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THE ECONOMICS OF LEGAL DISPUTES OVER THE
OWNERSHIP OF WORKS OF ART
AND OTHER COLLECTIBLES

*William M. Landes and Richard A. Posner**

I. INTRODUCTION

Economic analysts of law have paid a great deal of attention to the creation, definition, protection, and voluntary and involuntary transfer of property rights both tangible and intangible, but relatively little attention to the issues that arise when a dispute over the ownership of property is rooted in genuine uncertainty about who owns a particular piece of property. The legal doctrines that bear on this question include the doctrines of adverse possession, good faith purchasers, abandonment, finders, and laches, among others. There has been some economic analysis of the question¹ and there is a vast legal literature, but there is surely room for additional economic analysis.

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¹ See William M. Landes and Richard A. Posner, "Salvors, Good Samaritans, and Other Rescuers: An Economic Study of Law and Altruism," 7 *Journal of Legal Studies* 83, 105-06 (1978); Harold R. Weinberg, "Sales Law, Economics, and the Negotiability of Goods," 9 *Journal of Legal Studies* 569 (1980); Alan Schwartz and Robert E. Scott, *Commercial Transactions* 476-479 (1982); Richard A. Epstein, "Past and Future: The Temporal Dimension in the Law of Property," 64 *Washington University Law Quarterly* 667, 674-693 (1986); Robert C. Ellickson, "Adverse Possession and Perpetuities Law: Two Dents in the Libertarian Model of Property Rights," 64 *id.* 723, 725-734; Saul Levmore, "Variety and Uniformity in the Treatment of the Good-Faith Purchaser," 16 *Journal of Legal Studies* 43 (1987); Richard A. Posner, *Economic Analysis of Law* 79-81 (4th ed. 1992); Steven Shavell, "The Acquisition and Transfer of Property" (unpublished, Harvard Law School, 1996).

A. *Why Art?*

We limit our consideration to disputes over the ownership of works of art, broadly defined to include paintings, sculptures, rare books and manuscripts, archaeological artifacts, early musical instruments, other antiques (silverware, jewelry, etc.), and similar collectibles. The reason for limiting our analysis to such works is that they share several characteristics that make ownership disputes both more likely to arise than in the case of other goods and more difficult to resolve when they do arise. If the law can deal with these disputes efficiently, the chances are that it can deal efficiently with more routine types of dispute over ownership.

Most works of art are durable, highly portable, and limited in number (often one of a kind). And often a work of art is of such questionable identity and authenticity that its value depends on its provenance (history), including information about prior owners,² yet there is no system of recorded titles, as in real estate, that would make it possible to trace the history of ownership of a work of art with total confidence. Works of art have characteristics that make it both possible to trace the chain of title over a long period of time, which increases the chance that a dispute will arise

² *Why* value depends on provenance is an interesting question but one beyond the scope of this paper. Likely reasons include the protection that a reliable pedigree offers against the risk of forgery (it is particularly good protection, of course, if the work can be convincingly traced back to the artist); the value of an association of the work with prestigious previous owners (as dramatically shown by the recent auction of Kennedy memorabilia, James Barron, "What to Do with Souvenirs of Camelot? Use Them, If You Dare," *N.Y. Times* (national ed.), April 27, 1996, p. 16); and the information that the pedigree conveys about how the work has been valued by others. The fact that the work was part of the collection of a well-known connoisseur is evidence that the work is truly outstanding. But perhaps the most important reason is the lack of agreed-upon standards of artistic excellence, as a result of which the reputation of the artist is more important to the value of a work than the work's intrinsic qualities are. This is why correct identification of the artist is so important to the value of the work, and explains why, when a work is discovered to have been incorrectly attributed to a famous artist, its value plunges, even though it is the same work it was before the discovery. See Holger Bonus and Dieter Ronte, "Credibility and Economic Value in the Visual Arts" (Westfälische Wilhelms-Universität Münster, Volkswirtschaftliche Diskussionsbeitrag Nr. 219, 1995).

between an earlier owner and the current owner, and difficult to trace the chain of title with certainty, which increases the potential for dispute between the current owner and persons who claim to be in the chain before him. A person claiming to be the real owner may have incomplete documentation to prove that his grandfather, say, of whom he is the heir, was the lawful owner of a work of art that disappeared fifty years ago. Even if he can establish original ownership, he may not be able to prove how the work disappeared from his grandfather's possession. A purchaser of a work of art may have a bill of sale from a reputable gallery, but the bill may provide only sketchy information on previous "owners." The previous owners may be dead, and if living may have imperfect recollection and in any event be unable to provide witnesses to or documentation of their recollections. The work may have been resold a number of times, and in different geographic areas. Multiple transfers without a public registry that conditions a lawful transfer of title on a search of the registry increase uncertainty about ownership and hence the likelihood of a dispute.

Disputes over title are more likely if a work is valuable, mobile, relatively easy to hide, but still traceable—conditions frequently satisfied in the case of works of art. Because a valuable work of art is likely to appreciate rather than depreciate over time, a search even for a work that has been missing for many years may be profitable. Such characteristics of works of art as value, appreciation, durability, and concealment also create the possibility that works of art will resurface, often by chance, after many years of being thought destroyed or otherwise gone for good.

Uniqueness facilitates recollection of a particular work, so that, even with limited access, tracing may be possible because the few people who have seen the work will remember having seen it and can provide valuable information to the searcher. (It would be much more difficult to track down a stolen diamond after many years, because to the untrained eye it will look just like many other diamonds.) Even in the case of a unique work, the artist may have created similar works of which only some have survived, and if there is uncertainty over which survived several people may claim ownership of the same surviving works.

