Information and the Scope of Liability for Breach of Contract: The Rule of *Hadley v. Baxendale*

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1. Introduction

A promisor will often lack knowledge of the value of contract performance unless the promisee communicates it to him. This was the situation in the classic nineteenth-century English case of *Hadley v. Baxendale*.[1] In that case Hadley, a mill owner, engaged Baxendale, a carrier, to transport a broken engine shaft to another city by a certain date. The value to Hadley of performance was much greater than ordinary because the broken shaft was to serve as a model for a new one without which his mill could not operate. But Hadley did not tell this to Baxendale, and he therefore had no reason to take special precautions to ensure timely delivery. As it happened, Baxendale failed to convey the shaft by the specified date, delaying resumption of the mill's operation.

When Hadley sued for damages, the court decided that Baxendale was not liable for Hadley's lost profits because they were the result of unusual circum-

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1. 9Ex. 341, 156 Eng. Rep. 145 (1854).

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stances that could not be reasonably supposed to have been contemplated by Baxendale. For Baxendale to be responsible for Hadley's lost profits, the court said, Hadley had to have communicated his particular circumstances to Baxendale at the time that the contract was made. This limitation on liability for breach of contract to the ordinary level of losses, unless the promisee had informed the promisor otherwise, has been accepted ever since in the common law world.[2]

We attempt in the present article to analyze systematically the effects and the social desirability of the foregoing limited liability rule, as opposed to the rule of unlimited liability for breach. To this end, we study a stylized model with buyers and sellers. A seller can reduce the likelihood of breach by taking precautions, but these will involve additional expense or effort. There are two types of buyers: a minority who place a high value on performance, and the majority who place a low value on it.[3] Whether a buyer places a high or low valuation on performance is not observable to sellers. Buyers, however, may choose to identify themselves—that is, make representations to the seller about the value they place on performance. (As will be discussed, for a buyer to identify himself as having low valuation will imply that the seller's liability would be limited to such valuation.) The addition of such buyer representations to the contracting process involves transaction costs, which we will call "communication costs."

Accordingly, two types of decision are made in the model: buyers' decisions about communication of their valuations; and sellers' decisions about the level of precautions to reduce the likelihood of nonperformance. We identify the decisions that are socially optimal for buyers and sellers to make, and then compare such decisions to those that the parties in fact make under the limited and unlimited liability rules for breach.

The gist of our conclusions from the model is as follows. First, if it is socially desirable that sellers possess information enabling them to distinguish between buyers' types, then high valuation buyers alone should communicate their valuation to sellers; buyers who do not communicate will then be known by sellers to be of the low valuation type. This way of transferring information

2. See, for example, Calamari and Perillo (§14–5) and Farnsworth (§12.14); and see also Corbin (§1007) and Williston (§1357). Such limitation has also been the rule in France. See Treitel (§§82–90) and von Mehren (§113). German law, however, proceeds from the assumption that liability for losses is complete. See Treitel (§82,§§91–92) and von Mehren (§113). These authors explain that German law tends to reject foreseeability as a limitation on liability. But liability may be limited by the fault of the injured party, and this may take into account his failure to communicate with the other party; see Forrester et al. (§254). Nevertheless, we are told by those familiar with German law that limitation of liability due to the injured party's failure to communicate his situation is less likely than under the French and common law systems.

3. Although our main interest is in the assumption that high valuation buyers are in the minority, we discuss also the case in which they are in the majority in note 22. We should observe as well that the assumption that high valuation buyers are in the minority may be regarded as an approximation to the truth: In reality, the values of performance to buyers will range along a continuum, and we may always choose an upper region of this continuum sufficiently high that the buyers whose valuations fall within it are a minority. See Section 4.

minimizes transaction costs. The two other possible ways—for all buyers to communicate their valuations, or for low valuation buyers alone to do so—are wasteful, for they involve greater communication costs. Furthermore, it is socially desirable that sellers obtain information enabling them to distinguish between buyers' types if and only if the resulting social benefits—which inhere in sellers' taking different precautions for low and high valuation buyers—exceed the communication costs incurred.

Second, if transfer of information about buyers' types is socially desirable, then the limited liability rule of *Hadley* will result in socially optimal behavior. Under the rule, high valuation buyers will find it beneficial to identify themselves to secure full protection against breach even though they will have to pay a higher contract price. And, informed of a buyer's high valuation, sellers will take proper measures to increase the likelihood of performance.

Third, if transfer of information about buyers' types is socially desirable, then the unlimited liability rule will produce behavior that differs from the socially optimal. Under the unlimited liability rule, high valuation buyers will have no reason to identify themselves (indeed, doing so would be costly, as it would result in sellers' raising the contract price). Thus, the rule may lead to a situation in which sellers are unable to determine buyers' types and consequently do not take added precautions for high valuation buyers. Alternatively, the rule may lead *low* valuation buyers to identify themselves in order to enjoy a reduction in the price. In the latter case, sellers will have the information necessary to distinguish between buyers' types, but the costs of transferring the information will not be minimized.

Fourth, if transfer of information about buyers' types is not desirable—because communication costs are higher than the benefits from differential precautions—then neither the limited liability rule nor the unlimited liability rule will necessarily lead to socially optimal behavior. The reasons for this divergence from social optimality will be explained in the course of the analysis.

Legal commentators have generally approved the limited liability rule of *Hadley v. Baxendale*. Their endorsement is grounded for the most part in a perception that it is not fair for a person to be saddled unnecessarily with an unforeseen burden, in the form of unusually high liability for breach.[4] In recent, economically oriented writing on the rule, the point has been stressed that high valuation buyers may be led to communicate their valuations, and that this will lead sellers to take greater precautions.[5] The contribution of our article is the development of a formal model in which socially desirable behavior of buyers and sellers and their behavior under the two alternative liability rules are fully characterized. This analysis allows us to determine the

4. See, for example, Williston (§1357).

5. This observation was apparently first made by Barton (295) and Posner (1972:60; 1986:114). See also Bishop (254), Danzig (227–84), Perloff, Ayres and Gertner (101–104, 108–112), and Johnston.

conditions under which each of the rules induces, or fails to induce, socially desirable behavior, and the conditions under which each of the rules is superior to the other.[6]

In Section 2, an informal analysis of the model is presented, and, in Section 3, the formal analysis is supplied. In Section 4, various issues of relevance to our subject but not examined in the model are discussed: the possibility that sellers may commit breach deliberately (rather than fail to perform owing to inadequacy of precaution, as in *Hadley v. Baxendale*); buyers' opportunities to mitigate losses from breach; sellers' ignorance of the existence of high valuation buyers; risk aversion; reasons for sellers to place absolute limitations on liability; distributional considerations; and the fact that the valuations of buyers will generally lie on a continuum.

Finally, we conclude with an assessment of the practical importance of the rule of *Hadley v. Baxendale* in Section 5. Our judgment will be that the rule is not likely to be of much significance in situations in which a contract is elaborate and dickered over, but may well be of importance in a vast number of informal, routinized transactions.

2. Informal Analysis

2.1 Socially Desirable Behavior

The measure of social welfare is taken to be the sum of buyers' expected values[7] from contract performance, less sellers' costs of precautions,[8] and less parties' costs of communication.

We first ascertain the *socially optimal level of a seller's precautions, conditional on his knowledge of a buyer's valuation.* If a seller *knows* a buyer's valuation, then the optimal level of precautions maximizes the expected value of performance minus the costs of precautions, where the expected value of performance equals its probability multiplied by its known value. Let us call this optimal level of precautions for low valuation buyers the "low" level, and the optimal level of precautions for high valuation buyers the "high" level.[9] If

6. Our model was first developed in an earlier version of our article, which was presented at the University of Pennsylvania Law School in 1983. Ayres and Gertner (108–112) later independently sketched a model of the subject. But, importantly, they did not identify socially optimal behavior of buyers and sellers and thus did not contrast it with behavior under the two alternative liability rules; and they did not identify the conditions under which each of the rules is superior to the other.

7. "Expected value" means probability-discounted value. If a seller will obtain performance worth 100 to him with probability 50 percent, the expected value of performance is 50. The expected value of performance may be interpreted as the average value that buyers would obtain if they repeatedly made contracts of the same type.

8. For simplicity, we speak only of costs of precautions, even though sellers will bear other expenses in providing a service or producing a good.

9. For example, suppose that there are three levels of precautions: low, involving an expenditure of $20 and producing a 70 percent probability of performance; intermediate, requiring an expenditure of $30 and leading to an 80 percent probability of performance; and high, necessitat-

a seller *does not know* a buyer's valuation, the optimal level of precautions maximizes the expected value of performance minus the costs of precautions, but where the expected value of performance now equals its probability multiplied by the seller's estimated average value of performance.[10] This latter optimal level of precautions falls between the low and high optimal levels, and thus will be called "intermediate."[11]

We next determine the *social value of communication of information.* In essence, this is the value of the provision of the two individually optimal levels of precautions for the two types of buyers rather than the intermediate level for both. Specifically, the social value of communication of information is the difference between the following two quantities: (i) the expected value of performance minus costs of precautions if sellers know the identity of buyers, in which case they take the low level of precautions for low valuation buyers and the high level of precautions for high valuation buyers; and (ii) the expected value of performance minus costs of precautions if sellers receive no information, in which case they take the intermediate level of precautions for both types of buyers.[12]

We then observe that the *minimum cost of communication of information* is the cost of the minority of buyers *alone* identifying themselves. It is not necessary for both types of buyers to communicate for sellers to possess complete information about buyers' valuations. If only one type communi-

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ing an expenditure of \$50 and yielding a 90 percent probability of performance. Suppose also that the low valuation placed on performance is \$50 and that the high valuation is \$500. Then for low valuation buyers, low precautions are best: if precautions are low, social welfare is 70% × \$50 − \$20 = \$15; if precautions are intermediate, welfare is 80% × \$50 − \$30 = \$10; and if precautions are high, welfare is 90% × \$50 − \$50 = −\$5; so low precautions are optimal. On the other hand, for high valuation buyers, high precautions are best: if precautions are low, welfare is 70% × \$500 − \$20 = \$330; if precautions are intermediate, welfare is \$80% × \$500 − \$30 = \$370; and if precautions are high, welfare is 90% × \$500 − \$50 = \$400.

