SUMMARY:

... Fiduciary relationships have occupied a significant body of Anglo-American law and jurisprudence for over 250 years, yet the precise nature of the fiduciary relationship remains a source of confusion and dispute. ... The fiduciary relationship exposes a beneficiary/principal to two distinct types of wrongdoing: first, the fiduciary may misappropriate the principal's asset or some of its value (an act of malfeasance); and second, the fiduciary may neglect the asset's management (an act of nonfeasance). ... Similarly, Part II outlines the risk of a fiduciary's negligent mismanagement of an asset, describing the efficient level of managerial effort and how the duty of care affects it. ... Perfect disgorgement combined with imperfect enforcement causes the expected sanction to be less than the gain from wrongdoing. ... A problem equivalent to that of determining whether a filter would have trapped the spark arises in fiduciary law whenever wrongdoing increases a preexisting risk. ... For example, a trustee often is required to be prudent and conservative in managing an asset, whereas a director of a start-up company may be encouraged to take risks. ... Parts I and II analyzed the legal and economic elements of the fiduciary relationship with respect to both the duty of loyalty and the duty of care. ... Finally, profit-sharing cannot eliminate inappropriate risk altogether. ...

HIGHLIGHT: Despite the centrality of fiduciary relationships to Anglo-American law, the scope of fiduciary rights and duties has eluded definition. Using the analytical tools provided by law and economics, in particular the
principal-agent model, this Article provides a more precise definition of fiduciary rights and duties in Anglo-American law and the economic consequences that such rights and duties generate. The authors contend that because appropriation is both very profitable for the fiduciary and difficult to detect by the beneficiary, fiduciary law appropriately infers disloyalty from its appearance. Moreover, they argue that if the beneficiary establishes the appearance of disloyalty, it is proper for fiduciary law to require the fiduciary to bear the burden of proving her innocence and to increase the sanction for misappropriation to include punishment and not just compensation. In contrast, the authors contend that lack of care by the fiduciary is much less profitable than outright misappropriation. Thus, courts should not infer lack of care from its mere appearance. Moreover, the authors conclude that compensatory liability for harm resulting from lack of care usually suffices to deter such behavior, provided that the standard of care is set according to the Hand Rule for tort negligence.

**TEXT:**

[*1045] INTRODUCTION

Fiduciary relationships have occupied a significant body of Anglo-American law and jurisprudence for over 250 years, n1 yet the precise nature of the fiduciary relationship remains a source of confusion and dispute. n2 Legal theorists and practitioners have failed to define precisely [*1046] when such a relationship exists, exactly what constitutes a violation of this relationship, and the legal consequences generated by such a violation. Familiar forms of fiduciary relationships include trustee-beneficiary, agent-principal, corporate director/officer-corporation, and partner-partnership, although courts have emphasized that these categories are not exclusive. n3

In any of these paradigmatic forms, a beneficiary entrusts a fiduciary with control and management of an asset. Ideally, for the beneficiary, this relationship would be governed by specific rules that dictate how the fiduciary should manage the asset in the beneficiary's best interests. In fact, however, the fiduciary's obligations are open-ended. Because asset management necessarily involves risk and uncertainty, the specific behavior [*1047] of the fiduciary cannot be dictated in advance. Moreover, constant monitoring of the fiduciary's behavior, which would protect the beneficiary, often is prohibitively costly.

The economic character of the fiduciary relationship thus poses the question: "How can one party be induced to do what is best for another without specifying exactly what is to be done?" Economists design incentive structures that use self-interest to compel one party to do what is best for another by using the "principal-agent" model. n4 This Article applies the principal-agent model to the fiduciary relationship in order to explain that relationship's economic characteristics and its legal consequences. n5 This Article discusses how the legal system does and should treat the fiduciary relationship, focusing upon the appropriate scope of fiduciary duties and the best ways to deter their violation.

The fiduciary relationship exposes a beneficiary/principal to two distinct types of wrongdoing: first, the fiduciary may misappropriate the principal's asset or some of its value (an act of malfeasance); and second, the fiduciary may neglect the asset's management (an act of nonfeasance). Each type of wrongdoing is controlled by imposing a legal duty upon the fiduciary. The former -- misappropriation -- is governed by the duty of loyalty, and the latter -- negligent mismanagement -- is governed by the duty of care.

Part I of this Article focuses upon misappropriation, describing this [*1048] risk in economic terms and evaluating how the duty of loyalty imposed by the law affects it. Similarly, Part II outlines the risk of a fiduciary's negligent mismanagement of an asset, describing the efficient level of managerial effort and how the duty of care affects it. Finally, Part III discusses this Article's implications for fiduciary law and policy. Because a fiduciary's misappropriation is profitable and difficult to prove, it is appropriate for fiduciary law to infer disloyalty from its appearance. Once the appearance of disloyalty is established, the burden shifts to the fiduciary who must prove her innocence. Alternatively, if disloyalty is actually proved rather than inferred, it may be appropriate for fiduciary law to increase the sanction to include punishment, not just disgorgement of the appropriated asset. In contrast, lack of care is not as profitable for the fiduciary. Liability for the harm resulting from the lack of care usually is sufficient to deter it, provided that the standard of care is set according to the Hand Rule for tort negligence.
MISAPPROPRIATION AND THE FIDUCIARY-AGENT'S DUTY OF LOYALTY

A. The Appropriation-Incentive Model

Central to a proper understanding of the fiduciary relationship is the appropriation-incentive model, a particular form of the principal-agent model. Once a consensual relationship in which the principal relinquishes control or management of her asset to the agent is formed, the resulting separation of ownership from control or management creates opportunities for the agent to appropriate the asset or some of its value. Taking advantage of these opportunities whether by theft, diversion, conversion, or trespass would violate the agent's duty of loyalty. In general, however, an agent must choose between two courses of behavior: other-regarding acts, which the principal prefers, and self-regarding acts, which benefit the agent at the principal's expense. 

If the parties to this agreement possessed perfect information, disloyalty could be controlled or prevented by contract. In fiduciary relationships, however, the parties are unable to foresee the conditions under which one act produces better results than another. Rather, chance events and unanticipated contingencies require continual recalculation to determine which course of action will be the most productive. Accordingly, the agent may be unwilling or unable to bear the risk that she necessarily would assume by promising definite results. Thus, in the constantly changing environment of a fiduciary relationship, the agent's obligations must be articulated in general and open-ended terms; for example, the agent may make an express promise to use "best efforts" or "prudence," and the law may impose a requirement of "good faith." Even when the agent's duty can be specified in advance, wrongdoing such as misappropriation is difficult for principals to observe. Direct monitoring of the agent by the principal may be prohibitively costly or require expert knowledge. When the principal cannot observe these acts directly, she must infer them from outcomes. This inference is imperfect because outcomes depend upon the agent's conduct and also upon chance. Consequently, determining whether the agent's act was other-regarding or self-regarding often proves to be a guessing game, one which this Article terms the "principal's dilemma."

Figure 1 describes the principal's dilemma through a decision tree, which reduces the appropriation-incentive model to its minimal elements. At the first branching of the tree, the parties decide whether to form a relationship, which may consist of an explicit contract or an informal undertaking. If a relationship is formed, the principal places an asset worth one unit under the agent's control. At the second branching, nature chooses between a good or a bad state of the world that determines the relationship's productivity. In a good state, the relationship yields a large product, but in a bad state it results in a loss. Specifically, as the figure indicates, a good state of nature yields a product of one unit, and a bad state causes a loss of one-half unit. Thus, the initial investment of one increases to two in a good state and decreases to one-half in a bad state. At the third branching, the agent decides whether to appropriate the asset and report falsely or conserve the asset and report truthfully. The terminal values in the decision tree indicate the asset's value as reported to the principal by the fiduciary.

Figure 1: Appropriation-Incentive Model
B. Deterring Disloyalty

Figure 1 provides a concrete example of the interaction of the three general characteristics of the fiduciary relationship: separation of ownership from control or management; open-ended obligations; and asymmetrical information concerning acts and results. Because the principal owns the asset but the agent controls it, the agent's potential gain from wrongdoing is substantial. The probability of detecting and proving misappropriation breach of obligations is small since the principal's information is incomplete. Therefore, obstacles to deterring wrongdoing are inherent in the fiduciary relationship. n13

The usual remedy when the fiduciary appropriates part of the value of the principal's asset is disgorgement. n14 This Article defines "perfect disgorgement" as a sanction that restores the wrongdoer to the same position that she would have been in but for the wrong. In other words, perfect disgorgement strips the agent of her gain from misappropriation and leaves her no better or worse off than if she had done no wrong.

[*1052] Successful deterrence generally requires the expected sanction to equal or exceed the gain from wrongdoing. By definition, the expected sanction equals the probability that a sanction will be imposed multiplied by its magnitude. Thus, the sanction's probability partly determines whether wrongdoing will be deterred sufficiently.