A related characteristic of art that facilitates tracing a work of art over generations of owners is that the work must be preserved

in its original form if its value is to be maximized. Some conservation or repair of a work will increase its value, but only to the extent that the reparative effort restores the work to something like its original, or at least an earlier, state. Overpainting a Picasso or cutting it into fifty pieces and selling each piece separately would make tracing more difficult, but it also would greatly reduce the value of the original painting.³ In contrast, a large diamond can be cut into smaller stones. This may reduce its value, but to a far lesser degree than in the case of a work of art.

Although a registry for art similar to a land registry would eliminate many ownership disputes, it is probably not feasible, because of the huge number of works that the registry would have to contain. Land registries work well because land doesn't move around, so a local registry can contain a complete inventory of the land in its area. A registry of works of art would, because of their mobility, have to be worldwide, and would have millions of works in it. Many of the works would be so similar that even photographs would not enable them to be distinguished.⁴ It is true that there are recording systems not only for land but also for security interests in personal property, but these UCC registries mainly record classes of personal property (for example, an automobile dealer's ever-changing inventory of cars) rather than individual items.

The feasible alternative to a comprehensive registry of works of art⁵ is a registry limited to missing works of art. Works that are

³ See, for example, *de Balkany v. Christie Manson & Woods Ltd.*, *The Independent*, Jan. 19, 1995, p. 8 (Q.B. 1995), discussed in Richard A. Posner, *Law and Legal Theory in England and America*, lect. 2 (Clarendon Press, forthcoming).

⁴ It might seem that another reason why land registries are much more common than art registries is that most owners of art are in possession of the art, whereas possession and ownership of land are often divided. But the principal function of a land registry is not to enable a prospective purchaser to identify the owner (as distinct from a tenant who may be in possession of the owner's property), but to enable him to determine whether the owner has good title.

⁵ We include the qualification "comprehensive" in recognition of the fact that there are some specialized registries for classes of collectibles (such as

both missing and sufficiently valuable for owners to search for them are of course a tiny subset of all works of art. And there will usually be enough time between the theft or loss of a work (assuming the owner is aware of that the work is missing), and its resale by reputable auction houses, galleries taking works on consignment, or buyers, to enable the registry to be checked to determine whether the work has been stolen from or mislaid by the rightful owner. In 1976 the International Foundation for Art Research, a private nonprofit organization, created (in cooperation with unnamed “partners in London”⁶), the Art Loss Register, which now lists 60,000 stolen or otherwise lost works of art. The Register will list a work only after the owner has reported the theft or loss to the police. The purpose of this restriction is to discourage practical jokers, extortionists, and lunatics from listing themselves as owners of lost works of art, thereby creating a cloud on title that would impede the recovery and transfer of the works by the rightful owners. It has been argued that no buyer of a work listed in the Register should be deemed a good faith purchaser and that no statute of limitations should be enforced against an owner who sues for the return of a work that he has listed in the Register.⁷

A final explanation for why the chain of ownership of a long-lost work of art can often be traced has to do with why people own art. Economists since Veblen have described art as a prestige good that enables the collector to signal to others that he is a person of both wealth and good taste. The collector gets utility not only from admiring the work hanging in his living room but also from believing that other people envy or admire him because he owns it. To obtain this additional utility, people who buy art don't want to keep it hidden away. They brag about owning it, show it

Stradivarius violins) and works of particular artists. These registries are feasible because they list only a modest number of items.

⁶ *IFAR Reports*, Oct. 1995, back cover. The reason may be that, as noted by Levmore, note 1 above, at 61, the English doctrine of “market overt” makes it easy for persons buying stolen art from London art dealers to obtain good title to the art. Parliament, however, has recently abolished the doctrine. See Sale of Goods (Amendment) Act of 1994, § 1.

⁷ Steven A. Bibas, Note, “The Case against Statutes of Limitations for Stolen Art,” 103 *Yale Law Journal* 2437 (1994).

to friends, lend it to museums and galleries for exhibitions.⁸ Rarely (in the United States anyway) will a collector refuse to lend a piece to a museum for a show or provide a transparency of the work for publication in a book. On the contrary, most collectors go out of their way to get their paintings included in shows and books. They do this partly to confirm and enhance the value of the works but also to obtain utility from having one's name ("lent by..." or "in the collection of...") publicly associated with the work. If a lender's sole concern were the increase in the work's value, museums would not identify the lenders of works for exhibition. Art's signaling value makes it more likely that the rightful owner will eventually find his long-lost work.⁹

B. The Disputes

We are interested in ownership disputes involving "innocent" persons. But we use the term in a very broad sense, excluding only—besides of course thieves—persons who know they are buying a stolen work of art as opposed to buyers who fail to take proper precautions against the possibility that the work is stolen. The "good faith" purchaser, roughly the purchaser who both believes that the work he is buying is not stolen *and* takes optimal precautions against a mistake about title which fail however to reveal the fact that the work *is* stolen, is thus a subset of the innocent purchaser. We try to make these distinctions more perspicuous a little later in the paper.

We are less interested in the original or previous owner's remedies against the thief himself, but will discuss them briefly. It is reasonably clear as a matter of economics that the owner should be able to get his work of art back from a thief even if the owner was careless in protecting the work against theft; hence the law's rejection of a defense of contributory negligence to theft or its tort

⁸ An offset is that letting the world know that you own valuable art provides information to potential thieves that will increase the likelihood that the art will be stolen. Offsetting the offset, however, is the fact that publicizing a work of art may make it more difficult for a thief to "fence" it, thus reducing the expected gains of theft.