10. That is, the fraction of low valuation buyers multiplied by the low valuation, plus the fraction of high valuation buyers multiplied by the high valuation. Thus, if in our example 80 percent of buyers are low valuation buyers, the average value would be 80% × \$50 + 20% × \$500, or \$140.

11. In our example, if precautions are low, welfare per buyer is 70% × \$140 − \$20 = \$78; if precautions are intermediate, welfare is 80% × \$140 − \$30 = \$82; and if precautions are high, welfare is 90% × \$140 − \$50 = \$76; so the intermediate level of precaution is optimal. (It may occur to the reader that, in our example, we had to select numbers with some care, so that it would turn out that the intermediate level of precautions would be optimal. However, the reader should not be disturbed about this: for in the formal version of our model the level of precautions is continuously variable, and the optimal level of precautions is always intermediate—that is, somewhere between the level that is best for low valuation buyers and the level that is best for high valuation buyers.)

12. In our example, the value of communication of information is calculated as follows. If there is communication, then social welfare per buyer is 80% × \$15 + 20% × \$400 = \$92, since \$20 is the level of precautions for low valuation buyers and \$50 is the level of precautions for high valuation buyers (see note 9, *supra*). If there is no communication, then welfare per buyer is \$82, since \$30 is the level of precautions taken for all buyers (see note 11, *supra*). Hence, the social value of communication is \$92 − \$82 or \$10 per buyer.

cates, sellers will know that the silent buyers must be of the second type. Moreover, it is best if the type of buyer that is fewest in number communicates, namely, the high valuation buyers, because that results in lower total communication costs.[13]

Thus, socially optimal behavior can be simply described. It is socially desirable for there to be communication, and solely by the high valuation buyers, if and only if the social value of information exceeds the minimized cost of communication.[14] When that is so, sellers should take the low level of precautions for the low valuation buyers and the high level of precautions for the high valuation buyers. If, however, communication is not optimal, sellers should take the intermediate level of precautions for all buyers.[15]

2.2 Behavior under the Two Rules of Contract Law

We suppose that the price charged to a buyer will equal a seller's costs, for we assume that sellers are in competition with each other.[16] A seller's costs equal the sum of his costs of precautions, his expected liability payments under the relevant rule of contract law, and his costs of communication.

2.2.1 Limited Liability Rule.

Under the limited liability rule, a low valuation buyer will be compensated for his losses in the event of breach, but a high valuation buyer will obtain only the low valuation in that event unless he identified himself as having high valuation when entering the contract.

What will happen under this rule? Clearly, low valuation buyers will never choose to communicate, because they will obtain the same amount in the event of breach whether or not they communicate. High valuation buyers, on the other hand, may wish to communicate. If a high valuation buyer does identify himself, he will receive more if there is a breach but he will also be charged more. The latter is true not only because the seller will have to pay more if he fails to perform, but also because he will be induced to increase his level of precautions to the high level, as well as to bear communication costs. If the communication costs borne by the buyer and the seller are sufficiently

13. For instance, if \$3 is the cost of communication for a buyer, then if only the 20 percent of high valuation buyers communicate, the average communication cost per buyer in the population would be 20% × \$3 or \$.60.

14. In our example, if \$3 is the cost of communication per person, then \$.60 would be the minimized cost, when just the high valuation buyers communicate, and \$10 is the social value of communication. Therefore, it is socially optimal for there to be communication by high valuation buyers.

15. In our example, if communication cost per person were very high, over \$50, minimized communication costs per person, when just high valuation buyers communicate, would exceed \$10, so that communication would not be socially worthwhile.

16. This assumption is helpful because it makes the connection between price and costs as simple as possible. Were we to analyze different assumptions, such as that the market were monopolistic, price would still reflect costs, but in a more complicated way. For an analysis of the case in which the market is not competitive, see Johnston.

low, the high valuation buyer will decide to communicate; otherwise he will not.[17]

It follows that there are two possible equilibrium outcomes: a *no-communication equilibrium,* and a *communication equilibrium.* In the former, because sellers are liable only for the low value if there is a breach, their level of precautions will be low. In the latter equilibrium, sellers choose the low level of precautions for the buyers who do not communicate (the low valuation buyers); and they choose the high level of precautions for the buyers who do communicate (the high valuation buyers).

The relationship between these types of outcomes and social optimality can be shown to be as follows. If it is socially optimal for sellers to learn about buyers' types,[18] then the equilibrium under the limited liability rule will be the communication equilibrium, and the socially optimal outcome will result. In the communication equilibrium, only the high valuation buyers communicate, which is optimal, and the levels of precautions for high and low valuation buyers are high and low, respectively.

Exactly why the high valuation buyers will choose to communicate whenever that is socially optimal is a somewhat subtle point that is best appreciated from the formal analysis. It should be added that high valuation buyers may choose to communicate even if it is *not* optimal, which leads us to the next result.

If it is not socially optimal for sellers to learn about buyers' types, then the equilibrium under the limited liability rule may be a communication equilibrium or a no-communication equilibrium. If the equilibrium involves communication, it obviously is not socially optimal. And even if the equilibrium is a no-communication equilibrium, it will not be socially optimal: as we explained, in a no-communication equilibrium, sellers will choose the low level of precautions, because their liability for breach will be low. Yet the socially optimal level of precautions if there is no communication is the intermediate level. Thus, the level of precautions under the limited liability rule will be too low.

2.2.2 Unlimited Liability Rule. Under the unlimited liability rule, both types of buyers will be compensated for their losses in the event of breach, whether

17. In our numerical example, suppose that the buyer's cost of communicating is \$1 and that the seller's cost of communicating is \$2. The price charged to silent buyers would be \$35, for \$20 is the expenditures on precautions, and 30% × \$50 or \$15 is the expected liability for nonperformance. The price charged to a high valuation buyer who identifies himself would be, by similar reasoning, \$50 + 10% × \$500 + \$2, or \$102. Now if a high valuation buyer is silent, and therefore receives only \$50 in the event of nonperformance, he will obtain expected utility of 70% × \$500 + 30% × \$50 − \$35, or \$330. If, on the other hand, he identifies himself, he will obtain expected utility of 90% × \$500 + 10% × \$500 − \$102 − \$1 or \$397. Thus, a high valuation buyer will choose to identify himself, given the low costs of communication assumed in our example.

18. This is the case in our numerical example.

or not they communicate. The situation under this rule is in many respects the mirror image of that under the limited liability rule.

It is evident that under the unlimited liability rule, high valuation buyers will never communicate. They will obtain the same amount in the event of breach whether or not they communicate, and communicating their valuation not only involves communication costs but also could result in sellers charging a higher price.

Low valuation buyers, though, may decide to identify themselves. If a low valuation buyer makes a representation about his low valuation, the seller will know that his liability costs will be lower and, because of this, will choose a lower level of precautions and charge a lower price. A low valuation buyer will communicate if this price reduction would outweigh the communication costs he would bear.[19]

Again, therefore, both a no-communication equilibrium and a communication equilibrium are possible. In the no-communication equilibrium, because sellers are liable for whatever the buyer's valuation turns out to be, sellers will decide to take the intermediate level of precautions. In the communication equilibrium, sellers will choose the low level of precautions for the low valuation buyers (who will identify themselves) and the high level of precautions for the other buyers whom sellers will know have high valuations.[20]

The relationship between the equilibrium outcomes and social optimality is as follows. First, if communication is socially optimal, then the equilibrium may either be a no-communication or a communication equilibrium, but in neither case will the outcome be socially optimal. If there is no communication, plainly the outcome is not socially optimal. If there is communication, then the outcome is not socially optimal because the majority of buyers communicate; the costs of communication are therefore higher than necessary. (The levels of precautions, however, are optimal.)

Second, if communication is not optimal, then again both a communication equilibrium and a no-communication equilibrium are possible. If the equilibrium involves communication, it cannot be optimal. If the equilibrium is a no-communication equilibrium, it is socially optimal. In particular, sellers' levels of precaution will be intermediate, as was mentioned, which is socially optimal when there is no communication.

2.2.3 Comparison of the Rules. If communication is socially optimal, the limited liability rule is socially superior to the unlimited liability rule. In this

19. In our numerical example, suppose that if low valuation buyers communicate and identify themselves, they are charged the costs sellers bear, \$20 + 30% × \$50 + \$2, or \$37. Suppose that if they do not identify themselves, they are charged a higher price than \$38. Then they will identify themselves.