In most civil disputes, the plaintiff -- here the principal -- bears the burden of proving the defendant's wrongdoing. n15 As described above, the principal has limited information about the agent's conduct. Therefore, if the principal had to detect and prove the agent's breach of duty, the probability of a court imposing a sanction would be low. Perfect disgorgement combined with imperfect enforcement causes the expected sanction to be less than the gain from wrongdoing.

A problem of deterrence arises whenever the expected sanction is less than the gain from wrongdoing. A simple mathematical restatement clarifies this fact. The severity of punishment can be measured by the amount that the sanction exceeds perfect disgorgement. n16 To capture this idea, the "punitive multiple," denoted \( m \), is defined as the ratio of the total sanction to perfect disgorgement. Thus a punitive multiple of one (\( m = 1 \)) indicates perfect disgorgement and no punishment; in contrast, a punitive multiple of two (\( m = 2 \)) indicates that the sanction is twice as large as perfect disgorgement and therefore embodies punishment. Additionally, \( p \) indicates the probability of holding the injurer liable. If the expected sanction (\( p \cdot m \)) is less than the gain from wrongdoing, then wrongdoing is profitable on average.

Appropriation by fiduciaries would be profitable on average if fiduciary law were similar to other types of tort law. If the principal had the burden of detecting and proving the agent's breach of the duty of loyalty, the lack of information available to the principal suggests that the sanction's probability would be less than one (\( p < 1 \)). If the sanction were perfect disgorgement, then \( m \) would equal one. Thus the product of \( p \cdot m \) would be less than one (\( p \cdot m < 1 \)) and appropriation would be profitable on average. n17 Just as a thief cannot be deterred simply by requiring her to return the stolen goods whenever she is caught, an agent cannot be deterred from appropriating the principal's asset if the sanction is perfect disgorgement.

C. The Duty of Loyalty

The economic characteristics of the fiduciary relationship thus pose the question: "How can wrongdoing be deterred when the standard civil remedy fails?" The special legal consequences of the fiduciary relationship provide an answer. Fiduciary law creates a cluster of presumptive rules of conduct compendiously described as the duty of loyalty. n19 The obligations comprising this duty restrict the permissible scope of a fiduciary's behavior whenever possible conflicts of interest arise between the principal and the fiduciary. n20 This bundle of rules helps to solve the deterrence problem by raising the enforcement probability. The legal rules comprising the duty of loyalty facilitate the proof of appropriation either by conclusively presuming appropriation or by requiring the fiduciary to prove that she did not misappropriate the principal's asset.
The presumptions of misappropriation have been formulated into proscriptive rules of fiduciary conduct. The two fundamental rules of fiduciary conduct are the rule against conflicts of interest and duty and the rule against secret profits.

The first category includes situations in which a fiduciary transacts with the principal without the principal's knowledge and informed consent. Such self-dealing includes situations in which, for example, a fiduciary in her capacity as agent contracts with herself or fails to disclose her ownership of an asset that she sells to the principal. Traditionally, a fiduciary was barred strictly from self-dealing. While courts have relaxed this strict rule, at least in the context of corporate transactions, the burden of proving the transaction's fairness remains with the fiduciary. Generally, once a fiduciary is shown to have purchased her own asset on behalf of the principal without its consent, either she is held to be disloyal and allowed no defenses, or she has the burden of proving her loyalty.

A second category of potentially problematic transactions arises when the fiduciary transacts with the consent of either the principal or a court but fails to disclose all material facts, thereby suggesting that she may have earned secret profits at the expense of the principal. Disputes in these cases usually concern the quality of disclosure and consent. Should a dispute arise, the fiduciary bears the burden of proving that she fully disclosed all material facts.

The special obligations imposed on fiduciaries by the duty of loyalty help raise the enforcement probability. To overcome difficulties in proof, the law infers disloyalty from its appearance, presuming that a fiduciary will appropriate the principal's asset when it is in her self-interest to do so. This inference alters the usual rules of tort liability by shifting the burden of proof from a plaintiff to a defendant or by prohibiting completely the act in question. The resulting increase in the enforcement probability raises the expected sanction. Even so, the expected sanction would remain less than the gain from appropriation, but for some informal and incidental elements of punishment.

II

CARE, EFFORT, AND RISK

Appropriation of a principal's assets is not the only possible breach of the fiduciary relationship. In addition, the fiduciary may manage the principal's assets carelessly. To manage an asset, the fiduciary must make decisions that affect the asset's value. A sound decision, in turn, requires a fiduciary to obtain and process relevant information and to act upon her findings. This Part describes the risk of shirking inherent in the fiduciary relationship and methods of deterring this behavior.

A. The Effort-Incentive Model

Figure 2 modifies the appropriation-incentive model of Figure 1 to depict the minimal elements of the effort-incentive model. The figures are similar because the fiduciary who shirks, in effect, appropriates effort owed to the principal. At the first branching in Figures 1 and 2, the parties decide whether to form a relationship, and, if they do, the principal places an asset worth one unit under the agent's control. At the second branching in state of the world, which determines the productivity of the agent's effort. Figure 2 differs from Figure 1 at the third branching, where the fiduciary decides whether to exert reasonable effort or to shirk. Reasonable effort in a good state increases the asset's value from one to two, whereas shirking causes the asset's value to fall from one to one-half. In contrast, reasonable effort in a bad state preserves one-half of the initial investment, whereas in a bad state shirking results in loss of all of the asset. These results appear at the right side of the decision tree in Figure 2.
misappropriation, the principal draws inferences about the agent's effort based upon imperfect information. To model these facts, we assume that the principal observes results and infers acts from these observations. The principal knows the terminal value but not the path by which it was reached in the decision tree.

When the product is two, the principal correctly infers that the agent exerted reasonable effort in a good state. Similarly, when the product is zero, the principal correctly infers that the agent shirked her responsibility. When the product is one-half, the principal faces the same dilemma described above; she cannot distinguish shirking in a good state from sufficient effort in a bad state. n36

B. Reasonable Effort and Duty of Care

Faced with the possibility of negligent mismanagement, courts must [*1058] determine how much effort is "reasonable." n38 This opaque term has been clarified in ordinary tort law with the help of marginal analysis. According to the rule pronounced by Judge Learned Hand, a potential injurer must take care so long as the cost of care does not exceed the resulting saving from fewer accidents. n39 Similarly, taking "reasonable care" requires the fiduciary to exert herself so long as the cost of such exertion does not exceed the resulting benefit to the principal.

Figure 3 graphically depicts this balancing of benefits and costs. The horizontal axis indicates the agent's level of effort, and the vertical axis indicates the resulting benefits and costs in dollar amounts. As effort increases, the principal's total benefits increase at a decreasing rate. Consequently, the marginal benefit line -- labeled "principal's marginal benefit" -- slopes downward. In contrast, the cost of additional effort to the agent remains constant or increases, so the corresponding curve -- labeled "agent's marginal cost" -- slopes upward slightly. These two curves intersect at the point, denoted \( x^* \), where the marginal cost to the agent equals the marginal benefit to the principal as required for efficiency. n40 Shirking consists in taking effort below the efficient level \( x < x^* \). For example, effort at level \( x[1] \) in Figure 3 constitutes shirking.

[*1059] Figure 3: Effort [SEE ILLUSTRATION IN ORIGINAL]

Agent's Effort

Figure 3 illustrates a sharp contrast between the duty of loyalty and the duty of care. The duty of loyalty sometimes requires the fiduciary to give no weight to her own interests. This same requirement, however, becomes unreasonable in the duty-of-care context. If the fiduciary behaved as though her effort were costless, she would work until the marginal product of her labor fell to zero, which corresponds to \( x[2] \) in Figure 3. The benefit of additional labor beyond \( x^* \) is less than its cost, so labor at level \( x[2] \) is inefficient. To avoid incentives for inefficient and unreasonable effort, the duty of care should not require the fiduciary to give more weight to the principal's interests than to her own.

C. Deterring Shirking

Compensation is the usual remedy for harm caused by negligence. This Article defines "perfect compensation" as damages that restore the victim to the same position that she would have been in but for the wrong. Perfect compensation thus leaves the victim no better or worse off than if the injurer had done no wrong.

The Hand Rule defines the efficient level of care such that the agent's cost savings from shirking are less than the resulting reduction in the principal's benefits. In other words, if an agent's savings from reduced care exceed the principal's reduction in benefits, the agent is not in [*1060] violation of the duty of care. Consequently, the compensatory damages faced by an agent found liable for shirking exceed the value she places on the effort that she saved. For example, if the agent exerts herself at the negligent level \( x[1] \) rather than the reasonable level \( x^* \) in Figure 3, the shaded triangle indicates the amount by which the principal's loss exceeds the agent's avoided cost. n41 This triangle represents the amount the agent would lose by shirking and paying perfectly compensatory damages. It also illustrates the difference between damages based upon perfect compensation and perfect disgorgement.
This argument can be restated in the language of game theory. In the analysis of loyalty as depicted in Figure 1, value appropriated by the agent exactly equals value lost by the principal; thus, the game is zero-sum. When wrongdoing is a zero-sum game, perfect disgorgement equals perfect compensation. However, in the effort-incentive model depicted in Figures 2 and 3, the agent who withholds her effort values it less than the principal to whom it is owed. As a result, the game is negative sum. When wrongdoing is a negative-sum game, perfect compensation exceeds perfect disgorgement.