⁹ This suggests that the high bidders for known stolen art will be art lovers rather than status seekers.

counterpart, conversion, makes economic sense. Since a thief incurs costs to bring about a transfer that is not (on average) socially wealth-maximizing, while an owner incurs costs to prevent such a transfer, the most efficient method of avoiding this inefficient transaction is for the thief to be deterred rather than for the owner to incur costs of self-protection.¹⁰ This result is achieved by punishing the thief and restoring the work to its rightful owner. Unless stolen property is recoverable by the owner, owners will have an incentive to incur increased costs of self-protection against theft, costs that may exceed the costs of deterring theft through punishment alone. The higher the costs of self-protection, moreover, the smaller will be the demand for art (because it will cost more to own); so the smaller will be the amount of art created, preserved, and found than under a legal regime that entitles the owner to the return of his property from the thief. Giving the owner a right to get his property back also reduces the costs of public enforcement. It does this both by allowing the same level of deterrence to be achieved with less severe public sanctions (the right of return operates as a fine equal to the value of the work of art to the thief) and by giving victims of theft an incentive to cooperate with the law enforcement authorities.

Were the costs of apprehending and convicting a thief very high relative to the costs of preventing theft by owner self-protection, it might make sense to “privatize” the enforcement of the law of larceny by leaving the prevention of theft entirely to the potential victims, the owners. But this is unlikely to be the optimum solution. It would give thieves an incentive to invest more in penetrating the defenses of the potential victims, which in turn would lead the latter to invest more in self-protection, leading to a kind of arms race. And since both the private and the social value of art depends to a significant extent on public display, the prevention of theft by owners involves heavy nonpecuniary as well as pecuniary costs, such as the owner’s losses in status and prestige from suppressing information on his ownership and the location of the work by refusing to lend the work for public exhibition and denying access to publishers and others who may

¹⁰ William M. Landes and Richard A. Posner, *The Economic Structure of Tort Law*, ch. 6 (1987) (“Intentional Torts and Damages”).

want to reproduce or examine the work.¹¹ The prevention of theft of art must already be very costly, notwithstanding the criminal penalties and the owner's right of recovery, judging by the large amount of such theft, including audacious thefts from famous museums, such as the Gardner in Boston. Recall that the Art Loss Register lists some 60,000 works (not all stolen, however—some are lost without being stolen), probably only a fraction of the total number of stolen works of art.

Of course, in saying that there is a large amount of art theft, we are speaking very loosely. For there is also a very large amount of art (as we emphasized in discussing the infeasibility of a comprehensive register of art objects), and no one has tried to measure the prevalence of art theft relative to other forms of theft. Our basic point is not affected. An object that is at once very valuable and very small is a natural target for thieves, and this implies that a low prevalence of theft of such objects would have to be purchased at a high cost in expenditures on preventing and punishing such theft, so that the social costs of art theft would still be high.

The idea that secrecy is a socially costly method of protecting property rights is not limited to the art market. The idea is a cornerstone of patent law, which invites the inventor to disclose his invention (rather than keeping it a trade secret) in exchange for a right to prevent copying for a period of years. The more secure that property rights in works of art, the more likely those works are to circulate, conferring value on art lovers, scholars, and artists. An analogy from the domain of copyright is the refusal of Elizabethan playwrights, such as Shakespeare, to publish their plays, which (in an era before there was a copyright law) would have facilitated plagiarism. Indeed, actors were not given complete scripts of the play in which they were appearing, but just their own parts, to prevent pirates from obtaining the complete text of the play without negotiating with all the actors. This is a

¹¹ An offsetting factor, noted earlier, is that the more widely displayed a work of art is, the more difficult it is to "fence" it. Everyone will know that it is a stolen work, so it will be difficult for a thief or buyer of such a work to display it publicly.

good example of the paradox of protecting a form of property that is valuable in virtue of being displayed by suppressing its display.

Although the proper legal status of the art thief is straightforward, theft remains an important factor in the analysis of disputes between original owners and subsequent purchasers of works of art because the rules for resolving those disputes may affect the amount and the social costs of theft. As we are about to see, the more rights that the original owner has against a purchaser of a stolen work (even though many transactions may separate the purchaser from the thief), the lower will be the price at which a thief can sell a work of art, thus reducing the incentive for art theft. But the less will be the incentive of the owner to protect his property against theft, which will reduce the cost of stealing to the thief. Analysis of the optimal legal regime is complicated not only by this tradeoff but also by the fact that the interests of other persons besides owners, thieves, and the beneficiaries of wide public display of works of art—namely purchasers—must be considered once an innocent purchaser enters the picture. Loss as well as theft of property must also be considered.

Thieves (and their fences, principals, and knowing purchasers) are not the only criminals in the art market. An important class of art criminals that we do not discuss is forgers. The analytical difference between art forgery and art theft is that the optimal rule for deterring forgery requires consideration only of the forger and the purchasers of the forged work, whereas the corresponding rule for theft requires consideration of the thief, the purchasers, *and* the owner of the work stolen.

II. THE MODEL

A. Behavior of Owners and Purchasers of Stolen Art

Let A denote the original owner of a work of art. By “original” we mean simply and inaccurately the person who had valid legal title to the work when it was lost or stolen, rather than the person who first acquired the work from the artist, or the artist himself—the true original owner, unless it was a work for hire.

