the event of a breach, the seller will try to avoid an increase in performance cost. In other words, the seller's incentive to search for less costly performance of the contract is aligned with the buyer's interest in seeing performance.

However, incentives become misaligned in the presence of gain-seeking opportunities. With a gain-seeking breach, the buyer realizes that if the seller has an option to breach at 95, the seller has incentives to search for other buyers willing to offer a price greater than 95, with no restraints: if such a gain opportunity materializes, his incentives to breach will not be offset by any countervailing incentive to perform. In other words, the seller's incentives to search for buyers willing to pay a higher price are misaligned with the buyer's interest in receiving performance.

The point is that in both gain-seeking and loss-avoiding cases, the buyer has uncompensated losses in the case of a breach, which distort the seller's incentives. But there is a notable difference between the two cases. In gain-seeking cases, the seller's incentives to breach are unrestrained. Contrastingly, in loss-avoiding cases, the seller's incentives to breach are restrained. On the one hand, the seller is disincentivized from investing efficiently in reducing the costs of performance since he externalizes some of the cost of breaching (i.e., the buyer's loss). But at the same time, self-interest drives him to reduce the costs of performance, since such investment would yield greater profits.¹⁶

This observation does not imply that most parties would prefer specific performance in gain-seeking cases, and an option to breach in loss-avoiding cases. After all, the fact that the seller would do his best to breach (in gain-seeking cases) does not imply that the parties would not allow the seller to breach and pay damages, even if damages are under-compensatory. In fact, what they are expected to do – in both gain-seeking and loss-avoiding cases – is to compare the expected

¹⁶ And may also reduce his costs from breach, since even if he breaches and compensates buyer, he would be better off if his costs of performance were low (even if they were higher than expectation damages).

gains of the seller against the expected losses of the buyer, and if the former are greater than the latter, to allow the seller to breach. This reasoning assumes, of course, that the parties would adjust the contract price to account for those possible gains and losses.

That price adjustment is what differentiates the two types of breach. In gain-seeking cases, the likelihood of finding a better sale opportunity depends mainly on seller's efforts in searching for a second buyer; and both the costs of those efforts and the likelihood of finding a second buyer are private information of the seller. We expect that the rational seller will not reveal this private information to the buyer, but rather underplay the risk of such opportunistic behavior when they negotiate the contract. Although the buyer is well aware of the seller's unrestrained incentives to breach and of his motivation to underestimate its likelihood, stipulating the seller's level of effort in seeking out a second buyer is unrealistic, because those efforts are typically unverifiable and unobservable. Thus, for gain-seeking breaches, the misalignment of incentives and asymmetry of information hinder the parties' efforts to agree on a price for the option to breach. As a result, the parties may prefer a remedy of specific performance to one of damages, leaving the question how to divide the surplus from better sale opportunities to future negotiations.

In loss-avoiding cases, incentives are aligned and asymmetries in information are less problematic. The buyer knows that the rational seller will try to maximize his profit and thus to reduce his cost of performance, which in turn reduces the likelihood of a loss-avoiding breach. As with gain-seeking cases, the seller's anticipated level of effort to avoid breach is private information. But because the parties' incentives are aligned, the consequences of the asymmetric information are less problematic. In loss-avoiding cases, the option to breach is less likely to lead to opportunistic behavior, and the parties are thus more likely to agree to a mutually satisfactory damages remedy *ex ante*.

Note, that the constrained incentive argument is valid regardless of whether compensation is perfect or not. Even with perfect compensation, the parties would find it harder to agree on the value of the option to breach in gain-seeking rather

than loss-avoiding cases, for the reasons analyzed above. With under-compensation, however, the promisee's fear to suffer uncompensated losses due to the opportunistic behavior of the promisor makes any agreement on the right to breach even harder than in the perfect-compensation case. Under both scenarios, the differing incentives generated by loss-avoiding and gain-seeking situations, and the resulting greater probability that parties will agree on a right to breach in loss-avoiding situations, reconciles the economic and deontological perspectives on efficient breach.

Contrary to the legalistic perspective, which treats all efficient breach cases as of a single kind (see, e.g., Posner, 1999, 2009), we discover that the reasons for the breach *do* matter. Furthermore, this may explain why lay people react differently to different situations of breach: in loss-avoiding breaches, people tend to assume that the breach occurred notwithstanding the promisor's best effort to avoid it. After all, it was in the promisor's interest to prevent the breach – his incentives to breach were restrained. Contrastingly, in gain-seeking breaches, the promisor is actually incentivized *to seek out* reasons to breach – his incentive to breach is unrestrained.

3.3 Efficient Breach and Imperfect Compensation

A common critique of efficient breach theory is that expectation damages are rarely equivalent to the promisee's expectation. As pointed out above, reasons for under-compensation range from measurement difficulties and inadequate valuation of lost profits and idiosyncratic losses, to limits imposed on damages based on the foreseeability of the loss, as well as costs borne by the promisee because of adjudicatory delays, lawyer's fees and court costs, and court errors. As a result of these factors, in the event of a breach the promisee is rarely made whole (Shavell, 2009). The effects of under-compensation on efficient breach are worthy of consideration at this point.

In the following we focus on two effects of under-compensation in the context of efficient breach, showing that in the presence of imperfect compensation, a right to breach creates valuable information-forcing and competitive effects. In the following two subsections, we consider these points in turn, discussing how information-forcing and competitive effects emerge as desirable effects of an otherwise undesirable problem, and how these effects may differ across the four loss/gain and buyer/seller cases, in our taxonomy.

3.3.1 Information-Forcing Effects

Mitigating problems of asymmetric information is an important function of contract law. Like information-forcing rules (Goetz and Scott, 1980) and penalty default rules (Ayres and Gertner, 1989), the right to breach may sometimes induce the revelation of private information that would not otherwise be revealed in bargaining.

Consider the following scenario, corresponding to Case 1 in our taxonomy. A homeowner (promisee) enters into an agreement with a contractor (promisor) for repainting the exterior walls of his house. The homeowner possesses private information about the cost of performance, knowing from past experience that the exterior walls of his house were not properly sealed and absorb more paint than average. In the absence of a right to breach, the homeowner would not disclose this information to the promisor: divulging this information would likely increase the price that the homeowner would have to pay. Introducing a right to breach curbs the opportunistic behavior of better-informed promisee. Faced with the risk of an undercompensated breach, the homeowner would be encouraged to reveal his private information and consent to a higher contract price. A right to breach would thus serve as an information-forcing device, incentivizing the promisee to disclose relevant private information at the time of the contract, to avoid the risk of a loss-avoiding breach by the promisor.