The term "punitive damages" usually refers to supercompensatory damages, taking perfect compensation as its baseline. Since this Article focuses on deterring injurers rather than compensating victims, it uses "punishment" to refer to superdisgorgement damages, taking perfect disgorgement as its baseline. As discussed previously, when the duty of care is defined by the Hand Rule, perfect compensation may involve "punishment" in the sense of superdisgorgement damages.

In addition, imperfections in compensation often add a further element of punishment. To see why, consider the famous example of sparks emitted from a railway train that occasionally set fire to farmers' fields. Assume that an inexpensive filter placed in the smokestack of a locomotive, as required by a negligence rule, reduces spark emissions by thirty-three percent. If a farmer sued, the court would ask whether the railroad's negligence caused the fire. In other words, if the railroad had installed a filter would the spark that ignited the field have been trapped by it?

A definitive response to this question is impossible. The court knows that the injurer's negligence increased the probability of a preexisting harm, but it cannot know whether the harm would have materialized without the injurer's negligence. The most precise answer only can state the amount by which the injurer's negligence increased the probability of harm, specifically thirty-three percent. Perfect compensation requires putting the victim in the situation that the court would expect her to have been in but for the injurer's negligence. In these circumstances, perfect compensation requires the courts to discount the victim's actual harm by the expected harm that would have occurred without the injurer's negligence. Because courts have been slow to adopt the principle of discounting the actual harm, they frequently award full damages, which contain a punitive element.

A problem equivalent to that of determining whether a filter would have trapped the spark arises in fiduciary law whenever wrongdoing increases a preexisting risk. For example, would careful monitoring by the corporation's directors have detected self-dealing by management? If the trustee had paid more attention to the portfolio, would she have sold the stock before its price collapsed? Would more care by the agent have prevented the parcel from being lost? These questions should arise when the courts determine damages. If they fail to discount for preexisting risk, an element of punishment is added to compensatory damages, which helps to deter shirking.

*D. The Risk-Incentive Model*

Successful management of an asset requires judgment, and the fiduciary's duty of care applies to the process of making this judgment. Fiduciaries must acquire information, act on that information, employ a reasonable decisionmaking process, and, in many cases, satisfy minimal quality standards imposed by the law. For example, in the corporate context under the "business judgment rule," the fiduciary who satisfies the process requirements and the minimal quality standards may not be held liable to the beneficiary for a bad decision.

Judgment especially is important when decisions involve an element of risk. The duty of care imposes an obligation on the fiduciary to avoid unnecessary risk. However, different levels of risk are appropriate in different fiduciary relationships. For example, a trustee often is required to be prudent and conservative in managing an asset, whereas a director of a start-up company may be encouraged to take risks. Despite these differences, portfolio theory provides a unified framework from which to derive the legal standard of the risk appropriate to a particular fiduciary relationship.

The riskiness of a portfolio can be reduced by investing in many different instruments whose payoffs are
uncorrelated. The law of large numbers causes their ups and downs to cancel so that average earnings vary little. In addition, risk can be reduced by choosing investments whose payoffs are negatively correlated. Even with these techniques of diversification and negative correlation, some risk remains in the portfolio. The larger the unavoidable risk, the higher the expected return must be in order to induce investors to hold the portfolio. Thus, investors find that the market presents them with a tradeoff between unavoidable risk and rate of return. This tradeoff, called the "risk-return frontier," is depicted in Figure 4. [SEE ILLUSTRATION IN ORIGINAL].

A conservative investor will choose a point on the frontier where the risk and expected return are low, such as a portfolio of high-grade corporate bonds. An investor more prone to risk will choose a point farther up the frontier, such as growth stocks. The points farthest up the frontier represent concentrated investments in illiquid assets, such as specialized machinery or real estate. A skillful fiduciary will make investments that eliminate avoidable risk so that the principal's portfolio lies on the risk-return frontier. The appropriate point on the frontier will vary with the principal's risk preferences.

An economic interpretation of the fiduciary's duties with respect to investments flows from portfolio theory. Given the particular agency relationship, the fiduciary should manage the asset in order to reach an appropriate point on the risk-return frontier. Having done so, the fiduciary is free from liability for loss in the portfolio's value. If the fiduciary fails because of negligence or lack of effort, she has breached the duty of care. If she fails by design, she has breached the duty of loyalty. Given ample effort, care, and respect for the principal's risk preferences, the fiduciary will escape liability. The business judgment rule shields the fiduciary from the consequences of her own lack of skill, at least within some bounds.

III

POLICY IMPLICATIONS: FIDUCIARY RELATIONSHIPS AS GOVERNED BY ECONOMICS, CONTRACTS, AND LAW

Parts I and II analyzed the legal and economic elements of the fiduciary relationship with respect to both the duty of loyalty and the duty of care. Having established an analytical framework, Part III addresses the normative and positive issues raised by the fiduciary relationship's legal structure. In particular, it examines the incentive structure underlying the fiduciary relationship and demonstrates the manner in which this structure depends upon law and contract.

A. Markets for Fiduciaries

When parties decide whether to form a fiduciary relationship, they balance the benefits of such an arrangement against its costs. An important goal of fiduciary law should be to maximize the net benefits of the fiduciary relationship to its participants. This section demonstrates how law can be structured to pursue this policy objective.

The legal burdens on fiduciaries increase the cost of their services. Because the rules currently governing disloyalty are strict, many fiduciaries will respond defensively by avoiding questionable conduct, ensuring that compliance with fiduciary rules is apparent and incontestable, and obtaining the consent of the principal or the court for potentially suspect transactions. This behavior is likely to increase the fiduciary's costs, reduce her productivity, and cause her to forego advantageous opportunities. In exchange, the principal has more confidence that the fiduciary will behave properly. To justify the special rules of fiduciary law in economic terms, the increase in the cost of fiduciary services must be more than offset by the gain to principals from the decrease in wrongdoing by fiduciaries.

A discussion of the scope of the corporate-opportunity doctrine helps to illustrate the balancing of benefits and costs. Generally, courts hold that an opportunity discovered by a person in her role as a fiduciary belongs to the principal. However, a fiduciary is not precluded altogether from participating in business for her own advantage. Opportunities that arise incidentally to, rather than directly from, her role as fiduciary do not belong to the principal, so the fiduciary can take advantage of them without violating the duty of loyalty. Thus, the scope of the fiduciary
duty turns on the distinction between "incidental" and "direct" opportunities.

[SEE ILLUSTRATION IN ORIGINAL]

Proximity of Opportunity to Agent's Role

The method of determining the optimal legal definition of corporate opportunity can be illustrated with Figure 5. The horizontal axis ranks opportunities according to their proximity to the fiduciary's role. Opportunities at the extreme left arise from activities near to the role of fiduciary, and opportunities at the extreme right arise from activities far from that role. The law chooses a point along this spectrum that separates opportunities belonging to the principal from those that the fiduciary may appropriate freely.

The principal gains if the fiduciary bears a broad duty, but the rate of gain diminishes as the duty broadens, so the marginal benefit curve slopes down. Similarly, the burden on the fiduciary increases with the scope of her duty of loyalty. This cost presumably increases at an increasing rate, so the marginal cost curve slopes up. The point of intersection of the marginal benefit and marginal cost curves indicates the optimal duty of loyalty. This point, denoted "optimum" in Figure 5, partitions opportunities into "direct" and "incidental" and maximizes the aggregate value of fiduciary transactions.

The optimal duty in Figure 5 narrows in scope and eventually disappears as the agent's cost curve shifts up or the principal's benefit curve shifts down. Whether the cost curve intersects the benefit curve determines if the existence of fiduciary duty is optimal. When the curves do not intersect, it is inefficient for the agent to assume the fiduciary obligation. n61

The location of the optimum depends upon the benefits and costs, which differ for each type of fiduciary relationship. For example, corporate directors can engage in self-dealing transactions that are forbidden for trustees. n62 The law relaxes the obligations of directors relative to trustees because if corporate directors were held to the same standard as trustees they would be less productive, and some might demand higher compensation or refuse to serve. n63 The bundle of duties and rights created by fiduciary law must be adjusted continually in response to changing circumstances and fresh litigation. n64 In order to obtain the best laws from an economic viewpoint, the adjustment in the scope of these duties should follow the logic of Figure 5.