A knows there is some probability that the work will be stolen, lost, or (a subset of lost) entrusted by him to a dealer who will sell it without A 's permission and later disappear with the proceeds. We can write

$$(1) \quad p = p(x, \phi)$$

where p denotes the probability (>0) of such an eventuality. We assume that p is negatively related both to A 's expenditures (x) on self-protection and to the probability (ϕ) that the law will revert title in the original owner after it has been found; equivalently it denotes the degree to which the law favors an original owner over someone who currently possesses the work (call him B).¹² Expenditures on self-protection include both monetary costs (alarm systems, guards, and so forth) and the loss of prestige from not publicizing one's ownership of the work in the hope of reducing the likelihood of its being stolen. We assume diminishing marginal products throughout, so that x lowers p but at a decreasing rate—so $p_x < 0$ and $p_{xx} > 0$.¹³ The variable ϕ lowers p because the more the law favors original owners, the lower will be the expected value to subsequent purchasers of acquiring works some of which may ultimately have to be returned to original owners. This prospect will in turn lower the price for such works and hence the incentive of thieves to steal them in the first place. Lower prices may also reduce p by increasing the likelihood that someone who finds a missing work will immediately return it to the original owner rather than sell it to a third party. Initially we take ϕ as given and assume that $p_\phi < 0$ and $p_{\phi\phi} > 0$. Although ϕ can range from 0 to 1, we focus primarily on the values 0 and 1. Once A sues to recover the work a court will either award the work to A ($\phi=1$) or let B keep it ($\phi=0$). Ex ante, ϕ can of course take intermediate values.

¹² The variable p depends on other factors as well, including the returns and expected sanctions from theft and the possibility of permanent loss from war, fire, flood, bombing, an earthquake. We take these factors as given and outside our analysis.

¹³ We use subscripts throughout the paper to denote derivatives.

We assume that if the work is stolen or lost, A will eventually discover its whereabouts. But this will take time and A will suffer a loss from not possessing the work in the interim. Let q be the fraction of the value of the work that A recovers (assuming the law returns the work to A), where q is positively related to the time that it takes A to locate the work and to A 's discount rate.¹⁴ So $1 - q$ is the fraction of the work that A loses from delay in finding it or, equivalently, that the person who possesses the work before A finds it gains from the delay by retaining possession longer.

We can write

$$(2) \quad q = q(y, z)$$

where y denotes A 's search expenditures, which reduce the time it takes to recover the work, and z denotes expenditures by B , which increases that time. A 's search can include checking catalogues and exhibitions of the artist's work, inquiring of enforcement agencies, inspecting registries of lost art, hiring investigators, consulting art historians, and—perhaps—advertising the loss in art periodicals. We say “perhaps” because it has been argued that publicity will drive a stolen, as distinct from an inadvertently taken, work of art underground and out of ordinary commercial channels, reducing the likelihood of its discovery. This argument was made by the Guggenheim Museum in its successful suit to recover a Chagall gouache that had been stolen from a storage area in the museum more than twenty years earlier.¹⁵

B 's counterefforts might include concealing his acquisition of the work, refusing to display or lend it out for public exhibition, or, in the extreme, building a secret room in which to store it. Like A 's expenditures on preventing theft, B 's on preventing the discovery of defective title reduce the public display of art. Another cost of B 's efforts may be a nonmonetary loss of prestige from being unable to disclose his ownership of the work.

B will make counterefforts even if he is an innocent purchaser, because there is always a chance that an ownership dispute will

¹⁴ We could instead define q as the probability that the work will be found by A conditional on its having disappeared. We use the definition in the text because it is more convenient for analyzing statute of limitation questions.

¹⁵ See *Guggenheim Foundation v. Lubell*, 569 N.E.2d 426 (N.Y. 1991).

arise and the work will be returned to a previous owner. We assume that A 's efforts increase q at a decreasing rate ($q_y > 0$ and $q_{yy} < 0$) and that B 's efforts lower q at a decreasing rate ($q_z < 0$ and $q_{zz} > 0$). For simplicity we assume that B incurs his costs after buying the work, but part of his search costs before he buys the work will be costs of verifying A 's title, and will thus be higher the more the law favors original owners.

Another assumption is that B does not shift the risk of defective title back to the dealer or other seller from whom he bought the work, via warranty, or to the pool of art buyers, via title insurance. Interestingly, auction houses and art dealers generally disclaim any warranty of the provenance, as opposed to the authenticity, of the works of art that they sell.¹⁶ A dealer that issued such a warranty would have to increase his sales commission. His customers, most of them wealthy people advised by their own experts, might not want to pay the extra price, being able to protect themselves against the risk and cost of a defective title as cheaply as the dealer. The absence of title insurance for works of art to emerge may be due to adverse selection and to the difficulty of calculating the risk of defective title to art with actuarial precision. The first point is especially important. Insurance companies normally insure against the risk of something happening in the future rather than against the consequences of something that has already happened.¹⁷ The insured is more likely to know the past than the future and so more likely, in the case of insurance against the consequences of something that has already happened (such as a thief in the chain of title), to be exploiting

¹⁶ For example, the auction agreements reproduced in the Christie's and Sotheby's catalogues disclaim any warranty of the provenance or merchantability (title) of the works auctioned. In view of the importance of the art dealers and auction houses of New York City in the art trade, it should be noted that the New York City Administrative Code, tit. 20, ch. 2, subch. 13, reg. 24, forbids auction houses to disclaim warranty of title. The reluctance of the auction houses to warrant title, but not authenticity, makes economic sense, although we cannot explore the issue fully within the scope of this paper. The auction houses have expertise in connoisseurship, but not in reconstructing the history of the ownership of a work.