A similar information-forcing effect can be found in Case 3 in our taxonomy. Consider again an agreement between a homeowner and a contractor for repainting the exterior walls of a house. In this case, consider the symmetric situation in which

the promisor possesses private information about the promisee's benefit from performance. Specifically, imagine a situation in which the contractor knows that the benefit from repainting the exterior of the house will be smaller than expected, because the City will soon require all homeowners to repaint their homes with new eco-friendly insulating paint. If the homeowner has no right to breach, an inefficient performance of the contract might take place, even in the face of a reduced valuation of the performance by the promisee. By introducing a right to breach, an information-forcing effect would arise: if the contractor expects to be left undercompensated in the event of a breach, he would be incentivized to reveal his private information at the time of the agreement to prevent a breach by the homeowner.

In mitigating information asymmetries of this kind, the right to breach may even be more effective than an affirmative duty to disclose, because the right to breach nudges the payoffs of the parties so that disclosure of relevant private information will tend to be in their own interest, whereas under a duty to disclose regime, parties remain better off concealing private information if they can get away with it. Given the evidentiary obstacle of establishing whether a promisee had private information prior to conclusion of the contract, and the possible boundary problems about what information the duty applies to, there is much to recommend the right to breach as a preferable tool for incentivizing disclosure.

Information-forcing effects are less conspicuous in gain-seeking cases. Gain-seeking opportunities arise due to the presence of third parties, buyers or sellers, whose better price entices a breach. Whether a right to breach exists or not, the parties would generally have no incentive to reveal this information to their contracting party. As it will be discussed in the following subsection, in the face of gain-seeking opportunities, the effects of a right to breach will materialize under the form of competition, rather than disclosure.

3.3.2 Competitive Effects

The right to breach cultivates pre-contractual competition among the parties. When promisors have the right to breach and pay damages that are under-compensatory, the gain-seeking behavior of the seller may abet competition among buyers prior to the agreement of a contract, just like the gain-seeking behavior of the buyers may trigger ex ante competition by sellers. We may better understand the ex ante competitive effects of ex post gain-seeking behavior by considering these two examples.

The first example corresponds to Case 2 in our taxonomy. Consider again our example in which a homeowner enters into an agreement with a contractor for repainting the exterior walls of his house. In this case, consider a situation in which the homeowner has information about the promisor's opportunity cost, knowing that other neighboring homeowners are willing to offer a higher price for the same service. If the contractor has no right to breach, the homeowner will try to secure the lowest possible price, knowing that, once reached an agreement, the contractor will carry through his commitment, rather than pursuing a more profitable deal with the neighbors. A right to breach would alter this equilibrium. If the contractor has a right to breach, the homeowner would anticipate that the contractor will engage in gain-seeking behavior, and that in case of a breach he might thereby lose some of his contract surplus because of under-compensation. Aware of this risk of "efficient" breach, the homeowner would reasonably try to preempt the breach by offering a higher price for the contractor's services.

The second example corresponds to Case 4 in our taxonomy. Here the contractor anticipates gain-seeking behavior and a possible undercompensated breach by the homeowner. Going back to our example, imagine that the contractor knows that there is another contractor that offers the same service at a lower price. If the homeowner has no right to breach, the contractor will try to secure the highest possible price, knowing that, once reached an agreement, the homeowner will have no incentive to engage in gain-seeking behavior, pursuing cheaper contract opportunities with other contractors. A right to breach would alter this equilibrium. If the homeowner has a right to breach, leaving the other party

undercompensated, the contractor would reasonably try to preempt the breach by offering a lower price for his services.

In both Case 2 and Case 4 of our taxonomy, the right to breach nurtures competition between the contracting parties. Specifically, a right to breach for gain-seeking motivations would foster ex ante competitive behavior by promisee and promisor, incentivizing them to reveal their true valuation and actual cost of the performance through the contract price, to avoid the risk of undercompensated “efficient” breaches of contract.

3.4 The Efficiency of Efficient Breach: A Summary

As we have discussed, the different irreversibility of losses, the different allocative and production efficiency effects, the different incentive, information-forcing and competitive effects, reinforce the notion that efficient breaches cannot be treated homogeneously. In considering the differences between loss-avoiding and gain-seeking breaches, in both seller breach and buyer breach cases we develop a more nuanced and complete account of efficient breach. In this paper, we stepped away from the conventional dichotomy of moral vs. economics arguments on efficient breach, showing that a more nuanced economic understanding of the justificatory framework for efficient breach reveals hidden similarities between economic and deontological perspectives on breach.

Tables 2 and 3 below summarize some of the economic effects of efficient breach, for the four cases of breach introduced in Section 2. The presence and magnitude of the economic effects vary according to the market role of the promisor and whether the breach occurred in the pursuit of a gain or in the avoidance of a loss.

	Allocative Inefficiency	Productive Inefficiency	Incentive Alignment	Information-Forcing Effects	Competitive Effects	Factors for Right to Breach
Case 1: Seller Loss-Avoiding Breach	N.A.	Yes (+)	Restrained (+)	Yes (+)	N.A.	3
Case 2: Seller Gain-Seeking Breach	Yes, often Reversible (+)*	N.A.	Unrestrained (-)	N.A.	Buyers' Competition (+)	0.5
Case 3: Buyer Loss-Avoiding Breach	Yes, often Reversible (+)*	N.A.	Restrained (+)	Yes (+)	N.A.	2.5
Case 4: Buyer Gain-Seeking Breach	N.A.	Yes (+)	Unrestrained (-)	N.A.	Sellers' Competition (+)	1

(-) Factor Against Right to Breach

(+) Factor in Favor of Right to Breach

Table 2: *Effects of Efficient Breach*

Table 2 summarizes the effects of efficient breach indicating with (-) the factors that play against the desirability of a right to breach, and with (+) the factor that play in favor of the right to breach. As discussed above, some of the identified effects are reversible in the secondary market. We have marked these reversible deadweight losses with (*), assigning a weight of 0.5 to the corresponding factor. The factors marked with N.A. have a null effect and do not play in favor or against a right to breach. The total number of factors in favor of a right to breach in the far right hand column can be viewed as a qualitative assessment of desirability of efficient breach in the four cases under consideration, giving us a crude assessment of the desirability of a right to breach in our four cases.

Table 3 below, summarizes these qualitative results, summing them across the categories of “why” and “who” of our initial taxonomy.