20. Specifically, in our numerical example, suppose that silent buyers are charged what must be charged if they are high valuation buyers, namely, \$50 + 10% × \$500, or \$100. And suppose that low valuation buyers who identify themselves are charged \$37. Then, as observed in the previous note, low valuation buyers will identify themselves, and high valuation buyers will be the silent buyers.

case, as we stated, the equilibrium under the limited liability rule will definitely be the socially optimal one: a communication equilibrium will occur, with high valuation buyers identifying themselves. By contrast, under the unlimited liability rule, the outcome will not be socially optimal. Even if there is a communication equilibrium, communication will be more expensive than necessary, because the majority of buyers (those with a low valuation) will communicate rather than the minority of buyers (those with a high valuation).[21]

If communication is not socially optimal, then either the limited liability rule or the unlimited liability rule may be the superior. Specifically, the unlimited liability rule is preferable if it would produce a no-communication equilibrium. (This no-communication equilibrium would lead to optimal behavior because sellers will use the intermediate level of precautions.) But the unlimited liability rule would be inferior if it would produce a communication equilibrium in which low valuation buyers identify themselves. (Because of the excessive transaction costs produced by the unlimited liability rule, it will turn out to be inferior to the limited liability rule even though the latter does not induce optimal behavior.)

3. The Model

3.1 Assumptions

Risk-neutral buyers make contracts with identical risk-neutral sellers for the production of a good or the provision of a service. The buyers are of two types, distinguished by whether they place a low or a high valuation on performance of the contract. Specifically, let

l = value of performance to low valuation buyers, $l > 0$;
h = value of performance to high valuation buyers, $h > l$;
α = fraction of high valuation buyers, $0 < \alpha < .5$.[22]

Buyers know their own valuations. Sellers know that there is a fraction α of buyers with valuation h and a fraction $1 - \alpha$ with valuation l, but a seller cannot observe a buyer's valuation when entering into a contract.

When a contract is made, a buyer may make either the statement "I am an l" or "I am an h." Adding the making of such statements to the contracting

21. In our numerical example, there was, as was optimal, communication in equilibrium under both rules. The communication cost per person under the limited liability rule was \$.60. The communication cost under the unlimited liability rule was 80% × \$3 or \$2.40. So the advantage of the limited liability rule was \$1.80 per person.

22. Although our concern is with the case where $\alpha < .5$, we note that Propositions 2 and 4 do not depend on α, and that the other Propositions change in straightforward ways if $\alpha \geq .5$. For example, when $\alpha > .5$, if communication is socially desirable, it is best for the low valuation buyers to identify themselves. Thus, in that instance, the limited liability rule never results in the socially optimal outcome, but the unlimited liability rule may. A previous version of our article, available on request, analyzes fully the case when $\alpha \geq .5$.

$$x_l^* < x_{lh}^* < x_h^*. \tag{7}$$

The explanation for the inequality is, of course, that the level of precautions should reflect the presence of both types of buyers.

Turning now to question (i), we will compute the social value of sellers having information about buyers' valuations and the social cost of their obtaining this information through communication. The social value of sellers having information is the increase in social welfare (exclusive of communication costs) when sellers choose different effort levels x_l^* and x_h^* for the two types of buyers, rather than the intermediate, common level x_{lh}^*. Denoting the social value of information by I, we have

$$\begin{aligned} I &= (1-\alpha)[p(x_l^*)l - x_l^*] + \alpha[p(x_h^*)h - x_h^*] \\ &\quad - \{p(x_{lh}^*)[(1-\alpha)l + \alpha h] - x_{lh}^*\} \\ &= (1-\alpha)\{[p(x_l^*)l - x_l^*] - [p(x_{lh}^*)l - x_{lh}^*]\} \\ &\quad + \alpha\{[p(x_h^*)h - x_h^*] - [p(x_{lh}^*)h - x_{lh}^*]\} > 0. \end{aligned} \tag{8}$$

Note that the second expression for I shows that the value of information derives from an improvement in the choice of precautions for each of the two types of buyers. Specifically, each of the terms in braces in the second expression is positive, because x_l^* (rather than x_{lh}^*) solves (2) and x_h^* (rather than x_{lh}^*) solves (3).

Three regimes of communication will enable sellers to distinguish between buyers: where both types of buyers communicate; where only low valuation buyers communicate—in which case silent buyers are known to be high valuation buyers; or where only high valuation buyers communicate—in which case silent buyers are known to be low valuation buyers. The least cost regime is that in which only high valuation buyers communicate, because they are in the minority. Thus, the minimum social cost of providing sellers with information enabling them to distinguish the two types of buyers is αk.

Hence, it is socially optimal for there to be communication if and only if

$$\alpha k < I. \tag{9}$$

Dividing by α and using (8), condition (9) is equivalent to

$$\begin{aligned} k < {} & \{[p(x_h^*)h - x_h^*] - [p(x_{lh}^*)h - x^*{}_{lh}]\} \\ & + [(1-\alpha)/\alpha]\{[p(x_l^*)l - x_l^*] - [p(x_{lh}^*)l - x_{lh}^*]\}. \end{aligned} \tag{10}$$

The interpretation of (10) is that a representative high valuation buyer should communicate if the cost k of communication to him and the seller is less than the gain in "surplus" to him (the first term in braces) plus the gain in surplus per low valuation buyer (the second term in braces), multiplied by the number of low valuation buyers $[(1-\alpha)/\alpha]$ who so benefit from his communication (remember that when high valuation buyers communicate, low valuation buyers are implicitly identified as well).

3.2 Socially Optimal Behavior

To identify optimal behavior of buyers and sellers, it is necessary to answer two questions: (i) When should buyers communicate with sellers? (ii) Given sellers' information, what should their levels of precautions be?

We will begin with question (ii) because it must be answered in order to address question (i). Sellers will either have information allowing them to distinguish between the two types of buyers—this will be so if buyers communicate, as will be discussed—or they will not. If sellers are able to distinguish between buyers, then sellers can select x_l and x_h independently. Thus, the choice of these variables that maximizes social welfare is given by

$$\max_{x_l, x_h} (1 - \alpha)[p(x_l)l - x_l] + \alpha[p(x_h)h - x_h], \tag{1}$$

because communication costs are taken as fixed. Equivalently, x_l and x_h are determined by

$$\max_{x_l} p(x_l)l - x_l \tag{2}$$

and

$$\max_{x_h} p(x_h)h - x_h. \tag{3}$$

Denote the solutions to (2) and (3) by x_l^* and x_h^*, respectively, and observe that[25]

$$x_l^* < x_h^*, \tag{4}$$

and that

$$p(x_l^*)l - x_l^* < p(x_h^*)h - x_h^*. \tag{5}$$

If sellers are unable to distinguish between the two types of buyers, sellers must choose a common level of precautions, to be called x_{lh}; the best such level is determined by

$$\max_{x_{lh}} p(x_{lh})[(1 - \alpha)l + \alpha h] - x_{lh}. \tag{6}$$

Denote the solution to (6) by x_{lh}^*, and notice that[26]

25. Inequality (4) follows because the x maximizing the function $p(x)v - x$ is increasing in v. To see this, note that this x satisfies $p'(x)v = 1$. Implicitly differentiating with respect to v, we obtain $x'(v) = -p'(x)/p''(x)v > 0$. Inequality (5) follows because the derivative of $p(x(v))v - x(v)$ with respect to v is $p(x(v)) > 0$.

26. Inequality (7) follows from $l < (1 - \alpha)l + \alpha h < h$ and from the fact that $x(v)$ is increasing in v; see note 25.

$$k < [p(x_h^*)h - x_h^*] - [p(x_l^*)h - x_l^*]. \tag{11}$$

(iii) *Buyers' valuations h and l.* It is straightforward to show that an increase in h or a decrease in l raises the social value of information, I, and thus makes the desirability of communication more likely.[30]

3.3 Contracts and Prices

A contract between a seller and a buyer is assumed to specify the promised performance (the features of the promised good or service) and the price, to be paid by the buyer at the outset.

In addition, as already noted, when a contract is made, a buyer may make a statement about his type: "I am an l" or "I am an h"; in such a case, the statement will be part of the contract. The implications of these statements (or lack thereof) for sellers' liability in the event of breach will be described when the two alternative liability rules are defined. We do *not* assume that buyers' statements about their type must be true. Rather, we will show that, under the two considered rules, buyers will never choose to make false statements.

In the event of a seller's nonperformance (the terms "nonperformance" and "breach" will be used synonymously), we assume that a buyer can demonstrate the value of his loss to the court. Whether the seller will be liable for the full loss from breach, however, will depend on the liability rule that governs and the buyer's statement, if any.

Under the *limited liability rule,* a seller's liability is l unless the buyer has high valuation and states that he is an h when entering into the contract, in which case the seller's liability for breach will be h. In essence, a high valuation buyer's decision to identify himself as having a high valuation is a decision to opt out of a contract with a ceiling of l on damages in favor of full liability.

Under the *unlimited liability rule,* a seller's liability to a low valuation buyer is l and his liability to a high valuation buyer is h if the buyer does not identity himself; but if the buyer says that he is an l, the seller's liability will be l (and if the buyer says that he is an h, the seller's liability will be h). Thus, a buyer who identifies himself as having low valuation opts out of unlimited liability in favor of a ceiling of l on damages.

The sequence of decisions by the parties is as follows. Sellers choose strategies: a seller announces the price that he will charge as a function of the statement, if any, that a buyer makes. Buyers then approach sellers and, given the sellers' strategies, decide whether to make statements.

The market is assumed to be in a state of (Nash) equilibrium and to be

30. We add an observation concerning socially desirable behavior in the case in which the cost of communication depends on the buyer's valuation (see note 23 *supra*). Let k_h be the cost of communication (for a buyer and a seller) if a buyer's valuation is high, and k_l be the cost of communication if a buyer's valuation is low. Then it is clear that the minimum cost of communication is $\min(\alpha k_h, (1 - \alpha)k_l)$ and that communication is socially desirable if this minimum is less than the value of information I. In particular, if $\alpha k_h < (1 - \alpha)k_l$, it is optimal for high valuation buyers alone to communicate when communication is socially desirable.