¹⁷ For example, medical insurers usually disclaim insuring against the consequences of preexisting conditions.

information known to him but not to the insurer. Title insurance in real estate is only an apparent exception, since all the title insurer insures against is the risk of its having failed to conduct a thorough search of the public registry of real estate titles.

The net expected value (W^a) or utility that A receives from the work of art will be affected by the risk of loss, the time it takes to find a lost work, and the likelihood that the law will return it to A , as in

$$(3) \quad W^a = [1 - p(x, \phi)]V^a + p(x, \phi)[q(y, z)\phi V^a - y] - x$$

where V^a is the value of the work to A at present, that is, before any loss. Maximizing (3) with respect to x and y (and assuming that A is risk neutral and takes z and ϕ as given) yields the first-order conditions for a maximum for these variables:

$$(4) \quad -p_x/V^a - (q(y, z)\phi V^a - y)/-1 = 0$$

$$(5) \quad q_y\phi V^a - 1 = 0$$

Equation (4) shows that A will expend resources on protecting himself from a possible theft until the marginal return (the reduction in p multiplied by the value of the work net of the expected recovery if it is stolen or lost) equals the cost of spending one more dollar on x . The larger V^a is, the more responsive p is to x (that is, the greater $-p_x$ is), and the lower A 's expected recovery is (that is, the lower $q(y, z)\phi V^a - y$ is), the greater will be the return from self-protection and hence the greater will x^* be. (We use x^* and y^* to denote the values of x and y that satisfy equations (4) and (5).) Thus, if a particular type of missing work is very difficult to find, $q(y^*, z)$ and hence A 's expectation of recovering the work will tend to be low, with the result that x^* will be high even if the law strongly favors original owners. Alternatively, the sooner A expects to recover his missing work, the lower x^* will be. Thus, self-protection and the prospect of quickly recovering the missing work of art are substitutes.

We can see from equation (5) that y^* , A 's optimal¹⁸ expenditure on searching for a missing work of art, depends positively on

¹⁸ Privately, not necessarily socially.

ϕ , on V^a , and on the responsiveness of q to y .¹⁹ A 's expenditures on search take place only after the work is missing. So although efforts at self-protection reduce the likelihood that the work will be stolen or lost and hence that A will spend anything at all on y , once the work is missing y^* will be independent of x^* .

We must consider how the law's decision whether to return stolen or lost property to original owners or leave it with the purchasers will affect the original owner's behavior. Suppose the law always favors purchasers, provided they do not have actual knowledge that the work they are buying is stolen property, over original owners ($\phi=0$). From (5) we see that $y^*=0$, since even if A finds the missing work quickly he will not get it back. This implies that the benefits from self-protection are greatest when $\phi=0$. That is, x^* will take its highest value then because $q(y, z)\phi V^a - y$ in equation (4) will be zero. In contrast, if the law always favors original owners ($\phi=1$), A 's search effort (y^*) will be at its greatest. And since $q(y^*, z)\phi V^a - y^*$ must be positive (otherwise A would spend nothing on y), x^* will fall as ϕ increases from 0 to 1.

In words, the more the law favors original owners over purchasers, the less will original owners spend on self-protection and the more they will spend on searching for their missing works. That is, x^* and ϕ are substitutes, since $dx/d\phi < 0$, while y^* and ϕ are complements ($dy/d\phi > 0$).²⁰ The effect on search is likely to be

¹⁹ To simplify, we assume that $q_{yz} = 0$, so that A 's search effort does not depend on B 's behavior.

²⁰ Assuming that ϕ can take intermediate values between 0 and 1, we can solve for $dx/d\phi$ and $dy/d\phi$ by taking the total differentials of equations (4) and (5) with respect to x , y , z , and ϕ . This yields (assuming the relevant cross-partial derivatives are 0):

$$(i) \quad dx/d\phi = p_x V^a (q(y, z) + \phi q_z dz/d\phi) / [p_{xx} V^a - (q(y, z)\phi V^a - y)] < \text{or} > 0$$

$$(ii) \quad dy/d\phi = -q_y / q_{yy} \phi > 0$$

The sign of $dx/d\phi$ is indeterminate because $dz/d\phi$ is positive. But as we show later, its value is likely to be small. A innocent or good faith purchaser, by definition, believes that he receives good title to the work, and so an increase in ϕ should have only a minor effect on his expenditures on z . The

greater than the effect on self-protection, however. The owner has strong incentives to prevent the theft of his art even if the law will restore the art to him should it be stolen and later resurface; the incremental effect of the legal position on those incentives is likely to be small, because it will alter the (already small) probability of his recovering a stolen work only slightly. Once the art *is* stolen, however, the owner has a strong incentive to find it—but only if he is entitled to its return.

B. Good Faith Purchasers and the Stock of Art Works

The case for giving the purchaser from a thief a superior title to that of the original owner, the thief's victim, is strongest in the case of those purchasers whom the law calls "good faith purchasers." We define a good faith purchaser, in economic terms that are broadly consistent (as we shall argue) with the legal concept, as one who, having made the optimal investment in obtaining information about the title of the work prior to purchase, believes that there is a very high probability that the seller can transfer good title to him.²¹ That is, not only is his belief that the seller can transfer good title to him sincere; it is also reasonable because the cost of additional investigation would exceed the sav-

indeterminacy of the sign of $dx/d\phi$ implies that $\phi q_z dz/d\phi$, although negative, is probably close to zero. But it is possible that for some values of ϕ (those closest to 1, since if ϕ is close to 0 this will not hold), the numerator in (i) could be positive (since $p_X < 0$) and hence $dx/d\phi$ would be positive. This possibility, however, is not of great interest to us. We focus on cases where ϕ is either 0 or 1, and we have shown that x^* takes its maximum value when $\phi=0$. Hence, $dx/d\phi < 0$ when ϕ increases from 0 to 1 and it is probably negative as well for all intermediate values of ϕ . The assumption of zero cross-partial derivatives seems reasonable because there is no clear reason why, for example, the marginal productivity of self-protection or search will depend on the legal rule. Finally, notice that the partial derivative of (4) with respect to y is zero, so that the effect of changing y and ϕ together appears only in (5) and not in (4).