	Type of Breach	Cases #	Total # of Factors in Favor of Right to Breach
“Why”	Loss-Avoiding Breaches	(1) and (3)	5.5
	Gain-Seeking Breaches	(2) and (4)	1.5
“Who”	Seller Breaches	(1) and (2)	3.5
	Buyer Breaches	(3) and (4)	3.5

Table 3: Efficient Breach by Type

Comparing the four types of breaches in Tables 2 and 3, leads to several observations and hypotheses. Loss-avoiding cases (Cases 1 and 3) have higher scores than gain-seeking cases (Cases 2 and 4). By examining the different effects of a right to breach in loss-avoiding and gain-seeking situations, we can hypothesize that the contracting parties might be more willing to include an option to breach in their contract for loss-avoiding breaches than gain-seeking breaches. This further implies that both for seller-breaches and buyer-breaches, a loss-avoiding breach will be relatively more acceptable than a gain-seeking breach. Even though the right to breach produces different incentive effects for sellers and buyers (see Table 2), there is a comparable number of factors that play in favor (or against) a right to breach, in the two groups of cases. Seller-breaches and buyer-breaches should find a comparable level of acceptance by the contracting parties. In Section 5, we will test this hypothesis in an incentivized lab experiment.

In the following section, we will discuss whether the motivation for breach – loss-avoiding or gain-seeking – or the market-role played by the promisor affects courts’ decisions on the choice of remedy or the quantification of damages.

4. The Law

The two main remedies available to the disappointed promisee are specific performance and damages. Damages may either be complement or substitute of specific performance. In addition, on rare occasions courts award disgorgement damages, measured by the benefit the promisor derived from the breach (Restatement, 3d, Restitution and Unjust Enrichment § 39), or punitive damages (Farnsworth, § 12.8, p. 788). Note that the effect of disgorgement and punitive damages on the promisor's incentives are similar to the effect of specific performance: they reduce incentives for the promisor to breach, while compensatory damages alone allow the promisor a meaningful choice between performing the contract or paying damages. Thus, efficient breach is attainable when the remedy for breach is compensatory damages, but not when it is specific performance, disgorgement, or punitive damages.

Let us now consider whether the motivation for breach (loss-avoiding or gain-seeking) affects courts' choices of remedies. While the distinctions between the effects of loss-avoiding and gain-seeking breaches has not been explicitly recognized by courts as a relevant factor in choosing remedies, some of their characteristics may nevertheless influence decision-making.¹⁷ For whatever reason, we observe that many courts' decisions exhibit greater sympathy for the promisor when the breach is deemed innocent or inadvertent. This sympathy is manifested in courts' decisions either to require specific performance more readily when a breach is found to be willful or malicious, or to award in those latter cases greater-than-compensatory damages (for example punitive damages [Farnsworth, § 12.8, p. 788], or cost of repair instead of diminution in market value [Farnsworth, § 12.13, p. 820]. Interestingly, gain-seeking breaches are more readily regarded as willful, while loss-avoiding breaches are more readily regarded as inadvertent. Of course, loss-avoiding breach is very often willful in the sense that the promisors, upon weighing the costs and benefits of performance, deliberately elect to breach, but it is the

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desire to breach – whatever changed circumstances resulted in the promisor’s expected gain turning into an expected loss – that is not attributable to the promisor. With gain-seeking breaches, however, the promisor not only chooses to breach upon weighing the costs and benefits of performance: he actively *seeks out* those causes, and therefore his breach could more easily be regarded as willful. This distinction between the two types of breaches corresponds to the *restrained incentives factor* we discussed in Section 3.1.1.

Another important factor that courts often consider when deciding between a specific performance and damages remedy is whether specific performance would be too “harsh” or “burdensome” on the promisor (Farnsworth, § 12.5, p. 770; Restatement 2d Contracts, § 364(1)(b)). We expect this principle to apply asymmetrically to loss-avoiding and gain-seeking breaches. With loss-avoiding breaches, specific performance puts the promisor in a worse off position than he would have been had the contract not been made; with gain-seeking breaches, specific performance leaves the promisor better off than he would have been without the contract. Thus, the “harshness” and “burdensomeness” of specific performance seems naturally applicable to loss-avoiding breach, though not to gain-seeking breach. Because of this difference, we should not be surprised that courts tend to treat the two types of breach differently. This difference, which we expect to affect the choice of remedies, is explainable, at least in part, by the *restrained incentives factor* discussed in Section 3.1.1.

Lastly, there are special cases where some courts are willing to allow a disgorgement damages remedy. In such a typical case, the seller breaches his contract for the sale of a unique good (usually real estate) with one buyer, and sells the good to another buyer for a higher price. With disgorgement damages, the first buyer is able to recover the profits the seller made from the sale (Restatement, 3d, Restitution and Unjust Enrichment § 39, Illustration 1). This remedy, is equivalent to specific performance from the perspective of the seller, since it discourages efficient breaches. This remedy is mainly used for real estate property (although the Restatement, 3d, Restitution and Unjust Enrichment § 39, advocates its more general use). Yet it is informative to observe that it is almost only applied to gain-

seeking breaches (Eisenberg, 2006, pp. 581-84, 592-7).¹⁸ Loss-avoiding promisors are almost never obliged to pay disgorgement damages from breach. Instead, in the absence of specific performance, they are only liable to buyers for compensatory damages.

Though courts do not explicitly recognize the distinction between gain-seeking and loss-avoiding breaches, we observe a difference in the legal outcomes of the two types of cases.¹⁹

In Section 5, we present our experimental data on lay people's reactions to efficient breaches. We find the foregoing reasoning to be consistent with these findings, which seem also to confirm that individuals implicitly recognize a difference in kind between loss-avoiding and gain-seeking breaches. The results reveal that there is such compatibility both with respect to the "why" question (loss avoiding versus gain-seeking breaches) and with respect to the "who" question (Seller's versus buyer's breaches).

5. Unbundling Efficient Breach: An Experiment

We assigned participants randomly to the role of buyer or seller in the sale of a good. Sellers and buyers begin with a contract already in place: one party may then choose to breach. The contract is subject to a specific performance remedy, i.e., either party can force the other to fulfill the contract obligation. The contract is given exogenously and the transaction price is set to 90 experimental currency units (ECUs). Ex ante production cost for the seller is set to 80 ECUs, while the ex ante value of the good for the buyer is set to 100 ECUs. Hence, the contract produces a

¹⁸ Eisenberg (2006), however, argues that the disgorgement remedy should be more generally applied by courts.

¹⁹ German courts distinguish between the two types of breaches and use different remedies for loss-avoiding and gain-seeking breaches (Eager, 1995, p. 110). Two Supreme Court decisions – BGH-Urteil from 7.10.1981, in: Betriebsberater 1982, pp. 146ff., and BGH-Urteil from 11.6.1980, in: Neue Juristische Wochenschrift 1980, pp. 1518 ff. – are on point. Both decisions are discussed in Baur (1983, pp. 92 and 100). We are grateful to our colleague Thomas Eager for bringing these cases to our attention.

surplus of 20 ECUs to be divided equally between the two parties. After the contract is signed, however, the production costs may increase, or the expected value of the good may decrease, due to an exogenous shock. Also, the parties may seek out a better contract opportunity with a third party.