Let us now summarize our conclusions concerning the socially optimal behavior of buyers and sellers.

Proposition 1. (a) If the minimum social cost of provision of information about buyers' types is less than its value—if (10) is satisfied—then it is socially optimal for only the high valuation buyers, who are in the minority, to identify themselves; and for sellers to select the high level of precautions x_h^* for high valuation buyers and the low level of precautions x_l^* for low valuation buyers.

(b) If, however, the inequality in (10) is reversed, then it is not socially optimal for buyers of either type to identify themselves. In this case, it is optimal for sellers to choose the intermediate level of precautions x_{lh}^* for all buyers.[27]

Remarks. A number of observations can be made about the effects of changes in parameters on whether communication is socially desirable.

(i) *The size of communication costs k.* It is clear from (10) that, given the variables other than k, communication is socially desirable for all k below the threshold I/α, and that communication is socially undesirable for all k above this threshold.

(ii) *The fraction of buyers in the minority.* If communication is socially desirable for some α', it is desirable also for all $\alpha < \alpha'$.[28] Moreover, an α' such that communication is desirable exists if and only if the following inequality holds:[29]

27. Of course, if (10) holds with equality, it does not matter whether there is no communication or communication by low valuation buyers. We omit mention of the case of equality in (10) and elsewhere below in order to simplify the statement of propositions.

28. Write $I = I(\alpha)$ to show the dependence of I on α and assume that $I(\alpha)$ is concave in α, so that $I(\alpha) - \alpha k$ is also concave in α. Then if communication is optimal for some α', $I(\alpha') - \alpha' k > 0$. But $I(0) - 0k = I(0) = 0$. Since, then, the function $I(\alpha) - \alpha k$ is 0 at $\alpha = 0$, positive at α', and is assumed to be concave, it must be positive in the interval $(0,\alpha']$.

Thus, it suffices to demonstrate that $I(\alpha)$ is indeed concave. To do this, we will show that $I''(\alpha) < 0$. Consider the first expression for I in (8). The first two terms are linear in α, so their second derivative with respect to α is 0. Hence, we need only determine the second derivative of the last term, $-\{(p(x_{lh}^*)[(1-\alpha)l + \alpha h] - x_{lh}^*\}$, with respect to α. The first derivative of this term is $-\{x_{lh}^{*\prime}(\alpha)\{p'(x_{lh}^*)[(1-\alpha)l + \alpha h] - 1\} + (h-l)p(x_{lh}^*)\}$; but making use of the first-order condition from (6), this equals just $-(h-l)p(x_{lh}^*)$. The derivative of this with respect to α is $-(h-l)p'(x_{lh}^*) \times x_{lh}^{*\prime}(\alpha)$, which is negative because the first-order condition for (6) implies that $x_{lh}^{*\prime}(\alpha)$ is positive.

29. To prove this, refer to the second expression in (8) for I and observe that

$$
\begin{aligned}
I'(\alpha) = &-\{[p(x_l^*)l - x_l^*] - [p(x_{lh}^*)l - x_{lh}^*]\} \\
&+ \{[p(x_h^*)h - x_h^*] - [p(x_{lh}^*)h - x_{lh}^*]\} \\
&- x_{lh}^{*\prime}(\alpha)\{p'(x_{lh}^*)[(1-\alpha)l + \alpha h] - 1\}.
\end{aligned}
$$

Using this expression, the fact that $x_{lh}^* = x_l^*$ at $\alpha = 0$, and the first-order condition $p'(x_l^*)l - 1 = 0$, we obtain $I'(0) = [p(x_h^*)h - x_h^*] - [p(x_l^*)h - x_l^*]$.

Hence, (11) is equivalent to $k < I'(0)$. But since αk and I are both 0 at $\alpha = 0$, $k < I'(0)$ implies that $\alpha k < I(\alpha)$ for all positive α sufficiently small, so communication is desirable for such α. Conversely, if (11) does not hold, then $k > I'(0)$, meaning that $\alpha k > I(\alpha)$ for all positive α since

for breach, but he would have to bear communication costs (and the seller would increase price to reflect the communication costs the seller bears). Hence, low valuation buyers will not identify themselves.

Second, a high valuation buyer may be able to improve his position by identifying himself. If he does communicate, he will bear the communication cost k_b, will pay a price of $c_h + k_s$, and will obtain performance or its equivalent, a liability payment of h; thus, his expected utility will be $h - k_b - (c_h + k_s) = h - c_h - k$. If he does not communicate, he will pay a price of c_l and, if he does not obtain performance, will receive a liability payment of only l. Hence, his expected utility will be $p(x_l^*)h + (1 - p(x_l^*))l - c_l$. Thus, he will decide to communicate if the first inequality in (14) holds, and substitution establishes the equality in (14). Conversely, if the inequality in (14) is reversed, a high valuation buyer will decide to be silent.

Note that the second expression in (14) is the increase in the surplus that high valuation buyers enjoy if precautions change from the low level x_l^* to the high level x_h^*. The high valuation buyers capture the entire surplus if they identify themselves, because sellers' profits are assumed to be zero.

Proof. See the Appendix.

Proposition 3. (a) If it is socially optimal for there to be communication between (high valuation) buyers and sellers, then the outcome under the limited liability rule will be socially optimal.

(b) Otherwise, the outcome will not be socially optimal.

Remarks. With regard to part (a), observe that if communication is socially optimal and (14) holds, then by Proposition 2(a) and Proposition 1(a), the outcome will be socially optimal: high valuation buyers alone will communicate, and precautions for the low and high valuation buyers will be x_l^* and x_h^*, respectively. Thus, what needs to be established is that if it is socially optimal for high valuation buyers to communicate, then (14) will hold.

This turns out to be the case; indeed, high valuation buyers communicate not only when it is socially optimal but also in some cases when it is not socially optimal. To understand why, compare the right-hand side of (10) to the second expression in (14). If the former is less than the latter, then communication by high valuation buyers will occur whenever it is socially optimal. Now the right-hand side of (10) is the gain in surplus to a high valuation buyer plus the gain to $(1 - \alpha)/\alpha$ low valuation buyers, when precautions change from x_{lh}^* to optimal levels x_l^* and x_h^*. The second expression in (14) is the gain in surplus to high valuation buyers plus the gain—which happens to be zero—to $(1 - \alpha)/\alpha$ low valuation buyers, when precautions change from $x_l^*$to optimal levels x_l^* and x_h^*. This latter gain in surplus is larger because it involves a change to optimal levels of precautions from the level x_l^* which is *suboptimal* when there is no communication, rather than from the level x_{lh}^*, which is optimal when there is no communication.

Part (b) is clearly true if high valuation buyers communicate when that is

perfectly competitive. Thus, sellers make expected profits of zero.

Before proceeding, observe that because sellers maximize profits, they minimize their expected costs. Hence, if a seller knows that his liability in the event of nonperformance will be l, he will choose his level of precautions x to solve

$$\min_x \; x + [1 - p(x)]l. \tag{12}$$

It is clear that the solution to this problem is the same solution to (2), so the seller will choose x_l^*. Similarly, if a seller knows that his liability for breach will be h, he will choose x_h^*; and if a seller's liability for breach will be l with probability $1 - \alpha$ and h with probability α, he will choose x_{lh}^*. Let us denote by c_l, c_h, and c_{lh} the respective sums of the seller's costs of precautions and expected liability payments in the three situations just described:

$$c_l = x_l^* + [1 - p(x_l^*)]l, \tag{13a}$$

$$c_h = x_h^* + [1 - p(x_h^*)]h, \tag{13b}$$

$$c_{lh} = x_{lh}^* + [1 - p(x_{lh}^*)][(1 - \alpha)l + \alpha h]. \tag{13c}$$

3.4 Behavior under the Limited Liability Rule

The following two propositions describe behavior under the limited liability rule and compare this behavior to socially optimal behavior.

Proposition 2. Under the limited liability rule, there are two possible types of equilibrium outcomes, and which one obtains depends on whether the following inequality is satisfied:

$$\begin{aligned} k &< (h - c_h) - \{p(x_l^*)h + (1 - p(x_l^*))l - c_l\} \\ &= [p(x_h^*)h - x_h^*] - [p(x_l^*)h - x_l^*]. \end{aligned} \tag{14}$$

(a) If (14) holds, there is a unique equilibrium in which high valuation buyers alone identify themselves and sellers select the high level of precaution x_h^* for these buyers, charging them $c_h + k_s$. Sellers choose the low level of precautions x_l^* for the silent buyers, who are low valuation buyers, charging them c_l.

(b) If the inequality in (14) is reversed, there is a unique equilibrium in which no buyers identify themselves, and sellers choose the low level of precautions x_l^* for all buyers, charging them c_l.

Remarks. The proof of Proposition 2 rests on two points. First, if a low valuation buyer identifies himself, he will not thereby alter the seller's liability

Remarks. To explain these results, observe first that if a high valuation buyer identifies himself, he will not increase the seller's liability for breach—it will be h whether or not he identifies himself—but he would face a price increase and would bear his communication costs. Consequently, high valuation buyers will not identify themselves.

Second, note that a low valuation buyer may want to identify himself. If he does so, he will bear the communication cost k_b and will be charged $c_l + k_s$, whereas if he is silent he would be charged c_{lh} if the seller attracted both low and high valuation buyers. In either case, he will obtain performance or its equivalent in a liability payment. Hence, an equilibrium in which low valuation buyers identify themselves will exist if and only if $k_b + c_l + k_s < c_{lh}$, which is the same condition as (17).

Proof. See the Appendix.