²¹ We are not claiming that the good faith purchaser's expenditure on obtaining information is *socially* optimal. To the extent that the expenditure reduces the probability of theft by lowering the prices at which thieves can sell stolen works of art, it has social value. To the extent that it merely shifts a loss to someone else (for example, to the true owner, if the effect of the expenditure is not to discover the theft but to secure the purchaser's title), it has a purely private value.

ings from rejecting the work should its title prove defective discounted by the very low probability that the additional investigation would reveal that the seller's title was indeed defective. Suppose there is a .05 probability that the seller can't transfer good title to *B*, the price of the work is \$1,000, and the cost of additional information that would eliminate any uncertainty about title is \$500. *B* is a good faith purchaser because the probability is very high that the seller can transfer good title to him and because *B*'s refusal to spend \$500 is reasonable since such an expenditure would yield only a \$50 expected benefit (.05 times the \$1,000 purchase price he would save upon learning that the seller could not convey good title to him).²² But suppose *B* refused to acquire this information when it cost only \$10. He would not be a good faith purchaser; his belief that he was acquiring good title, though honest, would not be reasonable, because he could have eliminated uncertainty about the title at slight cost.²³

In ascribing a burden of investigation to the good faith purchaser, we depart from the formal legal concept, which is sometimes paraphrased as "a pure heart and an empty head." There is no real inconsistency. For a consumer dealing in the ordinary course of business with a reputable-appearing merchant, the optimal expenditures on investigating the merchant's ability to convey a good title to the goods he sells is close to zero; imagine the aggregate costs if all such consumers were expected to conduct a form of title search. If suspicious circumstances make the optimal expenditure positive yet the consumer goes ahead and

²² The example assumes that *B* would not purchase the work if he knew it was stolen or its title otherwise defective and he would lose the purchase price if and when the work was eventually returned to *A*. It is immaterial to the analysis if, through warranty, *B* is able to shift the loss of the purchase price to the dealer from whom he purchased. And we have already noted that warranty is often disclaimed. Moreover, the interval between *B*'s purchase and *A*'s claim may be so great that the dealer is no longer in existence and its warranty is therefore worthless.

²³ Although a reasonable *B* would have acquired this information, a particular *B* might not have because, in effect, his costs of information were much higher than those of a reasonable person. For example, this *B* may be too stupid to acquire or process relevant information about the work's title. We ignore this detail.

buys without any investigation, we assume that he will be denied the status of good faith purchaser.

A related point is that because the purchaser's belief that he is getting good title must be sincere as well as reasonable for him to be given the status of a good faith purchaser, he may lose that status even if the cost of acquiring additional information about title would be prohibitively high, simply because the known probability that the seller could not convey valid title was also high. This will often be the case with recently discovered antiquities, a class of works in which the documenting of previous ownership can be highly uncertain. Suppose that the probability is .7 that the seller cannot convey good title, the price of the work is \$1,000, and the cost of additional information that would eliminate any uncertainty over title is \$5,000. It would be wasteful for *B* to spend \$5,000 for an expected return of \$700. Although *B* would be an innocent purchaser rather than a receiver of stolen goods, he would not be a good faith purchaser because he would think it likely that his seller did not have good title. The point is related to the previous one because, since the good faith purchaser by definition does not think there is any problem with his seller's title, he has little incentive to conduct an investigation.

Table 1 expands on these points. For simplicity we treat as discontinuous what is actually a continuum. The first row illustrates the good faith purchaser. The next two rows illustrate two types of innocent but not (in the contemplation of the law) good faith purchasers. One faces a low probability that the title is defective but fails to spend the optimal amount on information; the other faces a high probability that the title is defective but spends reasonably on information.

TABLE 1

Type	Probability	Price (\$)	Cost (\$)	Acquire Information?
Good Faith	.05	1,000	500	yes
Innocent	.05	1,000	10	no
Innocent	.70	1,000	5,000	no
Bad Faith	.55	1,000	1	no
Bad Faith	.95	1,000	1	no
Willfully Ignorant	.70	1,000	-10	no

Definitions. *Probability*: probability that seller cannot convey good title. *Price*: price of product. *Cost*: cost of additional information that would eliminate all remaining uncertainty about title.

The last three rows depict three types of the *really* bad faith purchaser.²⁴ The first believes it more likely than not that the title is defective and refuses to spend the trivial amount on information that would eliminate that uncertainty. The second is highly confident that the title is defective and also refuses to spend even a dollar to verify his expectation. The third, the “willfully ignorant” purchaser, has a negative cost of information because he goes out of his way—that is, incurs added costs—to avoid discovering whether the work is stolen, even though he strongly suspects that it is. He behaves this way because he hopes that the law will treat him more favorably than the *really* bad faith purchaser. An “ostrich” instruction, often given in criminal cases, tells the jury to treat as an intentional wrongdoer one who takes steps to avoid the acquisition of knowledge that would convert a suspicion—for example, that he is buying stolen property—into a certainty. As a practical matter, however, the willfully ignorant may be somewhat more likely to escape the law’s clutches than the fully deliberate wrongdoer.