We implemented two between-subjects treatments: *Sellers* and *Buyers* (Table 4). In the *Sellers* treatment, the shock only impacts the seller, either increasing the production costs (from 80 to 110 ECUs) or introducing the availability of a new opportunity to sell the good (at 110 instead of 90 ECUs). In the former case, the seller may breach the contract to *avoid a loss* of 20 ECUs (Table 1, Case 1), while in the latter he may breach to *pursue a gain* of 20 ECUs (Case 2). However, given the specific performance remedy, the seller can breach the contract only if the buyer agrees, accepting some form of monetary compensation in lieu of performance. The buyer earns no monetary payoffs from the contract if the contract is breached. It is worth observing that in our setup, if a change in the initial conditions occurs, breaching is always efficient; however, as the contract is subject to a specific performance remedy, efficient breach requires the consent of the buyer.

In the *Buyers* treatment, we invert the situation so that the shock only impacts the buyer, either decreasing the buyer's valuation of the good from 100 to 70 ECUs, or introducing the opportunity to acquire the good elsewhere (at 70 rather than 90 ECUs). In the former case, the buyer may breach to avoid a loss (Table 1, Case 3), while in the latter he may breach to pursue a gain (Case 4). Once again, breaching is always efficient and increases the total surplus by 10 ECUs. Also in this case, the specific performance remedy implies that the seller must consent to the buyer's breach, accepting payment of damages in lieu of performance. Subjects play 18 periods of the stage game, and roles remain fixed throughout the experiment. At the beginning of the first period, subjects receive an endowment of 150 ECUs.

	Sellers treatment	Buyers treatment
Loss-avoiding breach	Case 1: seller breaches to avoid loss ($\uparrow$ costs=110) Contract fulfilled $\pi_s^c = -20; \pi_b^c = 10; S^c = -10$ Efficient breach $\pi_s^{br} = -K; \pi_b^{br} = K; S^{br} = 0$	Case 3: buyer breaches to avoid loss ($\downarrow$ value=70) Contract fulfilled $\pi_b^c = -20; \pi_s^c = 10; S^c = -10$ Efficient breach $\pi_b^{br} = -K; \pi_s^{br} = K; S^{br} = 0$
Gain- seeking breach	Case 2: seller breaches to pursue a gain ($\uparrow$ price=110) Contract performed $\pi_s^c = 10; \pi_b^c = 10; S^c = 20$ Efficient breach $\pi_s^{br} = 30 - K; \pi_b^{br} = K; S^{br} = 30$	Case 4: buyer breaches to pursue a gain ($\downarrow$ price=70) Contract performed $\pi_b^c = 10; \pi_s^c = 10; S^c = 20$ Efficient breach $\pi_b^{br} = 30 - K; \pi_s^{br} = K; S^{br} = 30$
Inefficient breach	Case 5: no variations for the seller Contract performed $\pi_s^c = 10; \pi_b^c = 10; S^c = 20$ Inefficient breach $\pi_s^{br} = -K; \pi_b^{br} = K; S^{br} = 0$	Case 6: no variations for the buyer Contract performed $\pi_b^c = 10; \pi_s^c = 10; S^c = 20$ Inefficient breach $\pi_b^{br} = -K; \pi_s^{br} = K; S^{br} = 0$

Notes: π_i^j denotes the earnings of party i (s =seller; b =buyer) in case of j (c =execution of contract; br =breach) and K is the accepted compensation to breach the contract.

Table 4: *Four Cases of Efficient Breach*

In each period, buyers and sellers are randomly matched in pairs and go through the following steps:²⁰

Stage 0: the buyer and the seller are informed about the contract terms.

Stage 1: an exogenous shock can happen and the value of the good for the buyer can decrease (loss-avoiding breach) or a new seller can be introduced, offering a lower price (gain-seeking breach).

²⁰ In the following, we will describe the game for the *Buyers* treatment. In the *Sellers* treatment, roles were reversed in stages 2-5. In both treatments, stages 0, 1, and 6 lasted 10 seconds each.

Stage 2: the buyer chooses whether to fulfill his existing obligation or to renegotiate the contract. If the contract is performed the period is over, otherwise the renegotiation phase begins.

Stages 3-5: there are a maximum of three renegotiation rounds, and offers are made sequentially. The first party to make an offer is the buyer, who can offer any positive integer $0 \leq K \leq 20$, to compensate the seller for allowing the buyer out of the contract. The seller can choose either to accept the offer or to make a counteroffer (between 0 and 20). When an offer or counteroffer is accepted, the contract is resolved and the parties' payoffs are determined by the accepted offer. If no agreement is reached by the end of the third renegotiation round, the original contract is enforced. In each round, subjects have 10 seconds to accept an offer, and 30 seconds to make an offer.²¹

Stage 6: the parties are informed about the outcome of the renegotiation phase, their own earnings, and the earnings of their counterpart. Subjects can always see their cumulative earnings (including their initial endowment) on the screen.²²

Table 5 presents the payoffs of the two parties in case an offer (K) is accepted by the promisee as compensation for the breach. It reveals that any compensation K between 10 and 20 generates a Pareto-improvement with respect to the outcome which would emerge with the contract performance.

²¹ If a subject does not accept or reject the offer within 10 seconds, the offer is automatically rejected, while in case no offer is made before the 30 seconds elapse, a counteroffer equal to the most profitable option for the offering party is automatically made (20 in Stage 4, and 0 in Stage 5).

²² Subjects are paid for their choices in all 18 periods.

		No Breach	0	1	Accepted compensation K						
Role					2	...	11	...	15	...	20
Gain-seeking	Promisor - Recipient	10	30	29	28	...	19	...	15	...	10
	Promisee - Dictator	10	0	1	2	...	11	...	15	...	20
Loss-avoiding	Promisor - Recipient	-20	0	-1	-2	...	-11	...	-15	...	-20
	Promisee - Dictator	10	0	1	2	...	11	...	15	...	20

Table 5: *Efficient Breach and Accepted Compensation.*

To exert stricter control over the experiment, the sequence of the events is predetermined. In each session, participants are divided into two matching groups. Participants in the first group face the “loss-avoiding” case in the first period, the “gain-seeking” case in the second period, and the no-event case in the third period. For participants in the second group the order of the events in the first two periods is reversed.²³ From period 4 onwards, the sequence of the events is randomly drawn (with no repositioning) for each of the two matching groups, and it remains the same in each session. In both sequences, each event occurs exactly six times; subjects are truthfully informed that the sequence of the events is predetermined and cannot be influenced by previous transactions. Participants, however, are not aware of the frequency with which each event would happen, nor of the sequence of the events.²⁴

At the end of the 18 periods of play, subjects are randomly matched in pairs and asked to play two dictator games (DG1 and DG2), intended to capture individual

²³ This set-up allows for a clear comparison across subjects of the effects of gain-seeking and loss-avoiding breaches on the outcome of the renegotiation. Pairs of buyers and sellers are always formed within each matching group, so the two matching groups in each session are independent of each other. In our analyses, we will consider each matching group as an independent observation.