Proposition 5. (a) If communication between (high valuation) buyers and sellers is socially optimal, then the outcome under the unlimited liability rule will not be socially optimal.

(b) If communication between (high valuation) buyers and sellers is not socially optimal, then the outcome under the unlimited liability rule will be socially optimal if there is no communication; however, the outcome will not be socially optimal if there is communication.

Remarks. Part (a) is clear. By Proposition 4, high valuation buyers never communicate, so that the outcome cannot be socially optimal.

With regard to part (b), observe that if low valuation buyers do not communicate, the outcome will be socially optimal because, as stated in Proposition 4(b), sellers will choose the level of precautions x_{lh}^*. On the other hand, if low valuation buyers do communicate, the outcome cannot be optimal.

It should be pointed out why there may be communication even though it is not socially desirable. The value to a low valuation buyer of identifying himself is the price reduction $c_{lh} - c_l$, the right-hand side of (17). This price reduction comes about in part because the low valuation buyer does not have to subsidize high valuation buyers implicitly. The gain to a low valuation buyer from not subsidizing high valuation buyers can be "high," even when social gains from communication of information are "low" (because it is expensive to alter levels of precautions or doing that is ineffective)—that is, even when the right-hand sides of (9) and (10) are small.

Proof. The proof is clear from the Remarks.

3.6 Comparison of the Rules

The next proposition states the circumstances under which one or the other rule is socially superior.

not socially optimal. Suppose, on the other hand, that no buyers communicate, which is the only other type of equilibrium, by Proposition 2. This equilibrium is not optimal if it is socially optimal that no buyers communicate, because sellers choose low precautions of x_l^* rather than intermediate precautions x_{lh}^*. In essence, the problem is that their liability is only l, whereas the true social cost of breach is $(1 - \alpha)l + \alpha h$, which is higher.[31]

Proof. The proof is clear from the Remarks, except that we need to show that if it is socially optimal for h's to communicate, then (14) holds. Now multiplying (14) by α, we obtain

$$\alpha k < \alpha[p(x_h^*)h - x_h^*] - \alpha[p(x_l^*)h - x_l^*]. \tag{15}$$

It suffices to show that the right-hand side of (15) exceeds I, for then (9) will imply (15). Subtracting I from the right-hand side of (15), we obtain

$$\{p(x_{lh}^*)[(1 - \alpha)l + \alpha h] - x_{lh}^*\} - \{p(x_l^*)[(1 - \alpha)l + \alpha h] - x_l^*\}. \tag{16}$$

But (16) must be positive, because x_{lh}^* maximizes $p(x)[(1 - \alpha)l + \alpha h] - x$ over all possible x.

3.5 Behavior under the Unlimited Liability Rule

The next two propositions describe behavior under the unlimited liability rule and compare it to socially optimal behavior.

Proposition 4. Under the unlimited liability rule, there are two possible types of equilibrium outcomes, and which one obtains will depend on whether the following inequality is satisfied:

$$k < c_{lh} - c_l. \tag{17}$$

(a) If (17) holds, there is a unique equilibrium in which low valuation buyers alone identify themselves and sellers select the low level of precautions x_l^* for these buyers, charging them $c_l + k_s$. Sellers choose the high level of precautions x_h^* for the silent buyers, who are high valuation buyers, and charge them c_h.

(b) If the inequality in (17) is reversed, there is a unique equilibrium in which no buyers identify themselves, and sellers choose the intermediate level of precautions x_{lh}^* for all buyers, and charge them c_{lh}.

31. If liability for breach were equal to $(1 - \alpha)l + \alpha h$ rather than l in the absence of communication, then sellers would choose x_{lh}^*. However, it can be shown that high valuation buyers under this rule would not necessarily communicate whenever communication would be socially optimal; the explanation is that they would not obtain the full social surplus from communicating.

limited liability rule, x_l^* is the level of precautions for h's, whereas under the unlimited liability rule, x_h^* is the level of precautions for h's, but $(1 - \alpha)k$ is incurred in communication costs. Hence, to show that social welfare is higher under the limited liability rule, we need to demonstrate that

$$(1 - \alpha)k > \alpha[(p(x_h^*)h - x_h^*) - (p(x_l^*)h - x_l^*)]. \tag{18}$$

Because there is no communication under the limited liability rule, the inequality in (14) must be reversed. Multiplying both sides of (14) by α and reversing the inequality, we obtain

$$\alpha k > \alpha[(p(x_h^*)h - x_h^*) - (p(x_l^*)h - x_l^*)]. \tag{19}$$

Because $(1 - \alpha)k > \alpha k$, (18) holds.[32]

4. Extensions

4.1 Deliberate Breach

In our model, nonperformance came about because of buyers' failure to take greater precautions to raise the *likelihood* of performance, rather than because of outright decisions not to perform. Our assumption was probably appropriate in regard to the situation in *Hadley v. Baxendale*. We may imagine, for instance, that the precaution of attaching a special label on Hadley's engine shaft was not undertaken when it was shipped from its point of departure; and that this made it more likely, but not certain, that at some later point of transfer, the shaft would be left behind. In many instances, however, breach is a deliberate, willful act in the sense that it is known that the act *definitely* will result in nonperformance. This would have been so in *Hadley v. Baxendale* if Pickford's agents in London decided to delay shipment of the shaft to Greenwich in order to ship something else instead. Indeed, most of the economic literature on breach of contract has focused on such deliberate, willful decisions.

Our analysis and conclusions would be little altered were we to examine a model in which breach is deliberate. In a model of this type, it would be socially desirable for performance to occur when and only when its value exceeds the cost of performance. And the seller would decide to perform in exactly these desirable circumstances if he knows the value of performance

32. Finally, let us note that our results about buyers' and sellers' behavior under the two rules would be little changed if we were to assume that the costs of communication depended on the buyer's announced valuation (see notes 23 and 30 *supra*). In particular, Proposition 2, describing behavior under the limited liability rule, would be unchanged, except that in Equation (14) k_h would replace k. Second, Proposition 4, describing behavior under the limited liability rule, would be unchanged, except that in expression (17) k_l would replace k. Last, recall (see note 30 *supra*) that as long as $\alpha k_h < (1 - \alpha)k_l$, the most economical way of transferring information is for the h's only to communicate. If this condition holds, then Propositions 3, 5, and 6 (comparing behavior under the rules to the socially desirable behavior and to each other) are unchanged.

Proposition 6. (a) If it is socially optimal for there to be communication between (high valuation) buyers and sellers, then the limited liability rule is superior to the unlimited liability rule.

(b) If it is not socially optimal for there to be communication between buyers and sellers, then the unlimited rule is superior to the limited liability rule if there is no communication under the unlimited liability rule, but the limited liability rule is superior otherwise.

Remarks. That part (a) is true is readily seen. If communication is socially desirable, we know from Proposition 3(a) that it will occur under the limited liability rule and that the outcome will be socially optimal. On the other hand, we know from Proposition 5(a) that the outcome will not be optimal under the unlimited liability rule; even if there is communication, it will not be by the minority of buyers, those with the high valuation.

With regard to part (b), observe first that, by Proposition 5(b), if communication is not desirable and it does not occur under the unlimited liability rule, the outcome will be socially optimal. However, by Proposition 3(b), the outcome will not be optimal under the limited liability rule; even if there is no communication, the level of precautions will be incorrect, x_l^* rather than x_{lh}^*.

It remains to consider the case where communication is not socially desirable but it does occur under the unlimited liability rule. In this situation, according to part (b), the limited liability rule is superior. Suppose first that there is also communication under the limited liability rule. Then this rule is superior, for under it only the high valuation buyers communicate, whereas under the unlimited liability rule the low valuation buyers communicate. Now suppose that there is no communication under the limited liability rule. It must then be that social welfare is higher under the rule when there is no communication than if there were communication, for high valuation buyers would capture the surplus from communication and yet choose not to. The conclusion now follows because social welfare would be higher if there were communication under the limited liability rule than under the unlimited liability rule, because under the former only the high valuation buyers communicate.

Proof. The only relationship requiring proof is that between the two rules when it is not socially optimal for there to be communication but l's identify themselves under the unlimited liability rule. We consider the two subcases.

(i) Suppose that under the limited liability rule, the equilibrium is such that the h's identify themselves. Then social welfare is higher under the limited liability rule: Under both rules, sellers choose x_l^* for the l's and x_h^* for the h's, but communication costs are lower under the limited liability rule, because h's are in the minority and only they communicate. Hence, social welfare is higher under the limited liability rule.

(ii) Suppose that under the limited liability rule, the equilibrium is such that no buyers identify themselves. Then social welfare is higher under the limited liability rule: Under both rules, x_l^* is the level of precautions for l's. Consequently, the difference between the outcomes under the rules is that, under the

Hence, under the limited liability rule, high valuation buyers have an incentive to take steps to convert themselves into low valuation buyers, and there is no need for them to communicate; whereas under the unlimited liability rule, while there is also an incentive for high valuation buyers to convert themselves into low valuation buyers, they must communicate in order to limit their liability. The limited liability rule therefore conserves transactions costs.

4.3 Sellers' Ignorance about the Existence of High Valuation Buyers

Sellers were assumed in the analysis to be aware of the existence and, indeed, of the fraction of high valuation buyers in the population. But in some situations sellers may in fact be unaware of the existence of high valuation buyers. As explained below, consideration of these situations strengthens the appeal of the limited liability rule.