²⁴ All purchasers who are not good faith purchasers are, in the eyes of the law, bad faith purchasers. But we are trying to distinguish between the good faith purchaser and other innocent purchasers, and between innocent purchasers and purchasers who are acting in such bad faith that their conduct invites criminal sanctions.

A bad faith purchaser chooses not to acquire information because it has no value to him; he would purchase the work even if he knew for certain that it was stolen or that its title was otherwise defective. “No value” is a bit of an exaggeration, however. Our bad faith purchaser would alter his expenditures on suppressing information about the acquisition if he knew for certain that the work was or was not a stolen work, rather than merely strongly suspecting that it was the latter; he would spend more on suppression if he learned the work was stolen and zero if he learned it was not. And the willfully ignorant purchaser believes that the law will be less successful in prosecuting him criminally for selling or possessing stolen goods if he can claim lack of knowledge, even though his information costs are zero or even negative.

The distinction that we (and the law!) draw between an innocent and a good faith purchaser makes economic sense in light of our earlier discussion of theft. If purchasers who actually suspect that they are buying stolen or lost art are able to obtain good title notwithstanding the high cost of information, the market for such art will be greatly enlarged, which in turn will greatly increase the expected return from art theft.

One who buys a work of art from a reputable art dealer or an established auction house, and knows the provenance of the work, including the history of its prior ownership and also knows that there is nothing fishy in the chain of title, and pays a price that he has no reason to believe has been discounted to reflect a substantial probability that the title is not good, will ordinarily be a good faith purchaser. He will have no reason to suspect that the seller can't convey good title; and it would not pay for him to make additional inquiries about the seller or the work. While we have explained why other innocent purchasers should not be allowed to obtain good title from a thief, we have yet to consider whether the good faith purchaser should.

We begin our exploration of this issue by noting that if the good faith purchaser has no feasible means of dispelling the slight uncertainty that he is buying stolen art, it does not follow that his post-purchase behavior will be totally unaffected by the chance that an original owner will some day pop out of the woodwork and seek to recover the work from him. The seller, to

maximize the sale price, will represent that he owns or is the consignee of the work of art and can lawfully transfer title to the buyer for a price of, say, π . But because the seller may be dishonest or uninformed, the buyer, B , who in this section of the paper is a good faith purchaser, will assign a probability, r , to the risk that the work may have been stolen or lost. Although r depends on p , it also depends on the number of comparable works for sale. Suppose that the total number of works of some particular type is 1,000, that 10 percent are sold each year by or with the authorization of the original owners, and that each original owner faces a .01 probability of loss ($=p$) this year. Assume that all lost or stolen paintings are offered for sale but that prospective buyers cannot distinguish between works with good title and those with defective title. The annual number of paintings sold will be 109 ($.01(1,000) + .1(.99)1,000$), all at the same price, π . Of these 109 paintings, 10 paintings— $.092 (=r)$ of those sold—will lack good title. More generally, if the buyer cannot determine which works are stolen or lost and which are not, then

$$(6) \quad r = p/(p + \alpha (1 - p))$$

where $r > p$, provided that $\alpha < 1$, where α is the fraction of the stock of paintings that is sold each year.²⁵ The smaller that fraction, the greater r will be relative to p (because $\partial(r/p)/\partial\alpha = - (1 - p)/(p + \alpha (1 - p))^2 < 0$). If the entire stock turns over each year (α

²⁵ Obviously the example is drastically simplified. Not all lost or stolen works or art will show up for sale this year; some may be destroyed, or lost for many years. Works missing in year t may not be offered for sale until $t+n$. The stock may be growing, so that the number lost in any year may overstate the number of lost or stolen works of art that are for sale. Many of the missing works may be bought by people who know they have been reported stolen or missing. With all these factors taken into account, the number of lost or stolen works that are for sale will be βpK , where K equals the stock and $\beta < 1$. Provided $\beta/\alpha > (1 - \beta p)/(1 - p)$, r will be greater than p when $\beta > \alpha$ (that is, when the probability of selling a stolen or lost work of art is greater than the probability of selling a work from the stock in a given year) and p is relatively low.

$=1$), then $r=p$, and if no works are sold from the stock ($\alpha=0$), then $r=1$ —but then one could not maintain the assumption that B was a good faith purchaser.

B faces uncertainty not only with respect to whether the work's title is defective (r) but also with respect to whether, if it is defective, how soon this will be discovered (q) and whether, when it is discovered, the work will be returned to the original owner (ϕ). Assuming that if the law returns the work to the original owner the buyer will forfeit π , we can write B 's expected value from the purchase of the work as

$$(7) \quad W^b = (1 - rq(y, z)\phi)V^b - z$$

V^b is the value of the work if there is no chance of a prior claim, and $rq(y, z)\phi V^b$ is the expected loss to B if there is such a chance. Maximizing (7) with respect to z (and taking r , y , and ϕ as given) yields

$$(8) \quad -rq_z\phi V^b - 1 = 0$$

B will increase his expenditures on z until the marginal benefit of those expenditures in lowering q equals the marginal cost. Call that optimal value z^* . It will be positive only if B purchases the work, which he will do only if $W^b - \pi \geq 0$.²⁶

We now investigate B 's purchasing decision and how the market will determine the price and quantity of works of art that are sold. Since the stock is fixed and, for convenience, normalized at 1, we can write the quantity sold as $p + \alpha(1-p)$. The supply curve of works for sale will be upward sloping because both α and