²⁴ For more details, see the Instructions in Appendix.

dispositions towards inequality in a set-up that closely matches that of the bargaining game they previously played. In DG1, subjects have to decide how to split 30 ECUs between themselves and a randomly chosen counterpart; they can choose to give to the counterpart any number of ECUs between 10 and 30. In DG2, subjects can choose how many ECUs (between 0 and 20) to transfer from the counterpart's account to their own. As illustrated in Table 5, the payoffs of the dictator in DG1 correspond to those of the promisee in the “gain-seeking” case of our main game, while those of the recipient correspond to the payoffs of the promisor. A similar mapping exists between the payoffs in DG2 and those of the two parties in the “loss-avoiding” case of the main game. All subjects played both games in the role of the dictator. Roles of dictator and recipient were assigned at random after all subjects made their choices. Only one of the two dictator games was selected at random for payment to rule out hedging between decisions.

5.1 Theoretical Predictions

Assuming parties are rational, in the contract-breach game the parties should agree to breach the contract whenever either type of event occurs (i.e., both in case of a gain-seeking breach and loss-avoiding breach). More specifically, the promisee should accept any compensation higher than 10; hence, the promisor should offer exactly 11 under both types of events. In the dictator games, instead, dictators should keep for themselves the largest possible amount - 20 ECUs in both DG1 and DG2.

The standard theoretical predictions focus on objective payoffs and treat all cases of efficient breach alike (Posner, 2009). However, behavioral arguments suggest that people may actually treat loss-avoiding breaches differently from gain-seeking ones. There are at least two relevant strands of the literature that provide independent rationales for these behavioral differences. First, there are the economic arguments on the breach of contract (see Table 2 for a summary). As we discussed in Section 3, restrained incentives, productive and allocative inefficiency, competitive and information-forcing effects can vary across our four cases of efficient breach. In particular, our novel framework posits that loss-avoiding

breaches are more desirable than gain-seeking ones, regardless of whether buyers or sellers are the promisors. Second, insights from behavioral and experimental economics suggest that people tend to be hostile toward highly unequal distributions of wealth (i.e., inequality aversion, Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000). In the dictator game, inequality averse subjects should be willing to sacrifice some of their own welfare to reduce the difference in wealth between recipients and themselves, hence keeping less than 20. In addition, they should keep less in DG1 than in DG2, as in DG1 the distance between dictator's and recipient's payoffs is minimized when the former keeps 0, while in DG2 this happens when the dictator keeps 15. For the same reason, in the contract-breach game inequality aversion may induce promisees to accept lower offers in case of a loss-avoiding breach than in case of a gain-seeking breach.

Relying on our theoretical framework and on behavioral evidence on other-regarding preferences and taste for equality, we formulate three hypotheses:

Hypothesis 1: Promisees will enter the renegotiation phase more often in cases of loss-avoiding rather than in cases of gain-seeking breaches. There should be no differences based on the role of the breaching party.

Hypothesis 2: The two parties will reach an agreement more often in cases of loss-avoiding than in cases of gain-seeking breaches. There should be no differences based on the role of the breaching party.

Hypothesis 3: When an agreement is readied to allow efficient breach, the promisee will obtain a larger fraction of the surplus as compensation for the breach in gain-seeking cases than in loss-avoiding cases. There should be no differences based on the role of the breaching party.

5.2 Experimental Procedures

The experiment involved 158 subjects, divided between 8 sessions. It was conducted at the Bologna Laboratory for Experiments in Social Sciences (BLESS) in April 2013. Participants were mostly college students and were recruited through ORSEE (Greiner, 2004). No subjects participated in more than one session. The experiment was programmed and conducted using the z-Tree software (Fischbacher, 2007). Upon arrival, participants were randomly assigned to private cubicles to avoid eye contact; a paper copy of the instructions was distributed before each part, and instructions were read out loud to ensure common knowledge.²⁵ Before proceeding to the main part of the experiment, all subjects had to correctly answer a series of computerized control questions. No form of communication between the participants was allowed in the experiment. The average session lasted approximately 1.5 hours. All earnings in the experiment were expressed in ECUs and converted at the end of the session at the rate of €1 for every 20 ECUs. Subjects were paid privately and in cash at the end of the session; the average earning was €14.50.

5.3 Results

We provide an overview of the results in Table 6, giving the average per-transaction profits and surplus by type of breach. The data reveal that the realized (total) surplus was significantly lower than the theoretical benchmark in all cases, suggesting that subjects were not always able to reach an agreement to avoid inefficient performance of the contract when it is efficient to do so. In addition, promisees' profits tended to be larger than predicted, while profits were lower than predicted for promisors. The data on profits suggest that even when a breach was allowed, subjects split the surplus in a way that was generally more favorable to the promisee than predicted by theory.

²⁵ Instructions are available upon request to the authors.

Event	Profit		Total surplus
	Promesee	Promisor	
Inefficient breach	9.89	9.77	19.66
	[9.80, 9.99]	[9.56, 9.98]	[19.40, 19.93]
	<i>10.00</i>	<i>10.00</i>	<i>20.00</i>
Loss-avoiding	11.45	-14.11	-2.66
	[11.15, 11.75]	[-14.67, -13.57]	[-3.05, -2.28]
	<i>11.00</i>	<i>-11.00</i>	<i>0.00</i>
Gain-seeking	12.18	14.63	26.80
	[11.75, 12.60]	[14.05, 15.21]	[26.18, 27.43]
	<i>11.00</i>	<i>19.00</i>	<i>30.00</i>

Notes: The table reports in bold the average profits per period, while in squared brackets it presents the 95% confidence intervals and in italics the theoretical benchmarks.

Table 6: *Observed Profits and Theoretical Benchmarks*

We shall proceed into an analysis of the results, first considering the frequency with which subjects entered the renegotiation stage and the number of efficient breach agreements achieved (Results 1 and 2). We shall then look at the division of the surplus between the parties (Results 3 and 4). Throughout the section, we first test whether the reasons for the breach (loss-avoiding vs. gain-seeking) affect behavior, and then consider whether results differed depending on the role of the breaching party (buyer vs. seller breaches).