Interpreting the benefit curve as a demand curve and the cost curve as a supply curve, the intersection point in Figure 5 indicates the equilibrium scope and competitive market price of one fiduciary duty in a free market for fiduciary services. If rational parties formed a perfect contract, they would stipulate the equilibrium value as the duty of loyalty's scope and pay the corresponding price. The optimal contract creates the largest possible surplus, which the parties can divide between themselves.

Whenever an optimal contract includes fiduciary duties, the economic character of the fiduciary relationship precludes the specification of exact duties. Instead, the fiduciary relationship is governed by broad principles of general application. Fiduciary relationships thus are bounded on one side by precise contracts. On the other side, where contractual liability ends, fiduciary relationships are bounded by punitive sanctions. The next two sections apply principal-agent theory to locate the most efficient place for these boundaries.

B. The Boundaries of Fiduciary Law

1. The Limits of Contract

The management or control of the principal's asset by the agent creates opportunities for appropriation, shirking, and inappropriate risk-taking. Yet if the agent buys the principal's asset, these opportunities disappear, thereby solving the incentive problem in a fiduciary relationship with regard to the duties of loyalty and care. In general, a contract that requires the agent to pay a fixed sum to the principal for those assets that the agent must manage or control removes the
incentive to appropriate and mismanage because the agent, not the principal, bears any loss. Examples of these transactions include procurement contracts requiring delivery of goods at a predetermined price, research and development contracts under which developers must supply new products at a stipulated price, and bond financing that permits corporations to keep all profits after paying the stipulated principal and interest to bondholders.

Under these contracts that provide perfect incentives, the fiduciary relationship is replaced by market exchange. Generally, however, this substitution is unfeasible or too costly. Agents usually lack the capital needed to purchase their principals' assets. In addition, this solution may be undesirable because it places all risk of loss upon the agent. If the agent is more averse to risk than the principal, efficient risk-bearing requires the principal to bear some risk of loss. However, assigning some risk of loss to the principal undermines the agent's incentives for honest and careful management. Thus, a trade-off exists in principal-agent contracts between risk-sharing and incentives for effort or appropriate risk-taking. Supplying the agent with an interest in the asset, the approach taken in profit-sharing contracts, provides a compromise solution.

Notice that profit sharing alone cannot overcome the deterrence problem. First, the problem of appropriation still exists. Because a share of the profit is less than one-hundred percent of it, conserving the profit and reporting truthfully pays the agent less than appropriating all of the profit and reporting falsely. Second, shirking is not deterred adequately. Under the Hand Rule, shirking occurs when additional effort by the agent costs less than the additional product the agent creates. In order for a profit-sharing contract to avoid incentives to shirk, the agent must receive the full product of her effort as payment. If the agent receives the full product of her effort, she will exert herself until the cost of her labor equals its benefit at the margin. Eliminating the incentive to shirk thus requires a payment schedule under which the agent receives no less than one-hundred percent of the marginal product of her effort. Finally, profit-sharing cannot eliminate inappropriate risk altogether. Elimination of inappropriate risk-taking requires the agent to pay a fixed sum to the principal and keep the entire portfolio, which amounts to the purchase of the asset by the agent. The impossibility of such a purchase necessitates the fiduciary relationship in the first place.

While the models of wrongdoing embodied in the decision trees assume that the principal observes nothing directly about the agent's activity, in reality the principal is able partially to observe the agent's activity. An efficient contract generally uses all the information available to the principal. Thus, the optimal contract may pay the agent a variable rate for observable effort and a fixed amount to cover unobserved effort. For example, a client who observes the hours her attorney spends arguing in court, but not the hours of research outside the courtroom, may pay her attorney an hourly rate for time spent in court and a contingency equal to a percentage of the award.

This section explains why optimal contracts often cannot avoid vague fiduciary principles. However, none of these arguments proposes to limit the ability of contracting parties to opt into or out of the fiduciary relationship or to modify their inevitably vague duties by agreement. While a discussion of whether and to what extent the law should restrict freedom of contract in fiduciary relationships is beyond the scope of this Article, in general, generous contractual freedom is preferable.

A specific limitation on contracts is important for existing fiduciary law. As explained, punishing the wrongdoer is sometimes necessary to create adequate incentives for compliance with fiduciary duties. The reluctance of courts to enforce penalty clauses thus limits the ability of parties to shape the fiduciary relationship by agreement. The calibration of punishment for breach of fiduciary duty is the subject of the next section.

2. Limits of Punitive Damages

Punishment for breach of fiduciary duty through the use of punitive damages is increasingly common. However, punitive damages remain unpredictable in the sense that their magnitude cannot be determined from knowledge of the law or the facts of the case.

If rules commended by the economic theory of deterrence were adopted, however, punitive damages could be more
predictable and effective. Deterrence requires the expected sanction for appropriating one dollar to equal a minimum of one dollar ($p \times m = 1$). Rewriting this equation as $m = 1/p$ indicates that deterrence requires the punitive multiple at least to equal the reciprocal of the enforcement error. n72 For example, if one-half of all wrongdoers are sanctioned, the punitive multiple required for effective deterrence equals two. n73

In general, the rule of the reciprocal sets ideal punitive damages at the level required both to offset enforcement error and to achieve deterrence. The punitive multiple in this equation should be interpreted as the sum of all elements of punishment. n74 Thus, the strongest case for punitive damages can be made when the enforcement error is large -- where there is a significant failure to sanction wrongdoing. n75 In contrast, according to the rule of the reciprocal, deterrence requires less punishment when the enforcement error is small. Thus, assuming that fiduciary law succeeds in its attempt to reduce enforcement error by inferring disloyalty from its appearance, punishment is unnecessary for deterrence.

Enforcement errors are not all alike. Rather, the judicial process must choose between two categories of errors: first, the error of "false negatives," failing to sanction wrongdoers; and second, the error of "false positives," sanctioning blameless actors. n76 Rules of legal decisionmaking embody a trade-off between these two errors. When the punitive element in the sanction is negligible, false positives are tolerable. In contrast, severe punishment makes false positives intolerable. Thus, requiring the defendant/fiduciary to disprove wrongdoing is tolerable when the sanction is disgorge and intolerable when the sanction is punitive damages or criminal punishment.

By shifting the burden of proof to the defendant, the special rules comprising the fiduciary's duty of loyalty increase the probability of false positives and decrease the probability of false negatives. This approach is both defensible and beneficial for several reasons. First, deterrence of disloyalty may be cheaper and more effective when a greater number of wrongdoers are punished, rather than when a smaller number are punished more severely. n77 Second, a risk-averse agent probably will require less compensation for a higher probability of a small sanction than a small risk of a large sanction. n78 Third, a risk-prefering wrongdoer will be deterred more by relatively certain, mild punishment than by relatively unlikely, severe punishment. n79 Fourth, arguably it is fairer to distribute smaller sanctions among a larger number of wrongdoers than to impose larger sanctions on a smaller number of wrongdoers. n80 Fifth, the effectiveness of a sanction is limited by the wealth of the fiduciary. Once a sanction exceeds this wealth, it has no further deterrent effect so long as the fiduciary is willing to escape liability through bankruptcy. Finally, principles of retributive justice require the severity of punishment to be commensurate with the seriousness of the wrong. Deterring fiduciary wrongdoing by sanctions alone would require large sanctions, which may violate conventional morality.

Furthermore, the disguised element of punishment for disloyalty often seems quite appropriate, as the following examples illustrate:

(i) A fiduciary is liable to indemnify her principal for any loss that exceeds the fiduciary's disgorged gain. Relative to perfect disgorgement, this liability is a punitive sanction. n81

(ii) When a fiduciary appropriates property that she could have obtained lawfully, either in the marketplace or through a voluntary bargain with the principal, the fiduciary's gain from appropriation is the savings of the cost of substitution. If the fiduciary is obliged to disgorge the entire profit resulting from the use of the appropriated asset, the difference between the gain disgorged and the cost of substitution is a punitive element. n82

(iii) A fiduciary may allocate valuable time or effort to effect and conceal her appropriation. In these circumstances, appropriation has an opportunity cost. If the gain is disgorged, the value of the opportunity cost -- the resources spent on appropriation -- also is lost. n83

(iv) A disloyal fiduciary may be deprived of her pro rata share of remuneration or profits. Older authorities permitted a disloyal partner to retain her share of the partnership profits, notwithstanding her attempt to
appropriate them all. n86 However, courts have begun to deprive disloyal partners and joint venturers of their share of the venture's profits, n87 explaining that imposing this punitive remedy deters disloyalty. n88

(v) A disloyal fiduciary probably will be terminated. Insofar as she invested significant effort and human capital in the relationship with the principal, these investments may not be transferred easily to another relationship.