Observe first that, under the limited liability rule, a seller's not contemplating the possibility of the buyer having a high valuation would have no effect on outcomes. Consider the incentive of a high valuation buyer to identify himself. If he does not identify himself, he will receive only the low value in the event of breach. (The seller's ignorance is simply irrelevant because of the protection given to him by the limited liability rule.) And if he does identify himself in order to be fully compensated in the event of breach, the seller will thereby become aware of the buyer's high valuation, charge him a higher price, and raise the level of precautions. Thus, the behavior of buyers (in terms of their decisions about precautions and pricing) would be the same as in our analysis of the case in which sellers know about the existence of high valuation buyers.

By contrast, under the unlimited liability rule, sellers' ignorance of the existence of high valuation buyers would have an effect on outcomes, and the effect would be socially undesirable. If sellers are unaware of the existence of high valuation buyers, they will believe their liability to be low for all buyers and will charge a low price for all buyers. Consequently, there will be no incentive for low valuation buyers to identify themselves (they would not obtain a discount, given that sellers believe that all buyers have low valuation). Thus, under the unlimited liability rule, sellers will never gain information leading them to use high precautions for high valuation buyers. Furthermore, the uniform level of precautions that sellers will use in the no-communication equilibrium that will result will be inefficiently low. (Sellers will use the level that is appropriate for low valuation buyers rather than one that is appropriate for the average valuation in the buyer population.)

Indeed, the above discussion suggests what can be established—that, for all cases in which sellers do not contemplate the existence of high valuation buyers, the limited liability rule is unambiguously superior to the unlimited liability rule.[33]

33. This result can be obtained by modifying the argument establishing Proposition 6. When sellers are ignorant about the existence of high valuation buyers, the only possible outcome under the unlimited liability rule is a no-communication equilibrium, with sellers using the low level of

and would have to pay this in damages if he committed breach. Thus, as in our model, it would be socially desirable for the seller to obtain information about the value of performance if the cost of communication is low enough. Further, under the limited liability rule, a buyer would tend to want to inform the seller of his valuation despite his having to pay a higher price, and so forth.

4.2 Buyers' Precautions and Mitigation of Losses

We made the simplifying assumption that buyers could not affect the losses they suffer from breach. But buyers sometimes can act to reduce their losses, either by taking preparatory steps (Hadley might have kept a spare, if imperfect, shaft on hand for emergency use) or by doing something after a breach (Hadley might have borrowed an engine shaft upon learning that delivery of a new one would be delayed). Consideration of buyers' ability to alleviate losses in such ways tends to reinforce our conclusions about the superiority of the limited liability rule when communication is socially desirable.

Before saying why, let us note that when a buyer can reduce his losses by doing something *after* a breach, the courts normally impose a duty to mitigate losses on him: his allowable claim is only for the losses he would have suffered had he taken reasonable steps to limit them. Not being able to collect for losses that he can readily mitigate, a buyer will be led to mitigate such losses. Since buyers' incentives to mitigate losses after a breach are dealt with by a specific legal duty, it is only where courts cannot apply this duty to mitigate losses—for lack of information about a buyer's opportunity to mitigate losses—that incentives to mitigate losses would be affected by the limited and unlimited liability rules. On the other hand, there is no legal duty to take steps *before* a breach that would circumscribe its consequences, so that with regard to steps of this type, the rules of concern to us are always of relevance.

Now let us ask about the limited and unlimited liability rules for breach, assuming for ease that, before a breach, high valuation buyers can cheaply—and ought optimally—take steps to reduce their losses to the low level. In effect, high valuation buyers can convert themselves into low valuation buyers and should do so.

Under the limited liability rule, high valuation buyers would decide to convert themselves into low valuation buyers. For if a high valuation buyer does so, he need say nothing to the seller and would pay the usual, low price. And if a high valuation buyer were to fail to convert himself into a low valuation buyer, he would be worse off: either he would identify himself and pay a higher price; or he would not identify himself and suffer uncompensated losses in the event of breach.

Under the unlimited liability rule, a high valuation buyer who remains a high valuation buyer will be assured of full compensation for his losses in the event of breach, yet will have to pay the high price charged to those who do not limit their liability. If a high valuation buyer converts himself into a low valuation buyer and limits his liability, he will pay only the low price. He will do this, assuming that the cost of communication is sufficiently low.

uneconomic for the seller to change well-functioning, routinized procedures for a small minority of special customers. (This may be especially likely for large companies dealing with a mass of customers; for some such firms, the costs of "customizing" service may be significant.) If so, then a policy of an absolute limitation on liability would be both efficient and to the seller's advantage: nothing would be gained by having high valuation buyers announce themselves, because by hypothesis nothing extra would be done for them; and yet greater, and needless, transaction costs would be borne in the process. By imposing an absolute limit on liability, sellers avoid bearing added transaction costs.

Another explanation, perhaps complementary, is that sellers may be risk averse and unwilling to bear liability above some level.

4.6 Distributional Consequences

While our analysis has focused on issues of incentives and efficiency, our model also enables us to identify the distributional consequences of the choice between the two alternative liability rules.

Suppose first that sellers are aware of the existence of high valuation buyers. In this case, the choice of rule has no distributional consequences with regard to sellers. Under either rule, sellers make no expected profits; their expected revenues always equal their expected costs.

The choice of rule, however, does have distributional consequences with regard to buyers. Under the limited liability rule, each type of buyer receives, in expected value terms, exactly what he pays. A low valuation buyer or a high valuation buyer who does not identify himself pays the low price and obtains the low amount in the event of breach (which the price charged covers). A high valuation buyer who identifies himself pays more and receives more in the event of breach. In contrast, under the unlimited liability rule, there may be cross-subsidization of high valuation buyers by low valuation buyers. This will happen when low valuation buyers do not identify themselves. In this case, both low and high valuation buyers pay a price that is based on the average liability of sellers; thus, in expected value terms, low valuation buyers pay more than they receive, while high valuation buyers pay less.

Consider now the situation in which sellers are unaware of the existence of high valuation buyers. In this case, low valuation buyers will pay exactly for what they obtain under either rule. The choice of rule, however, will now have distributional consequences as between high valuation buyers and sellers. Under the limited liability rule, high valuation buyers will pay sellers for what they receive, whereas under the unlimited liability rule they will not.

In sum, under the limited liability rule, buyers of both types pay for what they receive whether or not they identify themselves; whereas, under the unlimited liability rule, high valuation buyers may be subsidized by low valuation buyers or by sellers. This observation may lead one to prefer the limited liability rule over the unlimited liability rule on distributional grounds.

4.4 Risk Aversion

Whereas we assumed that buyers and sellers were risk neutral, they may be risk averse. How, if at all, does this alter our conclusions? It does not change our central point: that if communication is socially desirable, it should be accomplished at least cost, by high valuation buyers, and that this can occur under the limited liability rule but cannot occur under the unlimited liability rule.

Risk aversion, however, may influence the strength of the incentive to communicate. For example, if buyers are risk averse and sellers are not, then high valuation buyers will have a greater motive to communicate under the limited liability rule than we said, because they will want more strongly to avoid the risk of being inadequately compensated for loss in the event of breach. Conversely, if sellers are risk averse and buyers are not, then high valuation buyers will have a weaker incentive to communicate than we said, because sellers will raise the price by a greater amount than if they were risk neutral to compensate themselves for bearing extra risk.

Moreover, risk aversion will also influence the social desirability of communication. As a general matter, one suspects that communication would be desirable more often than we found, because it would allow a better allocation of risk as well as a better choice of precautions.

4.5 Absolute Limitations of Liability

In reality, but not in our model, sellers sometimes place absolute limits on their liability. That is, even if a buyer identifies himself as having a very high valuation, he will find the seller unwilling to offer him a contract with higher liability for breach. How can this be explained in light of the theory we have been discussing?

One explanation involves the possibility that—unlike in our model—there is little the seller can do to raise the likelihood of performance, or that it is

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precautions x_l^* for all buyers. Under the limited liability rule, however, there are two possible outcomes. One possible outcome is a no-communication equilibrium, with sellers using x_l^* for all buyers, an equilibrium that would be identical to the no-communication equilibrium under the unlimited liability rule. (This critical step depends on the assumption that sellers are unaware of the existence of high valuation buyers. Recall that, when sellers are aware of the existence of such buyers, the no-communication equilibrium under the unlimited liability is characterized by the intermediate precautions level x_{lh}^* and is for that reason superior to the no-communication equilibrium under the limited liability rule.) Alternatively, the unlimited liability rule may produce a communication equilibrium with different levels of precautions for high and low valuation buyers. It can be shown that, whenever such a communication equilibrium occurs, it would be socially preferable to the no-communication equilibrium with a uniform precautions level of x_l^*. (High valuation buyers capture all the benefits and bear all the costs of moving from the no-communication equilibrium to the communication equilibrium, and would not make such a move unless it produced social gains.) Thus, the outcome under the limited liability rule will be either identical or superior to that under the unlimited liability rule, which establishes the unambiguous dominance of the former rule for the case in which sellers do not contemplate the existence of high valuation buyers.

limitation on the seller's liability would add little friction, because the contracting process would be elaborate anyway.

The savings in transaction costs afforded by the limited liability rule do seem to be of real importance, however, with regard to brief, routinized, and informal transactions (e.g., calling to order a certain minor service at a given time). In these transactions—which are vast in number—adding an interaction between buyer and seller might well constitute a nonnegligible inconvenience. (Consider the consequences of having to add, in most of the brief conversations made to arrange minor services, a clear understanding that the seller's liability is limited.) Hence, a rule of unlimited liability might have a significant efficiency cost whenever it is desirable for sellers to use differential precautions for low and high valuation buyers—for the unlimited liability rule would result either in higher transaction costs for the low valuation buyers and sellers, or in sellers' failing to exercise differential precautions.