Do promisors always enter the renegotiation stage? Is there a difference depending on the reason for the breach?

Result 1: Promisors entered the renegotiation phase more often in case of a loss-avoiding than a gain-seeking breach.

Figure 1 reports the frequency of (forced) specific performance without renegotiation (“no-renegotiation rate”), divided by type of breach. In the case of loss-avoiding breach, nearly no promisors turned down the chance to renegotiate the contract. In line with Hypothesis 1, the figures change for gain-seeking breaches; in this case, the breaching party decides not to enter the renegotiation phase

approximately 6% of the time. The difference between loss-avoiding and gain-seeking breaches is significant at 5% level (Wilcoxon matched pairs test, $N_1=N_2=16$, all treatments pooled).²⁶ In line with our hypothesis, Result 1 suggests that the reason for the breach has an impact on the willingness of promisors to ask for a renegotiation despite the fact that (i) the breach is always efficient, (ii) the surplus generated by the breach is constant across conditions, and (iii) there is no cost associated to the renegotiation.

Figure 1: *Cases of Forced Specific Performance without Renegotiation*

As shown in Figure 1, the percentage of cases in which promisees choose to force specific performance without even attempting renegotiation is higher in the first occurrence, as compared to all occurrences, suggesting that subjects learn over

²⁶ If not otherwise specified, the unit of observation is the average at the matching group level ($N=16$). Comparisons between renegotiation rates for gain-seeking and loss-avoiding breaches are based on Wilcoxon matched pairs; comparisons between renegotiation rates (Figures 1-3) in the Buyer and Seller treatments are based on Wilcoxon-Mann Whitney tests. Results are confirmed by regressions including controls for subjects' individual characteristics (see Table A-1 in Appendix).

time that the breach can be efficient. When restricting the analysis to choices in the first occurrence of a shock, the difference in the no-renegotiation rate between loss-avoiding and gain-seeking breaches is even more pronounced (1.3% vs. 11.4%). However, a Wilcoxon signed-rank test reveals that, for both types of breaches, the difference between the vs.-renegotiation rates in the first and last occurrence is not significant ($p\text{-values} > 0.1$, $N=16$), and that even in the last occurrence the no-renegotiation rate is weakly significantly higher when the breach is to pursue a gain rather than to avoid a loss (6.3% vs. 1.2%, $p\text{-value} < 0.1$, $N_1=N_2=16$).

We point out, however, that the difference is significant only in the *Buyers* treatment (significant at the 5% level, $N_1=N_2=8$), while in the *Sellers* treatment the entrance rates are not significantly different depending on the reason for the breach.²⁷

How often are parties willing to renegotiate, and how often do they reach an efficient breach agreement? Do results differ depending on the reason for the breach and/or on the identity of the breaching party?

Result 2: The rates of successful renegotiation (for parties that accepted to renegotiate) do not depend on whether the reason for breach is to avoid a loss or to pursue a gain, nor on the identity of the breaching party.

We report in Table 7 that subjects that were willing to engage in renegotiation reached an efficient breach agreement in 73.1% of the cases. In total, efficient breach was permitted in 70.7% of the instances; 41.5% of the parties that successfully renegotiated the contract reached agreement only in the final round of

²⁷ When the breach is inefficient, the rate of renegotiation is as low as 13.6%, and when subjects enter the renegotiation phase they manage to reach an agreement only in 17.4% of the cases. As a result, the frequency of inefficient breaches is 1.7%. This confirms that the experimental subjects correctly understood the incentive structure of the situation they faced.

renegotiation. Only 22.1% reached an agreement accepting the first offer made by the promisor.

Event	Seller		Buyer	Total
Loss-avoiding breach	0.721	~	0.756	0.739
	~		~	~
Gain-seeking breach	0.669	~	0.746	0.723
Total	0.710	~	0.751	0.731

Table 7: Rates of Success, Conditional on Renegotiation

In case of a loss-avoiding (gain-seeking) breach, 73.9% (72.3%) of renegotiations were successfully concluded. As revealed by a Wilcoxon-Mann Whitney test, no significant differences emerge depending on the reason for the breach (p-value >0.1); the same is true if we consider each treatment separately.²⁸ These results suggest that once parties break the ice engaging in renegotiation, differences concerning the reasons for the breach tend to be left behind.

Further, the data indicate that, with experience, reaching an agreement on an efficient breach becomes easier. In the first occurrence of a shock, conditional on renegotiation, parties reached an agreement only 58.5% of the time; this percentage jumps to 81.0% in the final occurrence of a shock, and the difference is highly significant, according to a Wilcoxon signed-rank test (p-value<0.01, N=32). A similar pattern is observed for both types of breaches: the rate of successful renegotiation goes from 60.7% to 79.3% for gain-seeking breaches (p-value<0.05, N=16) and from 56.4% to 82.7% for loss-avoiding breaches (p-value<0.01, N=16). Thus, Hypothesis 2 is not confirmed by the data.

²⁸ The rates of success of the renegotiation phase are 72.1% (loss-avoiding breaches) vs. 69.9% (gain-seeking breaches) in the *Sellers* treatment, and 75.6% vs. 74.6% in the *Buyers* treatment.

Table 7 (horizontal comparisons) also reveals that the success rate of the renegotiation is not significantly influenced by the identity of the breaching party. Results are similar if we consider only the first occurrence.

How do the parties split the surplus of an efficient breach? Is the compensation obtained by the promisee different depending on the reason for the breach or the identity of the breaching party?

As we noted above, in all circumstances where breach is efficient, the promisee should receive compensation of 11, which means that he should earn 10% more in case of a breach than when no breach takes place. Let us define the “compensation premium” as the percentage difference between the compensation obtained by the promisee, and the payoff he would get were the contract fulfilled: $CP = (K - 10) / 10$.

Figure 2: *Compensation Premium*

Figure 2 reports the average compensation premium obtained by the promisee when the efficient breach took place. Overall, the promisee received a compensation premium of 26.1%, which is markedly higher than what the standard theory predicts. Indeed, the median accepted offer was 13 ECUs (i.e., $CP=30\%$).

Result 3(a): the compensation premium obtained by the promisee is higher for gain-seeking breaches than loss-avoiding breaches.