(vi) A fiduciary's faithful fulfillment of her undertaking enhances her reputation, which may have significant economic value. Conversely, a finding of disloyalty may affect adversely the fiduciary's reputation, which may result in significant economic losses. n89

(vii) Disloyalty brings moral condemnation. n90 The ponderous language of moral censure in fiduciary cases n91 can wound the defendant. [*1074] "[A]n allegation of breach of fiduciary duty carries with it the stench of dishonesty -- if not of deceit, then of constructive fraud." n92

CONCLUSION

Some commentators consider loyalty to be the essence of the fiduciary relationship. n93 This view, supported by the language in many cases, suggests that the fiduciary must subordinate her own interests to those of the beneficiary. n94 Loyalty may seem inconsistent with the common-sense belief, firmly grounded in economics, that people act from self-interest in business. Nevertheless, this Article has shown that the duty of loyalty, far from violating the postulate of self-interested behavior, is based upon it. The duty of loyalty must be understood as the law's attempt to create an incentive structure in which the fiduciary's self-interest directs her to act in the best interest of the beneficiary. When a principal relinquishes management or control over an asset, the agent's gain from appropriating the asset or its value is large, and the probability of proving appropriation in court is small. Disgorgement, the usual remedy for misappropriation, merely aims to return the agent to a situation similar to the one that she would have been in without appropriation. Low enforcement probability and mild sanctions create a deterrence problem. Fiduciary law ameliorates this problem by presuming appropriation in situations with its appearance. Thus, the economic character of the fiduciary relationship embodies a deterrence problem for which the duty of loyalty provides a special remedy. In addition, disgorgement remedies in fact impose some element of punishment that helps overcome any remaining [*1075] errors in detecting wrongdoing.

In contrast, shirking the management of an asset is not as profitable as appropriating it. As a result, the deterrence problem addressed by the duty of care can be solved without special remedies. Deterrence is effected merely because compensatory damages leave the agent in a worse position than if she had not breached her duty of care. This fact ameliorates the problem of shirking without wholly eliminating it.

The typical plaintiff might wish to prove the existence of a fiduciary relationship in order to bring her dispute within the compass of the duty of loyalty and thereby reduce her burden of proof. A court considering such a case must decide whether to infer wrongdoing from its appearance. From an economic viewpoint, this question should be answered by reference to the relevant market for agents. Burden shifting increases the principal's confidence in the fiduciary, but at the cost of requiring the fiduciary to make a showing that she has conformed with her legal duties. If the gain in confidence more than offsets the increased burden, the extension of a component of the duty of loyalty to the relationship will yield a mutually advantageous economic surplus.

Legal Topics:

For related research and practice materials, see the following legal topics:

FOOTNOTES:

n2 For example, in LAC Minerals Ltd. v. International Corona Resources Ltd., 61 D.L.R.4th 14 (Can. 1989), the court stated:

There are few legal concepts more frequently invoked but less conceptually certain than that of the fiduciary relationship. In specific circumstances and in specific relationships, courts have no difficulty in imposing fiduciary obligations, but at a more fundamental level, the principle on which that obligation is based is unclear. Indeed, the term "fiduciary" has been described as "one of the most ill-defined, if not altogether misleading terms in our law" . . .

Id. at 26 (Forrest, J.) (quoting P. Finn, Fiduciary Obligations 1 (1977)); see also Patton v. Shelton, 328 Mo. 631, 645, 40 S.W.2d 706, 712 (1931) (fiduciary duty difficult to define); Wells v. Shriver, 81 Okla. 108, 134, 197 P. 460, 484 (1921) (definition of fiduciary relationship matter of controversy); DeMott, Beyond Metaphor: An Analysis of Fiduciary Obligation, 1988 Duke L.J. 879, 879 (fiduciary obligation one of most elusive concepts in Anglo-American law).


n3 See, e.g., Patton, 328 Mo. at 645, 40 S.W.2d at 712 (equity courts deliberately have refrained from defining scope of fiduciary duties to avoid excluding possible new cases); Mobil Oil Corp. v. Rubenfeld, 72 Misc. 2d 392, 399-400, 339 N.Y.S.2d 623, 632 (1973) (fiduciary relationship embraces both "technical fiduciary relations and those informal relations which exist whenever one man trusts in and relies upon another"). For Canadian examples, see, e.g., LAC Minerals, 61 D.L.R.4th at 61 (categories of relationships giving rise to fiduciary duties not closed nor do traditional relationships invariably give rise to fiduciary obligations); Guerin v. Canada, 13 D.L.R.4th 321, 341 (Can. 1984) ("The categories of fiduciary, like those of negligence, should not
be considered closed.


While previous articles on the fiduciary relationship have referred to the principal-agent model or drawn upon it implicitly, none has done so systematically. See, e.g., Anderson, supra note 2; Bishop & Prentice, supra note 2; Brudney & Clark, A New Look at Corporate Opportunities, 94 Harv. L. Rev. 998 (1981); Clark, Agency Costs Versus Fiduciary Duties, in Principals and Agents: The Structure of Business 55, 71-79 (J. Pratt & R. Zeckhauser eds. 1985); Davis, supra note 2; DeMott, supra note 2; Flannigan, supra note 2; Frankel, supra note 2; Weinrib, supra note 2.

n5 In this model, "principal" refers to the beneficiary, and "agent" refers to the fiduciary. Thus, this Article uses the terms "agent" and "principal" as defined in economics, see Pratt & Zeckhauser, Principals and Agents: An Overview, in Principals and Agents: The Structure of Business 1-36 (J. Pratt & R. Zeckhauser eds. 1985); Stiglitz, supra note 4, not as used in law. See sources cited in note 2 supra (providing legal definition of "agent" and "principal"). A leading English legal text defines the fiduciary relationship as a "relationship which exists between two persons, one of whom expressly or impliedly consents that the other should act on his behalf, and the other of whom similarly consents to act or so acts." F. Reynolds, Bowstead on Agency 1 (15th ed. 1985).

n6 The asset may take various forms, including cash, stock, land, a patent or copyright, valuable information, a business opportunity, or a business enterprise.


n9 See, e.g., Hoover, supra note 2, at 11 ("[T]he beneficiary, being on the outside, cannot know everything that is going on. Moreover, the beneficiary is off his guard."); Weinrib, supra note 2, at 4 ("The control of the principal is necessarily attenuated, for the exercise of that control would necessitate his intervention in the
details of the transaction and would stultify the very reason for which the agency was instituted.”).

n10 See, e.g., Anderson, supra note 2, at 744, 749-50 (monitoring procedures are both costly and inconsistent with specialization); Frankel, supra note 2, at 812-15 (if principal were expert and could monitor agent's actions, she would not have sought agent in first place); Hoover, supra note 2, at 11 (“What practical good would the relation be if the beneficiary had to be present to watch every move?”). The principal may monitor the agent to some extent, for example, by appointing outside directors or hiring independent auditors and inspectors. In pooling and risk-sharing situations, where the agent controls the assets of many principals, the cost to each principal of directly monitoring the agent may exceed the benefit of preventing exploitation. If so, no individual principal will have an incentive to monitor the agent. This is the case with shareholders of public companies. See, e.g., Anderson, supra note 2, at 778-80 (even shareholder with substantial stake in corporation may not find supervision worthwhile because she cannot capture most of benefit of her supervisory efforts); Clark, supra note 4, at 77 (managers of public corporations have informational advantage over widely dispersed shareholders); Davis, supra note 2, at 6 (transaction costs and free-rider problems will cause level of joint activity to be less than optimal).

n11 See text accompanying notes 9-10 supra.

n12 Figure 1a regroups the numbers from the agent's report to emphasize the principal's dilemma. The principal cannot distinguish between the diagonal cells with the same value.

Figure 1a: Reported Asset Value

<table>
<thead>
<tr>
<th>State of Nature</th>
<th>Other-regarding</th>
<th>Self-regarding</th>
</tr>
</thead>
<tbody>
<tr>
<td>good</td>
<td>2</td>
<td>1/2</td>
</tr>
<tr>
<td>bad</td>
<td>1/2</td>
<td>0</td>
</tr>
</tbody>
</table>

n13 For example, in the corporate context, empirical research demonstrates the infrequency of derivative actions against corporate directors. See Romano, The Dynamics of Shareholder Litigation: An Empirical Study (1990) (unpublished manuscript) (on file at New York University Law Review). Although this phenomenon may be due to the absence of wrongdoing, it is more likely a result of problems of proof. Id.

n14 The disgorgement remedy is effected through the equitable remedies of constructive trust, tracing, and accounting; requiring the fiduciary to indemnify the agent for losses; setting aside an improper transaction or objectionable act; granting injunctive and declaratory relief; and awarding prejudgment interest. Each of these remedies is designed to deprive the fiduciary of all gains resulting from her wrongful conduct. For a detailed discussion of fiduciary remedies, see J. Shepherd, supra note 2, at 75, 82 n.122, 116-21, 174, 182-83.