Appendix

Proof of Proposition 2

The proof is carried out in several steps.

(i) There cannot be an equilibrium in which any buyers identify themselves as l's: Suppose otherwise. Then the price charged to such buyers must be $c_l + k_s$, for in equilibrium price must equal cost. If in the equilibrium there are also transactions with silent buyers, the price charged to them must be c_l. But the buyers who state that they are l's would then be better off being silent and paying c_l than $c_l + k_s$. On the other hand, if in the equilibrium there are no transactions with silent buyers, a seller could offer a price between c_l and $c_l + k_s$ to silent buyers. This would attract buyers who say they are l's and would allow positive profits for the seller.

(ii) If (14) holds, then there is an equilibrium in which h's alone identify themselves as h's, as described in part (a): Suppose that there are two types of contracts offered, a contract for silent buyers at price c_l, and a contract for buyers who identify themselves as h's at price $c_h + k_s$. First, observe that sellers will choose x_l^* for silent buyers because their liability will be l, and sellers will choose x_h^* for buyers who identify themselves as h's because their liability will be h; also, sellers' profits will be zero for each type of contract. Second, buyers will do as claimed. That is, l's will be silent; for if they say they are h's and pay the higher price, their expected utility will be $(1 - p(x_h^*))h + p(x_h^*)l - c_h - k$, which is less than

$$(1 - p(x_h^*))h + p(x_h^*)l - c_h = p(x_h^*)l - x_h^* < p(x_l^*)l - x_l^* = l - c_l,$$

which is their expected utility if they are silent. Also, h's will identify themselves as h's, by the logic supplied in the Remarks. Third, sellers cannot make positive profits by offering an alternative contract. A seller could not make positive profits by offering a different contract to silent buyers or to buyers who identify themselves as h's. If a seller offered a contract to buyers who

4.7 Continuum of Valuations of Performance

Although we assumed in the model that there were only two valuations that buyers placed on performance, in reality there will be a whole continuum of valuations. Were we to take this factor into account in the model, we would find that under the rule limiting liability to some threshold amount, buyers with valuations exceeding the threshold would tend to identify themselves in order to assure themselves of damages for breach fully equal to their valuations, as we discussed in our model. Yet certain buyers with valuations below the threshold would also want to identify themselves: those buyers with valuations far below the threshold would desire to limit their liability to their true valuations in order to enjoy a reduction in price from the usual level accorded buyers who do not identify themselves. Similarly, under the unlimited liability rule, buyers with low valuations would tend to identify themselves and limit their liability to benefit from price reductions. Thus, we would come to the same general conclusions, but with some variations in detail arising from differences among buyers with valuations less than the limited liability threshold.[34]

5. Concluding Remarks

Let us conclude by assessing the likely importance of the limited liability rule of *Hadley v. Baxendale* to actual outcomes. Our opinion is as follows. First, we take it as self-evident that it is of importance for sellers to learn about the value that buyers place on performance when performance is very valuable, because there is frequently something cost-justified that can be done to reduce the likelihood of breach.

This point, however, does not by itself constitute a strong argument in favor of the limited liability rule. As we have stressed, sellers may obtain information from buyers even under the unlimited liability rule, because *low* valuation buyers may elect to identify themselves and limit the seller's liability. In this case, the advantage we found in the limited liability rule was not that it alone would enable sellers to learn what they needed. Rather, it was that *transaction costs* would be saved: only the minority of high valuation buyers communicate under the limited liability rule, whereas the majority of normal buyers communicate and limit their liability under the unlimited liability rule.

What is the importance of such savings in transaction costs? Sometimes, admittedly the savings will not be large. Notably, when there is substantial discussion of contract terms, the potential savings in transaction costs is not likely to be significant; for sellers and low valuation buyers to include a

34. The extension to the continuum of types naturally raises the possibility of uncertainty about the actual working of the *Hadley* rule. Specifically, parties may be uncertain what limit d on damages the court will impose if the buyer does not communicate his valuation. In the presence of such uncertainty, some buyers may communicate with sellers even if their values are somewhat below d (because they may be afraid that the threshold is lower than d) and some buyers with values above d may not communicate (being overly optimistic about d). Thus, uncertainty about the threshold will lower the effectiveness of the *Hadley* rule (as would be expected).

suppose that there is an equilibrium in which l's say that they are h's and h's are silent. Then the l's would pay $c_h + k_s$ and the silent would pay c_h. But this can be upset by a seller who offers a contract at a price slightly above $c_l + k_s$ to buyers who say that they are l's: this would attract l's and allow a profit. Finally, suppose that there is an equilibrium in which l's say that they are h's and h's say that they are l's. Thus, l's would pay $c_h + k_s$ and h's would pay $c_l + k_s$. But this cannot be, for then h's would prefer to say they are h's and l's to say they are l's.

(ii) If (17) holds, then there is an equilibrium in which l's alone identify themselves, as described in part (a): Suppose that there are two types of contracts offered, a contract for silent buyers at price c_h, and a contract at price $c_l + k_s$ for buyers who say they are l's. Then buyers will do as claimed. Thus, h's will clearly choose to be silent; and l's will identify themselves as l's: if they do, they pay $c_l + k_s$ and bear k_b, for a total cost of $c_l + k$, which is less than c_{lh}, by (17), and thus less than c_h. Hence, they will not remain silent. Sellers will choose x_h^* for silent buyers because their liability will be h, and sellers will choose x_l^* for l's who identify themselves because their liability will be l. Sellers' profits will be zero for each type of contract.

It remains to show that sellers cannot make positive profits by offering an alternative contract. A seller clearly could not make positive profits by offering a different contract to buyers who identify themselves as l's. If a seller makes positive profits by offering a different contract to silent buyers, he must attract l's. To do this, the price must be less than $c_l + k$, but then he will attract h's as well. This means that the price must exceed c_{lh}, yet (17) then implies that l's would not be attracted. Finally, a seller cannot make positive profits by offering a contract to buyers who identify themselves as h's, because he would have to charge them more than $c_h + k_s$.

(iii) If (17) holds, the equilibrium just described in which l's alone identify themselves is the only equilibrium: There cannot be an equilibrium in which any buyers identify themselves as h's, by (i). Another possible equilibrium is one in which all buyers say that they are l's, and therefore pay $c_l + k_s$. This can be upset by a contract for the silent at a price slightly above c_h: it would attract h's and allow profits. An additional possibility is an equilibrium in which h's say that they are l's and thus pay $c_l + k_s$, and in which l's are silent and therefore pay c_l. But this cannot be, for h's would prefer to be silent. A final possibility is an equilibrium in which no buyers identify themselves. If this is an equilibrium, the price must be c_{lh}. But this cannot be an equilibrium because a seller could offer a contract to l's who identify themselves at a price slightly higher then $c_l + k_s$. This would attract l's, by (17), and allow the seller a profit.

(iv) If the equality in (17) is reversed, then there is an equilibrium in which no buyers identify themselves, as described in part (b): Suppose that there is only one contract offered, in which c_{lh} is the price for silent buyers. Both types of buyers would purchase this contract. Also, sellers would choose x_{lh}^* and make zero profits. A seller could not make positive profits by offering a contract to buyers who identify themselves as l's, because he would have to

identified themselves as l's, he would have to charge at least $c_l + k_s$ to make a positive profit, but buyers would prefer to be silent and pay c_l.

(iii) If (14) holds, the equilibrium in which h's alone identify themselves is the only equilibrium: First, there cannot be an equilibrium in which any buyers identify themselves as l's, by (i). Next, suppose that there is an equilibrium in which high valuation buyers remain silent and are charged c_l. But then a seller offering a price slightly above $c_h + k_s$ to those stating that they are h's will attract these high valuation buyers, by (14), and make a profit. Finally, suppose that there is an equilibrium in which low valuation buyers state that they are h's. In such an equilibrium, these buyers must be charged at least $c_l + k_s$, but in the event of breach, given that the actual loss they can demonstrate to the court is l, they will still obtain only l. Therefore, a seller who offers a price slightly above c_l to silent buyers will be able to attract these low valuation buyers and make a profit.

(iv) If the inequality in (14) is reversed, then there is an equilibrium in which no one identifies himself, as described in part (b): Suppose that there is only one contract offered, in which c_l is the price for silent buyers, and that buyers would purchase this contract. In this case, sellers would choose x_l^* and make zero profits. A seller could not make positive profits by offering a contract to buyers who identify themselves as l's, because he would have to charge them more than $c_l + k_s$, which would not attract them. A seller could not make positive profits by offering a contract to h's, who identify themselves as h's because the inequality in (14) is reversed, as explained in the Remarks. And it is easily seen that a seller could not make positive profits by offering a contract to l's who identify themselves as h's.

(v) If the inequality in (14) is reversed, there are no equilibria other than the one just described: There cannot be an equilibrium in which any buyers identify themselves as l's, by (i). And proceeding in a way analogous to step (iii), it can be shown that there cannot be an equilibrium in which h's identify themselves as h's, because the inequality in (14) is reversed; and that there cannot be an equilibrium in which l's say that they are h's.

Proof of Proposition 4

(i) There cannot be an equilibrium in which any buyers identify themselves as h's: If not, there are several possibilities for equilibria in which some buyers say they are h's. First, suppose that there is an equilibrium in which all buyers say that they are h's so that the price would be $c_h + k_s$. But this situation can be upset, for a seller could make positive profits by offering a contract to silent buyers at a slightly lower price: this definitely would attract h's and allow a profit (if it attracted l's as well, that would only increase profits). Second, suppose that there is an equilibrium in which h's say they are h's and l's are silent. Then the price for h's must be $c_h + k_s$ and for the silent, c_l. But this cannot be, for the h's would then prefer to be silent. Third, suppose that there is an equilibrium in which h's say that they are h's and l's say that they are l's. This, however, can be upset by a seller who offers to silent buyers a contract at a price slightly below $c_h + k_s$: this would attract h's and allow a profit. Fourth,

charge them more than $c_l + k_s$, which would not attract them, because the inequality in (17) is reversed. A seller obviously could not make positive profits by offering a contract to buyers who identify themselves as h's.