In line with our expectations in Hypothesis 3, we discovered significant differences in the division of the surplus, contingent upon the reason for the breach. Actual compensations were 12.0 ECUs (60% of the surplus) in loss-avoiding and 13.2 ECUs (66% of the surplus) in gain-seeking breaches. The average compensation premium was 20.2% for loss-avoiding breaches, and 32.0% for gain-seeking breaches (Figure 2), and the difference is significant at the 1% level ($N=16$).²⁹ A similar picture emerges when considering the average offer made in stages 1 to 3 of the renegotiation phase;³⁰ average offers were 11.1 ECUs for gain-seeking breaches and 11.9 ECUs for loss-avoiding breaches and the difference was highly significant. A significant disparity in compensation premiums emerged both when the breaching party was the buyer, and when it was the seller ($p\text{-value}<0.05$, $N=8$ for both comparisons). Interestingly, the difference between the two reasons to breach emerged only as the game progressed. Despite the compensation premium being larger for gain-seeking (14.8%) as compared to loss-avoiding breaches (3.7%) in the first occurrence of the shock, the difference is not significant at any conventional level.

²⁹ Comparisons between offers and compensations between loss-avoiding and gain-seeking breaches are based on Wilcoxon-Mann Whitney tests for Period 1, and on Wilcoxon matched pairs tests when considering all periods. Results are confirmed by regressions including controls for subjects' individual characteristics and for possible time trends (see Table A-2 in Appendix).

³⁰ Average offers include the cases in which renegotiation was not successful.

Result 3(b): The compensation premium obtained by the promisee for the efficient breach is not affected by the identity of the promisor.

The identity of the breaching party does not seem to have a significant impact on the average compensation premium obtained by the promisee, which is on average 27.9% in the *Seller* treatment, and 24.3% in the *Buyer* treatment ($p\text{-value} > 0.1$, $N_1 = N_2 = 16$). This result is consistent with the expectations expressed in the second part of Hypothesis 3. However, a caveat is required here: the framing of our experiment is only minimally characterized in terms of the differences between the roles of buyers and sellers, and the efficiency concerns that might emerge in real-life situations were not likely to emerge in the laboratory. Roles were indeed assigned randomly and, for instance, there was no difference between buyers and sellers with respect to the reversibility of the investments or the effect on competitiveness.

Can individual attitudes toward inequality explain observed differences in compensation premiums?

Result 4: Inequality averse subjects accept low offers more often in cases of loss-avoiding breaches than gain-seeking breaches.

Data from renegotiation suggest that higher compensation premiums are required in cases of gain-seeking breach than in cases of loss-avoiding breach. Despite efficiency gains from the breach and the range of the compensation premium being identical across the types of breaches, one should note that the degree of inequality—i.e., the distance between promisor's and promisee's earnings—associated with each compensation level K varies depending on the nature of the breach. Whereas inequality monotonically increases as the premium increases in cases of loss-avoiding breach, inequality is minimized with a 50% compensation premium (i.e., an accepted offer of 15 ECUs) in cases of gain-seeking breach (see Table 5). Consider a subject that dislikes inequality; he very well may be

willing to accept a small (perhaps even negative) premium in the loss-avoiding case so that the distance between the two parties does not become too great. The same subject might instead ask for a high premium in the gain-seeking case, as inequality does not increase (if anything, it decreases). We therefore conjecture that inequality averse subjects may accept low offers for loss-avoiding breaches, but that they will tend to be less inclined to do so for gain-seeking breaches.

To test this hypotheses, we consider individual choices in the two DGs. In DG1 (DG2), 37.3% (44.3%) of the subjects did not act as self-interested profit-maximizers and nearly all deviations from self-interest aimed to reduce the distance between dictator's and recipient's earnings. Overall, 48.1% of the subjects acted selfishly in both DGs.

To shed further light on the link between inequality and compensation premiums, let us classify promisees into two categories: inequality-tolerant and inequality-averse. To this end, we first define the inequality index, I , as the sum of the payoff differences between the two parties in DG1 and DG2. Let us call x_i the amount of money given to the recipient, and y_i the amount of money kept by the dictator, in game i . The inequality index I is: $I = |x_1 - y_1| + |x_2 - y_2|$. The average inequality index for promisees was 35 and the median value was 46. We hence classify subjects that have an index below the median as being inequality averse, and those with an index equal or above the median as being inequality tolerant.

Let us now consider whether inequality tolerant and inequality averse subjects respond differently to low offers—i.e., offers less than or equal to 10. Notice that promisees could always earn 10 from the original contract. Offers less than or equal to 10 thus correspond to negative or zero compensation premiums. Overall, 10.7% of the promisees accepted no premiums, or even a negative one, to allow for a breach of the contract. The fraction increases to 15.8% if we only consider inequality averse subjects.

Figure 3: *Acceptance Rates of Low Offers*

Figure 3 reports the acceptance rate of low offers organized by the type of subject (i.e., inequality averse or inequality tolerant) and by the type of breach. In cases of gain-seeking breach, 8.1% of inequality averse and 3.9% of inequality tolerant subjects accepted the low offer. In cases of loss-avoiding breach, the numbers more than doubled. 21.8% of inequality averse subjects accepted a negative or zero compensation premium to release the promisor from the contract. The difference in acceptance rates between gain-seeking and loss-avoiding breaches may be due to the fact that in the latter case, the promisor is substantially worse off than the promisee, and inequality increases as the compensation premium increases. Our data show that inequality averse subjects accept less generous offers in cases of loss-avoiding breach – possibly to prevent promisors from incurring high losses.

Dep var: Accept(1)/Reject(0)			
	Coefficient		SE
Gain-seeking	-0.341		(0.215)
Inequality Averse	0.374	**	(0.188)
Gain x Inequality averse	-0.252		(0.287)
Male	-0.246		(0.155)
Age	0.000		(0.017)
Experience	-0.237	**	(0.110)
Low Understanding	0.489	**	(0.200)
N.obs.	888		
Notes: Probit regression on acceptance of low offers (≤ 10), individual random effects. Symbol ** indicates significance at the 5% level.			

Table 8: *Inequality-Aversion and Low Offers*

Further support for Result 4 is provided by a probit regression (Table 8). The dependent variable has the value 1 if a low offer is accepted and 0 if it is refused. *Gain-seeking* is a dummy variable that has the value 1 in cases of gain-seeking breach and 0 in cases of loss-avoiding breach, and captures the difference in the acceptance rate of low offers depending on the reasons for the breach for inequality tolerant promisees;³¹ the (dummy) variable *Inequality Averse* has the value 1 for inequality averse and to 0 for inequality tolerant promisees; the interaction term between these two dummy variables, *Gain × Inequality averse*, is a (dummy) variable that captures the differential impact of a gain-seeking breach on the probability of accepting an offer for inequality averse subjects, as compared with inequality tolerant ones. Regression results suggest that the probability of acceptance of a low offer is smaller in cases of gain-seeking breaches than in cases of loss-avoiding breaches (i.e., the negative coefficient of the variable *Gain-seeking*), but the effect is

³¹ Cases in which no shocks occurred are not included in the regression.

significant only for inequality averse subjects.³² The positive and significant coefficient of the dummy variable *Inequality Averse* confirms the intuition that inequality concerns correlate with a greater willingness to accept low offers. Results are robust to a series of controls for gender, age, experience, and understanding.³³

6. Conclusion

We have sought to investigate several issues in this paper. First, we have tried to explain the disparity between economic analyses of efficient breach and certain moralist positions in the philosophy of contracts. We argued that a more nuanced economic understanding of the different kinds of efficient breach reconciles much of the tension with moral theories of contracts.