n15 See Wards Cove Packing Co. v. Atonio, 490 U.S. 642, 657 (1989) (plaintiff must show that specific or particular employment practice has created disparate impact under attack); Reliance Life Ins. Co. v. Burgess, 112 F.2d 234, 237-38 (8th Cir.) (burden of proof rests with party "who will be defeated if no evidence relating to the issue is given on either side"), cert. denied, 311 U.S. 699 (1940); Restatement (Second) of Torts §§ 328A, 433B
n16 In other words, the amount by which the wrongdoer's sanction exceeds her gain from misappropriation constitutes "punishment." Note that this definition of punishment measures its extent relative to the injurer's gain from wrongdoing, whereas liability law more often measures the extent of punishment relative to the victim's loss. "Punitive damages" usually refers to damages exceeding the amount needed to compensate the victim. To distinguish the two meanings, this Article uses "superdisgorgement" for liability exceeding the baseline of the injurer's profit from the wrong, and "supercompensation" for liability exceeding the baseline of the victim's loss from the wrong.

n17 To illustrate, suppose that a contract calls for an agent to receive a base wage of one-tenth, plus 20% of the product in a good state. Not appropriating in a good state thus pays the agent three-tenths (the wage of one-tenth plus 20% of the product of 1). Appropriating pays the agent 1.5 (a wage of one-tenth plus wrongful appropriation of 1.4). Furthermore, assume that at times the principal can test the accuracy of the agent's report, and that $p$ denotes the probability of detecting a false report. When detected, the appropriation must be disgorged, but the agent bears no additional costs. Figure 1b summarizes the agent's payoffs under these assumptions. In a good state, the agent will do at least as well by appropriating rather than conserving so long as $p$ is less than 1. Thus, appropriation "dominates" conservation for all $p < 1$. In a bad state, appropriating does not pay because it is always detected and must be disgorged.

![Figure 1b: Expected Payoff To Agent When Appropriation Is Observed Stochastically and Punished by Disgorgement](image)

n18 The simplifying assumption of risk neutrality is implicit in this equation. If the wrongdoer were averse to risk, a smaller sanction would deter. If the wrongdoer were a risk preferrer, deterrence would require a larger sanction.


Other rules of fiduciary conduct include, for example, the rule against conflicts of duty, the rule against self-interested transactions, the rule against bribes and secret commissions, the rule against purchasing trust property, and the rule regarding fiduciary opportunities. These rules are discussed in some detail in M. Ellis, supra note 2, at 1-4 to 1-8, 2-2 to 2-16, 3-8 to 3-21, 4-2 to 4-15, 5-3 to 5-18, 6-1 to 6-8, 7-2 to 7-6, 8-20 to 8-23, 9-6 to 9-19, 12-2 to 12-10, 15-3 to 15-29; P. Finn, supra note 2, at 13-16, 23-25, 27-31; J. Shepherd, supra note 2, at 35-42, 47-49, 125-46, 155-62, 164, 176-78, 254-62.

n20 See, e.g., *Mercury Bay Boating Club v. San Diego Yacht Club*, 76 N.Y.2d 256, 270, 557 N.E.2d 87, 95,
 Courts long have recognized that an agent likely will act in her self-interest to the detriment of the principal and that deterrence is the rationale underlying the duty of loyalty. See, e.g., Michaud v. Girod, 45 U.S. (4 How.) 503, 554 (1846) (duty of loyalty "provides against the probability in many cases, and the danger in all cases, that the dictates of self-interest will exercise a predominant influence, and supersede that of duty"); Dutton v. Willner, 52 N.Y. 312, 319 (1873) (duty of loyalty "founded upon considerations of policy . . . not merely to afford a remedy for discovered frauds, but to reach those which may be concealed"); Rice v. Davis, 136 Pa. 439, 442, 20 A. 513, 514 (1890) ("One who has the power will be too readily seized with the inclination to use the opportunity for serving his own interests at the expense of the principal.").

n21 See, e.g., Kinney v. Lindgren, 373 Ill. 415, 422, 26 N.E.2d 471, 474 (1940) (unless there is express authority to do so, trustee as fiduciary can neither sell trust property to himself nor buy property from the trust for himself).

n22 See, e.g., Carr v. National Bank & Loan Co., 167 N.Y. 375, 379, 60 N.E. 649, 650 (1901) (fiduciary failed to disclose that securities purchased were those of bank of which he was president and manager), aff'd, 189 U.S. 426 (1903).

n23 See, e.g., Mercury Bay, 76 N.Y.2d at 270, 557 N.E.2d at 95, 557 N.Y.S.2d at 859 (reaffirming traditional rule of Meinhard); Meinhard, 249 N.Y. at 464, 164 N.E. at 546 (law does not inquire into fairness of transaction in defense of self-dealing); Wendt, 243 N.Y. at 444, 164 N.E. at 304 (inquiry into fairness of transaction "stops . . . when the relation [self-dealing] is disclosed"); see also Aberdeen Railway Co. v. Blaikie Bros., 1 Macq. 461, 461, 471 (H.L. Sc. 1854) (fiduciary may not put herself in position where there is reasonable possibility her interest and duty may conflict).


n25 Corporate directors in the United States may be able to justify a self-interested transaction by proving that it was fair. See, e.g., Cal. Corp. Code § 310(a)(3) (Deering 1977) (transaction not voidable if "person asserting the validity" can prove "contract of transaction was just and reasonable as to the corporation at the time it was authorized, approved or ratified"); Del. Code Ann. tit. 8, § 144 (1985) (transaction not voidable "solely" for self-interest if "contract or transaction is fair to the corporation as of the time it is authorized, approved or ratified"); see also Marsh, supra note 2, at 43-48 (tracing development of American corporate law regarding fairness of transaction). See generally Principles of Corporate Governance: Analysis and Recommendations (Tent. Draft No. 5, 1986). For an economic analysis, see Davis, supra note 2, at 49-52 (showing divergence of corporate law from trust and agency law); Eisenberg, supra note 24, at 998-1000 (offering rationale for fairness test for interested transactions).

n26 See notes 19-23 supra and 27-32 infra.
n27 See, e.g., Selwyn & Co. v. Waller, 212 N.Y. 507, 511, 106 N.E. 321, 322 (1914) (rule against secret profits in joint venture depends on reciprocal good faith); see also Parker v. McKenna, L.R.10 Ch. App. 97, 124-25 (Eng. 1874) ("[N]o agent, in the matter of his agency, can be allowed to make any profit without the knowledge and consent of his principal . . . . "). For a discussion of the rule against secret profits in Canadian law, see generally M. Ellis, supra note 2.

n28 See, e.g., Ungrich v. Ungrich, 141 A.D. 485, 489-91, 126 N.Y.S. 419, 422-24 (1910) (sale of property), aff'd mem., 207 N.Y. 662, 100 N.E. 1134 (1912); see also A. Scott, supra note 1, § 216.3 (consent valid only if beneficiary has knowledge of all relevant facts).

n29 See, e.g., Hoxsey Hotel Co. v. Farm & Home Sav. & Loan Ass'n, 349 Mo. 880, 888, 163 S.W.2d 766, 771 (1942) (agent has burden of proving full disclosure of every material fact bearing on transaction); Wendt v. Fischer, 243 N.Y. 439, 443, 154 N.E. 303, 304 (1926) ("If dual interests are to be served, the disclosure to be effective must lay bare the truth, without ambiguity or reservation, in all its stark significance."); see also Restatement (Second) of Trusts § 170(2) (1957) (stating duty to communicate all material facts).


n31 See, e.g., notes 24-25 supra (discussing application of "fairness test" in corporate fiduciary law).

n32 See, e.g., City Bank Farmers Trust v. Cannon, 291 N.Y. 125, 132, 51 N.E.2d 674, 676 (1943) (if conflict of interest is discovered, transaction is voidable without further inquiry); see also A. Scott, supra note 1, § 170, at 312 (without beneficiary's consent, transaction voidable even though fiduciary acted in good faith and transaction was fair and reasonable).

n33 See text accompanying notes 81-92 infra.

n34 See text accompanying notes 11-12 supra.

n35 Figure 2 reduces the fiduciary's choice to reasonable effort or shirking, but in reality many possible levels of effort may be exercised. Choice of continuous levels of effort is discussed in note 67 infra.

n36 See text accompanying notes 11-12 supra.

n37 As illustrated in Figure 1a in the duty-of-loyalty context, the principal's dilemma prevents distinction between diagonal cells with the same value. See note 12 supra.

n38 The standard of effort required of a fiduciary usually is a matter of contract, whether express or implied. The standard of care and diligence required of a trustee in administering a trust traditionally is that of a person of ordinary prudence in managing her own affairs. This standard, applied to both paid and unpaid trustees, is objective and, at times, rigorous. See Fales v. Canada Permanent Trust Co., 70 D.L.R.3d 257, 267-68 (Can. 1976); Restatement (Second) of Trusts § 174 (1957). But some courts have held that where a trustee is a paid
professional -- such as a lawyer or an accountant -- she may be held to a higher standard of care. See, e.g., Bartlett v. Barclays Bank Trust Co., 1 Ch. 515, 525 (Eng. 1980) (professional trustee advertising or holding herself out as having special skill or knowledge in trust management held to higher standard).