(v) If the inequality in (17) is reversed, there are no equilibria other than the one just described: There cannot be a equilibrium in which any buyers identify themselves as h's by (i). There cannot be an equilibrium in which all buyers say that they are l's as noted in step (iii). It was also stated there that there cannot be an equilibrium in which h's say that they are l's and l's are silent. Finally, there cannot be an equilibrium in which l's say that they are l's and are charged $c_l + k_s$, and h's are silent and are charged c_h. For a seller could make positive profits by offering a contract to silent buyers at a price slightly above c_{lh}. This would attract l's, because the inequality in (17) is reversed; and although it would also attract h's, it would allow the seller profits.

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CURRENT HISTORY

May 2000

"Chad has come to the center of international attention as the Wo international oil companies, and NGOs struggle over the development of th reserves. . . . The results will affect not only Chad's future but also the fu countries dealing with issues of accountability and development in t multinational corporations and world financial institutions.

Pipeline Politics in Chad

PETER ROSENBLUM

Chad is a sparsely populated country of 7 million people occupying a vast, mostly arid space in the center of Africa. Landlocked and bordered by troublesome neighbors such as Libya, Sudan, and Nigeria, it is also home to France's largest overseas military contingent and a source of interest for the United States primarily because of its relations with Libya—which has happily meddled in Chad's affairs over the years. Chad itself has a history of war, rebellion, and acts of barbarity committed by its armed forces and former presidents. It is a country that many Africans in the region dismiss as an impossible result of European border drawing that has left it terminally divided between a mainly Muslim north and Christian/animist south. Is it a country or a collection of ethnic warlords fighting behind the veneer of a modern state with its French-style bureaucracy, French-backed military, and heavy dependence on foreign assistance?

Chad has come to the center of international attention as the World Bank, international oil companies, and nongovernmental organizations (NGOs) struggle over the development of the country's oil reserves. The stakes are high—there is thought to be enough oil in Chad to double the country's revenues for at least 20 years—and the results will affect not only Chad's future but also the future of

already suffered a batterin tion. Previously, no one w relations between an oil state. He who ruled the sta For decades, as in the nea Angola or the former Z enriched elites, strengthen and impoverished those sovereignty has lost many face of structural adjustm of international business foreign aid, and the spread mental and human rights

A VOLATILE BACKDROP

Chad became indepen and has enjoyed few peac war, invasions from Libya various regions have w decades. Coups and coun in the capital of N'djam country's most notorious power through a coup in 1990, his former chief of him out of the country an as Chad's president.

During the final phas

simply to secure power by further vilifying his predecessor, the victims of the Habré regime, coming from all regions of the country, organized into an association, collected information, and presented their evidence to the commission. Unfortunately, even as the Truth Commission pursued its task, identifying by name Habré's henchmen in the security police, Déby had already begun to rehabilitate and incorporate many of them into a rebaptized security police. By the time the report was completed, the struggle for accountability had been lost; Déby was already relying on the same tactics and torturers to fight new battles. There would be no effort to extradite Habré (who was then living in Senegal), and little chance that his collaborators who remained would face prosecution.[1]

Still there was promise of political reform. A National Conference was held in the first four months of 1993 with the active participation of human rights groups and opposition politicians. It led to the establishment of a transitional regime and the writing of a new constitution, eventually adopted by referendum in early 1996. Later that year, Déby was elected to a five-year presidential term in elections that the United States State Department said were "marred by widespread and credible reports of fraud, vote-rigging, and irregularities by local officials." Legislative elections in 1997 were even more problematic. Under questionable circumstances, Déby's Patriotic Salvation Movement won 68 of 125 seats; the Union for Renewal and Democracy party of Wadal Kamougué, a southern general, came in second with 29. Kamougué quickly formed an alliance with Déby in order to become president of the National Assembly, drawing in other potential opponents and creating a parliamentary bloc of near unanimous support for the president. Depending on the political winds—and the use of the prisons—the parliamentary opposition now numbers between one and three seats. As the UN special rapporteur on Chad wrote last year, "This political monolith has put an end to all real political debate on the important issues in the country, such as the oil file or foreign

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because of what he said about oil—about who would benefit and who already had. Yorongar is sometimes referred to as the "deputy of the 300 wells." He was elected from Bebidja, which is where the oil is located—and where a single red pump now sits, waiting for the day when 299 others will join it in a network of pipes, pumps, and collection points that will send the oil on a 1,000-kilometer trip to the sea off the coast of Cameroon.

Oil exploration began in Chad in the early 1970s, and reserves were soon discovered at Doba Basin, site of the current project, as well as another area nearer to the capital. Conoco, Chevron, Exxon, and Shell were involved at that time. Civil war interrupted further plans in the late 1970s. Conoco withdrew and in 1993 Chevron sold its share to the French oil company Elf, leading to a "consortium" in which Exxon held a 40 percent share, Shell 40 percent, and Elf 20 percent. This consortium entered into a memorandum of understanding with the government for development of the Doba site in 1994.

Previously, no one would have interfered in the relatio between an oil company and an African state. He wh ruled the state controlled its resources.

Although Exxon is the lead operator and primary presence in Chad, Elf's importance greatly exceeded its minority position. In the postcolonial period, Elf has exerted a powerful and disproportionate influence on French policy in Africa; there have been reports that Elf supported Déby's rise to power in exchange for a place in the oil consortium.

Soon after Déby came to power, the Doba region was again swept up in rebel violence, stopping further oil development. A rebel group known as the Armed Forces for the Federal Republic (FARF) emerged in the early 1990s. The government countered FARF attacks with broad counterinsurgency measures targeting the civilian population. There were recorded massacres from 1992 until 1996, when a peace accord was signed with the government. The government broke the peace six months later and essentially wiped out FARF, killing its leader.

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The Chad consortium's m years down the road, they w ble for any outcome, whatev bility. They needed insu

The World Bank, which had tural adjustment programs in the best candidate. There was bank's involvement. The fun was "not the only or even the seeking its participation, ac website publication. "[T]he C host countries have sought W ticipation because it provides cant development benefits, management assistance, envi oversight, and risk mitigation

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Chad and Cameroon to finance their investment in the pipeline, and provide assistance for government management of the revenues and the environment. In total, the bank's direct assistance will amount to about 3 percent of the cost of the project. Moreover, once the public lending arm of the bank reaches a decision, the private lending facility—the International Finance Corporation—will contribute another $100 million of its own resources and $300 million of syndicated loans from private banks.

Setting Conditions

World Bank involvement in the Chad oil development project has opened the field for global advocacy on a new scale. The Chadian government had already successfully marginalized its own local campaigners and the multinational oil companies were beyond the reach of most traditional advocacy. But the World Bank has internal rules and procedures that increasingly recognize the importance of the environment, social dislocation, and local participation in World Bank-funded projects. Although the forum was not hospitable, the bank was forced to respond to critics who targeted its own policies.

The bank placed two "essential" conditions on support for the project: compliance with all World Bank environmental and social safeguard policies, and "a fully satisfactory program for the sound management of petroleum revenues." International environmental organizations seized on the first theme. The most sensitive environmental issues concerned Cameroon, where indigenous people and virgin forest would be affected by the pipeline's route.

But the second issue, revenue management, was especially important for Chad, given that the project was intended nearly to double state revenues. As current studies of development show, mineral wealth rarely translates into economic or social progress for the majority of a country's population. Transformed expectations, increased corruption, reinforced authoritarianism, yes. Democracy, development, transparency and participation, no. Africa is filled with mineral-rich failures, including Nigeria, Angola, and the former Zaire. The World Bank can cite only

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The bank staff began a counteroffensive aimed at the advocacy organizations. "It is unfortunate that our efforts to address the questions raised by critics are sometimes construed as public relations schemes, aimed at marketing the project and obscuring real issues," wrote Serge Michailof, country director for the region, in a response to criticisms from the EDF. His letter followed a series of almost comical incidents that exposed the World Bank's awkward position, including several World Bank e-mails that were leaked to advocacy groups. The bank's vice president for environmentally and socially sustainable development wrote to the vice president for Africa and other bank officials to suggest a "three-pronged approach" to secure support for the project. First, establish a good case to use with "media, parliamentarians and national administrations" in the major shareholder countries. Second, "initiate a high-level strategic discussion with our partners in the oil business." Third, and most embarrassing for the bank, "engage our NGO critics in a separate exercise that would allow us to avert the public spotlight from the differences between the NGOs and ourselves."

The rest of the memo was devoted to detailing the strategy for a "listening" mission to Europe and the oil region whose purpose would be to "buy time from our critics . . . while pushing ahead with the main thrust of our campaign." One phrase in the memo was especially galling to the NGOs: the listening mission had to be carefully constituted to convince NGOs "that we really are prepared to listen, learn and, eventually makes some proposals that might mollify them." A spokesman for the World Bank said the language was "a little unfortunate."

The bank also brought from the region a group of civil society representatives from Chad and Cameroon to counter the environmental groups and their local allies. The group presented something of a caricature of government propaganda. Its press statement was almost identical to an official press release from the Chad embassy, and the two Cameroonian members turned out to be consul-

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