Our analysis divided efficient breach cases into four types, permutating two variables: (1) the motivation for promisor to breach, and (2) the identity (buyer or seller) of the promisor. We looked at these distinctions through several lenses: (a) restrained incentives, (b) information-forcing effects, (c) competitive effects, (d) allocative efficiency, (e) productive efficiency, (f) uncertainty and irreversibilities, and (g) inequality aversion. In most cases, we discovered that differing motivations (loss-avoiding vs. gain-seeking) yielded disparate analyses, suggesting that the

³² A t-test confirms that the sum of the coefficients for *Gain-seeking* and *Gain × Inequality averse* is highly significant (p-value<0.01).

³³ *Male* is a dummy variable taking value 1 for males and 0 otherwise; *Age* is the age of the subject; *Experience* takes the value 1 if the subject is unexperienced, 1 if he participated in at most 2 experiments, and 3 if he participated in 3 or more experiments. To account both for possible comprehension problems, we considered subjects that were particularly slow in answering the control questions, and those who made several mistakes. We attribute value 1 to the dummy variable *Low understanding* for all subjects who were in the last decile either according to their total answering time, or according to their total number of mistakes.

monolithic treatment of efficient breach cases as a single homogeneous type was insufficiently subtle.

Second, on the basis of our refined analysis of efficient breach, we generated several hypotheses about how lay people would react to various breach scenarios. There are several reasons why we should care how lay people react to efficient breach. To the extent that the law is meant to incentivize socially desirable behavior, policymakers must in principle first understand how individuals perceive incentives, and what expectations they form when agreeing to a contract. Moreover, it is plausible that judicial intuitions will tend to track the intuitions of ordinary people; thus, understanding how lay people react to efficient breach may well give us insight into how judges decide efficient breach cases.

Third, we tested our hypotheses experimentally, measuring the reactions of test subjects in potential efficient breach scenarios with real incentives, confirming some (indeed most) of our hypotheses. Our findings may be used to inform the choice of remedies in different cases of efficient breach. Specifically, higher measures of compensation with partial disgorgement may be appropriate given the greater level of resentment for breach evidenced by our experiment.

The asymmetric treatment of gain-seeking and loss-avoiding breaches by courts may also be viewed as consistent with our experimental findings. Specifically, by granting a specific performance remedy when the promisor is seeking to breach in the pursuit of a gain, courts grant substantially greater bargaining power to the promisee. Conversely, by granting a damage remedy when the promisor is seeking to breach to avoid a loss, the courts are granting promisors an option to breach. The savings obtained by avoiding performance in this case are fully captured by the breaching promisor. Hence, the choice of remedy in the two cases generates a different distribution of the surplus. The entire surplus is captured by the promisor in the case of inadvertent loss-avoiding breaches, and it is shared between the parties in the case of intentional gain-seeking breaches. Interestingly, the resulting allocation of the surplus corresponds to what the parties would do if they engaged in post-contract negotiations for obtaining a right to breach, establishing a correlation between the legal outcomes determined by judges and lay intuition.

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Appendix A: Tables

	<i>Dep. Var.: No renegotiation rate</i>							
	Model (1)		Model (2)		Model (3)		Model (4)	
Gain-seeking	1.276	***	1.537	***	1.022	**	1.995	***
	(0.294)		(0.319)		(0.463)		(0.490)	
Occurrence			-0.664	***	-1.267	**	-0.413	
			(0.248)		(0.525)		(0.311)	
Occurrence x Gain			0.029	**	0.055	**	0.019	
			(0.012)		(0.026)		(0.015)	
Male			-1.273	***	-0.575		-1.736	**
			(0.470)		(0.486)		(0.763)	
Age			0.045		0.053	**	0.067	
			(0.036)		(0.022)		(0.132)	
Experience			0.473		0.141		0.789	
			(0.353)		(0.400)		(0.535)	
Low Understanding			1.572	***	1.379	***	1.689	**
			(0.486)		(0.507)		(0.725)	
N.obs.	948		948		456		492	

Notes: Probit regression on No Entrance with individual random effects. Symbols \$***\$, \$**\$, and \$*\$ indicate significance at the 1%, 5% and 10% level, respectively. Occurrence indicates the number of times a given event has occurred, and ranges from 1 to 6. Male is a dummy variable taking value 1 for males and 0 otherwise; Age is the age of the subject; Experience takes value 1 if the subject is inexperienced, 1 if he participated in at most 2 experiments, and 3 if he participated in 3 or more experiments. We attribute value 1 to the dummy variable Low understanding for all subjects who were in the last decile either according to their total answering time, or according to their total number of mistakes in the control questions.

Table A-1: *Treatment effect on no-entrance rate*

	Dep. Var.: Compensation Premium							
	Model (1)		Model (2)		Model (3)		Model (4)	
Gain-seeking	11.544	***	10.576	***	10.745	***	12.58	***
	(2.004)		(2.812)		(2.926)		(2.727)	
Buyer			-1.327					
			(3.460)					
Buyer x Gain			2.018					
			(3.996)					
Male			7.459	**	7.994	**	5.433	
			(2.905)		(3.753)		(4.249)	
Age			-0.099		-0.237		-0.105	
			(0.333)		(0.758)		(0.380)	
Experience			3.85	*	0.07		6.309	**
			(2.177)		(3.154)		(2.891)	
Low Understanding			-19.446	***	-31.726	***	-13.364	***
			(3.734)		(5.906)		(4.650)	
N.obs.	665		665		334		331	
R-squared	0.043		0.155		0.166		0.166	

Notes: Probit regression on compensation premium with individual random effects. Symbols \$***\$, \$**\$, and \$*\$ indicate significance at the 1%, 5% and 10% level, respectively. Test on joint significance of Buyer and Buyers x Gains in Model (2) p=0.874. Male is a dummy variable taking value 1 for males and 0 otherwise; Age is the age of the subject; Experience takes value 1 if the subject is inexperienced, 1 if he participated in at most 2 experiments, and 3 if he participated in 3 or more experiments. We attribute value 1 to the dummy variable Low understanding for all subjects who were in the last decile either according to their total answering time, or according to their total number of mistakes in the control questions.

Table A-2: *Treatment effect on compensation premium*

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