n39 See United States v. Carroll Towing Co., 159 F.2d 169, 173-74 (2d Cir. 1947) (use of one person to do two jobs negligent); The T.J. Hooper, 60 F.2d 737, 739 (2d Cir.) (finding liability where radio receiving sets could be procured at small cost), cert. denied, 287 U.S. 662 (1932). For the first analytical formulation of the economic effect of this rule, see Brown, Toward an Economic Theory of Liability, 2 J. Legal Stud. 323 (1973).

n40 Economists commonly define efficiency as follows: "A given economic arrangement is efficient if there can be no rearrangement which will leave someone better off without worsening the position of others." R. Musgrave & P. Musgrave, Public Finance in Theory and Practice 55 (4th ed. 1984). Much of microeconomics and cost-benefit analysis is an exploration of the marginalist conditions for efficiency. See generally E. Mishan, Cost-Benefit Analysis (1976).

n41 The vertical distance between the two lines in Figure 3 measures the difference between costs and benefits of effort. The shaded triangle in Figure 3 measures the cumulative vertical distance between the two lines as effort falls from $x^{<*>}$ to $x^1$.

n42 Note that Figure 1 is simplified in that it implicitly assumes that self-dealing does not consume the agent's resources or opportunities.

n43 See note 16 supra (explaining relationship between compensation and disgorgement).


n45 To illustrate, suppose that 15 farmers suffer fires with a monetary value of $60 per fire, but that only 10 farmers would have been harmed if the locomotive were equipped with a filter. Full compensation for their actual harm would require each of the 15 farmers to receive $60 in damages. In contrast, perfect compensation for the increase in expected harm caused by the railroad's negligence would require each of the farmers to receive $20. Damages are discounted by two-thirds, the fraction of accidents that would have occurred even if the filter had been installed.

n46 But see Sindell v. Abbott Labs., 26 Cal. 3d 588, 611-12, 607 P.2d 924, 937, 163 Cal. Rptr. 132, 145 (allowing plaintiff to sue using theory of market-share liability), cert. denied 449 U.S. 912 (1980); see also Shavell, Uncertainty Over Causation and the Determination of Civil Liability, 28 J.L. & Econ. 587 (1985) (to reduce accident risks appropriately parties should face probability-discounted liability).

n47 Notice the difference in remedies for disloyalty and shirking. Asymmetrical information makes both disloyalty and shirking difficult to prove. In most instances, fiduciary law relieves the principal of the burden of proving disloyalty; thus, the law's ideal sanction should contain no element of punishment. In contrast, the principal bears the burden of proving the fiduciary's carelessness, and the law's ideal sanction should and does contain an element of punishment, relative to the baseline of perfect disgorgement.

n48 See note 38 supra.

n49 See, e.g., Panter v. Marshall Field & Co., 646 F.2d 271, 293 (7th Cir.) ("Directors of corporations discharge their fiduciary duties when in good faith they exercise business judgment in making decisions regarding the corporation."); cert. denied, 454 U.S. 1092 (1981); see also M. Eisenberg, The Duty of Care of Corporate Directors and Officers (mimeo, 1990); cases discussed in note 58 infra.

n50 See, e.g., Hoye v. Meek, 795 F.2d 893, 895 (10th Cir. 1986) (investment violated trust company's policy prohibiting unnecessary risks).


n52 A survey of portfolio theory is beyond the scope of this Article, although where relevant the central conclusions of this theory will be summarized. For a more complete account of portfolio management, see, e.g., R. Radcliffe, Portfolio Management in Investment Concepts, Analysis, and Strategy ch. 22, at 648-66 (1982).

n53 The "law of large numbers" provides that random errors tend to cancel each other as the sample grows larger. See M. DeGroot, Optimal Statistical Decisions 203-04 (1970).

n54 See R. Radcliffe, supra note 52, at 160-63 (theory of efficient diversification analyzes correlation coefficients).

n55 See id. at 172-208 (analyzing risk-return concept).

n56 Id. at 173.

n57 The fiduciary may take large risks with the intention of imposing on the principal the extraordinary losses that might be realized, while secretly intending to appropriate any extraordinary profits that are realized.

n58 For a classic formulation of the business judgment rule, see Heinemann v. Heard, 50 N.Y. 27, 35 (1872) ("An agent is bound . . . to such skill as is ordinarily possessed by persons of common capacity engaged in the same business."). In more modern corporate settings, the business judgment rule creates "a presumption that in making a business decision, the directors of a corporation acted on an informed basis in good faith and in the
honest belief that the action was taken in the best interests of the company." Aronson v. Lewis, 473 A.2d 805, 812 (Del. 1984); see also Pogostin v. Rice, 480 A.2d 619, 627 (Del. 1984) (stockholder allegations of futility of demand for corrective measures must overcome business judgment presumption); Gimbel v. Signal Cos., 316 A.2d 599, 609 (Del. Ch.) (business judgment rule weighs in favor of directors' decision to sell assets unless plaintiffs can prove fraud or clearly inadequate sales price), aff'd, 316 A.2d 619 (Del. 1974).

n59 An excellent distillation of the case law, which amply illustrates its complexity, is found in Brudney & Clark, supra note 4, at 1006-10.


n61 Specifically, as the agent's marginal cost curve shifts up, or as the principal's marginal benefit curve shifts down, the intersection of the curves moves to the left and the optimal duty of loyalty narrows in scope. When the intersection of the curves reaches the vertical axis, or when the agent's compensation curve lies above the principal's benefit curve at every point on the graph, the optimal relationship is not fiduciary.

n62 See, e.g., Puma v. Marriott, 283 A.2d 693, 695-96 (Del. Ch. 1971) (business judgment rule protects contract between corporation and inside director when approved by disinterested outside directors). For a discussion of the differences in the legal treatment of self-interested transactions by corporate directors as contrasted with trustees, see Morrissey v. Curran, 650 F.2d 1267, 1274 (2d Cir. 1981) (discussing question of whether union officers are subject to strict standard of trustees or less rigorous standard of corporate directors).

n63 Holding trustees to higher standards than directors makes economic sense because the same legal rule that imposes a light burden on a trustee would impose onerous restrictions upon a director.

n64 In the absence of explicit contract terms, rational parties at the time of contract formation would prefer for courts to strike such a balance in future disputes between them.

n65 For a theorem on the form of perfect principal-agent contracts, see Shavell, Risk Sharing and Incentives in The Principal and Agent Relationship, 10 Bell J. Econ. 55, 57-65 (1979) (study of risk sharing in agency context).

n66 See id.

n67 This conclusion can be illustrated with Figure 3. If the agent receives 100% of the product, the principal's marginal benefit curve becomes the agent's marginal product curve. The line from the vertical axis to $x[2]$ shows the agent's marginal product, which decreases as effort increases. If the agent receives 100% of the product, then the marginal product line would correspond to the agent's payoff, and the agent would exert herself until marginal cost equals marginal product, which occurs at the efficient point $x^*$. If, however, the agent receives less than 100% of the product, the agent's payoff would be represented by a line below the marginal product line. Rotating down the marginal product line drawn in Figure 3 reflects the fiduciary's reduced share of product. Consequently, the agent's effort falls from $x^*$ to $x[1]$. At $x[1]$, the marginal cost of effort equals the agent's share of the marginal product. The distance $x^*-x[1]$ measures the extent of rational shirking in this
profit-sharing contract.

n68 See Arrow, The Economics of Agency: An Overview, in Principals and Agents in The Structure of Business 37, 38-45 (J. Pratt & R. Zeckhauser eds. 1985) (explaining this theorem in detail). Since the optimal contracts identified by economists in principal-agent problems respond to all the observable variables, these contracts tend to be more complex than actual contracts.

n69 See id. at 46.

n70 This question is the subject of Jason Jonston's paper, entitled Opting In and Opting Out: Bargaining for Fiduciary Duties in Cooperative Ventures, which was presented at a European Law and Economics Association meeting in Copenhagen in August 1991.

n71 See Schoenholtz v. Doniger, 657 F. Supp. 899, 914 (S.D.N.Y. 1987) (citing numerous state court decisions holding that beneficiary may recover punitive damages against trustee for breach of trust in cases of extreme fiduciary disloyalty); see also G. Bogert & Bogert, supra note 8, § 862, at 41 (punitive damages may be awarded where malice or fraud involved).

n72 See generally Cooter, Punitive Damages: When and How Much?, 40 Ala. L. Rev. 1143 (1989) (if punitive damages to be awarded, punitive multiple should be set equal to reciprocal of enforcement error).

n73 A small modification of the rule of the reciprocal takes account of both false positives and false negatives. In general, \( p \) represents the probability of a true positive or accurate enforcement. Let \( q \) represent the probability of a false positive. Given a wage of \( w \), the expected value of appropriating \( y \) is given by \( EV(\text{appropriate}) = w + y - pmy \), and the expected value of conserving is given by \( EV(\text{conserve}) = w-qmy \). These values balance for the marginal person: \( EV(\text{appropriate}) = EV(\text{conserve}) \) which logically implies \( w + y - pmy = w-qmy \) and \( m = \frac{1}{p-q} \). Thus, the punitive multiple equals the reciprocal of the difference in the probability of a true positive and a false positive.

n74 This sum includes any implicit punishments. See text accompanying notes 81-92 infra.

n75 For example, carefully concealed self-dealing by the fiduciary may have a small probability of detection. Moreover, any implicit punishment in the event of detection will be small so long as self-dealing did not use defendant's resources and she is unconcerned with her reputation. For a more systematic discussion of other related considerations, see text accompanying notes 81-92 infra.

n76 See, e.g., R. Pindyck & D. Rubinfeld, Econometric Models and Economic Forecasts 39-40 (2d ed. 1981) (discussing tradeoff between "false positives" and "false negatives," defined by statisticians as Type II and Type I errors respectively if defendants are presumed to be blameless).

n77 In addition, the responsiveness of fiduciaries to these sanctions may differ depending upon the magnitude and probability of punishment. Although increasing the probability of punishment requires more lawsuits, increasing the severity of punishment requires longer suits and increases the difficulty in collecting judgments. The classic economic analysis argues for severe fines to be applied with small probability. See, e.g.,
n78 See Polinsky & Shavell, The Optimal Tradeoff Between the Probability and Magnitude of Fines, 69 Am. Econ. Rev. 880, 881, 887-88 (1979) (when individuals are risk-averse, high probability of small sanction may be more efficient).


n80 Given that mistakes are inevitable and principals cannot monitor directly their agent's behavior, the unjust burden of erroneous liability is less when sanctions are smaller. There are many lines of thought which argue that such burdens should be distributed equally. A sophisticated argument for distributing social burdens equally was developed by utilitarian tax philosophers. See, e.g., H. Graves, The Tax Philosophers 26-38 (D. Curran ed. 1974) (discussing J.S. Mill's philosophy of taxation).

n81 See, e.g., Rippey v. Denver U.S. Nat'l Bank, 273 F. Supp. 718, 734 (D. Colo. 1967) (plaintiff entitled to difference between sale price and price that would have been obtained had trustee acted appropriately); see also W. Fratcher & A. Scott, The Law of Trusts § 208.6, at 273 (4th ed. 1988) (trustee liable for difference between amount received and amount she should have received). For an application of this principle to Canadian law, see, e.g., Maghun v. Richardson Sec. of Can., 34 D.L.R.4th 524, 536, 541 (Ont. C.A. 1986) (profits reasonably expected as appropriate measure of compensation).

n82 For example, suppose the fiduciary sells the principal's asset for $60, which she then delivers to the principal in order to obtain a secret commission of $20. If the court finds that an alternative buyer would have paid $100, it may require the fiduciary to pay damages of $40 to indemnify the principal, whereas perfect disgorgement damages would equal only $20.

n83 For example, a fiduciary appropriates $100 from her principal instead of borrowing it from a bank at 10% interest. The fiduciary invests the $100 for a year and makes a profit of $25. The fiduciary's actual gain from disloyalty is not the entire $25 profit, but only the $10 of interest she would have had to pay if she had borrowed funds legally. If the fiduciary is required to disgorge the entire profit of $25, she is penalized $15. As another example, suppose the fiduciary sells a service for $200 which she provides by using secretly capital equipment that belongs to the principal, which the fiduciary could have rented for $125. The court may force the fiduciary to disgorge $200, even though perfect disgorgement damages equal $125.

Where a fiduciary's profits are produced by a combination of misappropriation and other factors, such as the fiduciary's own assets, effort, or skill, the profits generally are apportioned. The fiduciary is liable only for the portion of the profits attributable to the misappropriated property. See, e.g., Ball v. Hopkins, 268 Mass. 260, 267, 167 N.E. 338, 342 (1929) (trustee must account for all profits resulting from misappropriation); G. Bogert & G. Bogert, The Law of Trusts and Trustees § 862, at 46 (2d ed. 1982); see also Edge v. Jarvis, 1 W.L.R. 815, 820-21 (Can. 1958) (trustee may not make profit out of her trust). Similarly, a gain that must be disgorged is calculated net of reasonable expenses incurred by the fiduciary. See, e.g., Dutton v. Willner, 52 N.Y. 312, 322 (1873) (agent entitled to credit for all necessary payments); see also 3 Am. Jur. 2d Agency § 232 (1986) (courts divided as to whether principal is entitled to gross or net profits). But see Tobin Grocery Co. v. Spry, 204 Cal. 247, 249, 267 P. 694, 695 (1928) (agent liable for all profits without deduction for losses). For Canadian

n84 For example, a fiduciary may invest $100 in labor to obtain a secret commission of $200, and this investment may preclude obtaining a public commission of $150. Thus perfect disgorgement damages equal $50, yet the court may require the fiduciary to disgorge $200. Disgorgement involves a punitive element to the extent that the fiduciary cannot retain the remuneration, opportunities, or resources involved in self-dealing.


n86 See, e.g., Shulkin v. Shulkin, 301 Mass. 184, 193, 16 N.E.2d 644, 651 (1938) (partners left where they would have been had no wrongdoing taken place). For a Canadian example, see McLeod & More v. Sweezey, 2 D.L.R. 145 (Can. 1944) (disloyal agent receives pro rata share of profits).


n88 See LAC Minerals, 61 D.L.R.4th at 47-48 ("If by breaching an obligation of confidence one party is able to acquire an asset entirely for itself, at a risk of only having to compensate the other for what the other would have received if a formal relationship between them were concluded, the former would be given a strong incentive to breach the obligation and acquire the asset. . . . The imposition of a remedy which restores an asset to the party who would have acquired it but for a breach of fiduciary duties or duties of confidence acts as a deterrent to the breach of duty and strengthens the social fabric those duties are imposed to protect.")

n89 See Goetz & Scott, Principles of Relational Contracts, 67 Va. L. Rev. 1089, 1089-1115 (1981) (deterrent effect of damage to reputation most effective when business relationships are long-term and participants are well-known); see also Farnsworth, The Past of Promise: A Historical Introduction to Contract, 69 Colum. L. Rev. 576, 604-05 (1969) (it may be economically dangerous to be dishonest).

n90 Disloyalty may be viewed as immoral for three reasons: first, it is a nonconsensual appropriation of assets, analogous to theft; second, it is an exploitation of the principal's reliance, trust, and vulnerability, analogous to fraud; and third, it has the effect of undermining the vitality and utility of fiduciary relationships, which results in harm to society as a whole. See Anderson, supra note 2, at 746-47.
n91 In *Meinhard v. Salmon*, 249 N.Y. 458, 164 N.E. 545 (1928), Judge Cardozo wrote: Many forms of conduct permissible in a workaday world for those acting at arm's length are forbidden to those bound by fiduciary ties. A trustee is held to something stricter than the morals of the market place. Not honesty alone, but the punctilio of an honor the most sensitive, is then the standard of behavior. As to this there has developed a tradition that is unbending and inveterate. Uncompromising rigidity has been the attitude of courts of equity when petitioned to undermine the rule of undivided loyalty by the "disintegrating erosion" of particular exceptions. Only thus has the level of conduct for fiduciaries been kept at a higher level than that trodden by the crowd. It will not consciously be lowered by any judgment of this court.

*Id. at 464, 164 N.E. at 546* (citation omitted).


n93 See, e.g., A. Scott, *On Trusts* § 170, at 311 (4th ed. 1987) ("The most fundamental duty owed by the trustee to the beneficiaries of the trust is the duty of loyalty."); J. Shepherd, supra note 2, at 48 ("The duty of loyalty is, of course, the essence of the fiduciary relationship . . . [or they are] alternate descriptions of the same thing."); Scott, *The Fiduciary Principle*, 37 Calif. L. Rev. 539, 541 (1949) (all fiduciaries subject to principle of loyalty).

n94 See, e.g., *Bayer v. Beran*, 49 N.Y.S.2d 2, 5 (1944) ("The fiduciary has two paramount obligations: responsibility and loyalty . . . . The fiduciary must subordinate his individual and private interests to his duty to the corporation whenever the two conflict . . . ."); *City Bank Farmers Trust Co. v. Gannon*, 291 N.Y. 125, 131-32, 51 N.E.2d 674, 675-76 (1943) ("Undivided loyalty is the supreme test, unlimited and unconfined by the bounds of classified transaction . . . . [T]he rule is designed to obliterates all divided loyalties which may creep into a fiduciary relationship.").