²⁶ Even if B purchases the work, $z^*=0$ if $-pq_z\phi V^b < 1$ for all values of z . We also adopt the convention that if $W^b - \pi = 0$, B will purchase the work. And recall our assumption that B does not expend any resources investigating his seller's title, in advance of buying the work. This is plausible because, by definition of a good faith purchaser (one who has already made the optimal investigation, normally zero or slight because he is dealing in the ordinary course with an apparently reputable dealer), additional expenditures by him on investigating his seller's title are unlikely to be productive.

p are increasing functions of π —more owners will prefer to sell than to retain their works as π increases, and the gains from stealing and selling works with defective titles will also increase with π , provided that the greater effort devoted to stealing works of art is not completely offset by increases in self-protection by original owners.²⁷ To simplify, we shall let α and p increase proportionately as π increases, so that r in (6) remains constant.²⁸ The demand curve for the works will be downward sloping, provided there are differences in valuations among B s. If there are, then as π decreases more B s will buy.

Suppose ϕ increases; that is, the law shifts in favor of original owners. W^b will fall because there will be a greater risk that B will have to give up the work should his title prove defective. This is another oversimplification. For B may one day find himself in the position of an original owner, trying to get his work back from a purchaser of the work from a thief.²⁹ By definition, good faith purchasers believe they're acquiring good title, which if so will make them "original owners" (as we are using this term) should the works ever be lost or stolen. The converse of this point³⁰ is that original owners may benefit from rules protecting good faith purchasers. For unless the original owner is the artist himself, the original owner is always subject to a claim by some previous owner in the chain of title. We ignore the point, interesting and important as it is, since it seems to cut in both directions.

²⁷ Notice that x does not depend on π in equation (4) but on V^a . If, however, $\pi > V^a$, A will sell it—the market sets a higher value on the work than he does. Only among those A 's will an increase in π induce greater self-protection.

²⁸ This is not quite correct, because if both α and p increase by the same proportion, say λ (>1), the increase in r will be slightly greater since it now equals $p/(p + \alpha(1 - \lambda p))$. We ignore this difference.

²⁹ Compare the analysis in William M. Landes and Richard A. Posner, "An Economic Analysis of Copyright Law," 18 *Journal of Legal Studies* 325 (1989), of the mirror-image case in which creators of copyrighted works may be hurt by too-strict rules on copyright infringement. While wanting to protect their own work from being copied, the creators also want to make use of previous work in their creative process.

³⁰ To which the analysis in *id.* is even more directly applicable.

So assuming that W^b will fall as ϕ increases, the demand curve will shift downward, leading to a reduction in π and a decline in both p and α . In words, increasing the protection of original owners lowers the price that buyers will pay for paintings and reduces the quantity sold both of stolen works and of works with good title. This point assumes that all paintings sell at identical prices because buyers cannot distinguish between works with good and defective titles. If they can distinguish, but not perfectly, works with a higher probability of having a good title will command higher prices. The quality premium will increase as ϕ increases, because the adverse consequences to B of buying a work that turns out to have bad title increase with ϕ .

What are the consequences of the legal position for B 's behavior? If B knows for certain that the seller can convey good title to the painting, then $r=0$ (since $p=0$) and, of course, $z^*=0$. B will have no incentive to incur any cost, including any loss of prestige from keeping his ownership of the work secret, to prevent the original owner from recovering the work. At the other extreme, if B knows for certain that the work is stolen and the seller cannot convey good title, $r=1$ (for now the number of similar but lawful works offered for sale is not relevant to B 's behavior), and z^* , which must satisfy $q_z \phi V^{b-1}$, takes its highest value. Thus, $dz^*/d\phi > 0$ as ϕ increases from 0 to 1.³¹ In this part of the paper, however, we are interested only in the very low values of r ; since at any higher values B would no longer be a good faith purchaser.

A comparison of equations (8) and (5) reveals that A 's search efforts will be more intensive than B 's offsetting efforts at suppressing information. The reason is that A undertakes these efforts knowing that his work is missing, while B knows only that there is a small risk (since B is assumed to be a good faith purchaser) that the work has a defective title. Yet the aggregate expenditures of all B 's could well exceed those of all A 's. Every B makes a small expenditure on lowering q while only a subset of

³¹ For intermediate values of ϕ , and assuming that $dr/d\phi = 0$ (see the earlier discussion of the determinants of π), we have $dz/d\phi = -q_z/q_{zz}\phi > 0$.

A's—those who are missing a work of art—will undertake expenditures to raise q .

The more *B* cares about the prestige of owning art, the greater will be his nonpecuniary cost of suppressing information on his acquisition. Thus, other things being equal, $1-q$ in its sense of the fractional share of the value of the work enjoyed by the purchaser will be greater for buyers who are art lovers rather than status seekers.³²

We have assumed that the stock of art works is invariant to the choice of the legal rule, and this assumption has now to be defended. Recall that if good faith purchasers do not have secure rights (as ϕ goes from 0 to 1), we assume that the price of works of art will be depressed and fewer existing works will be sold and stolen. It might also be argued that fewer works will be created. But because of the durability of works of art and the tendency of art to appreciate over time, the existing stock, especially when weighted by value, is very large relative to the annual production of new works. Hence the effect of a change in legal rules on the total amount of art is likely to be small, at least for a very long time. True, the existing stock is not *really* fixed, because some works are missing and hence not part of the stock in an economic sense, and the legal rules may affect the incentive to discover them. But this margin depends mainly on a separate set of rules, the rules rewarding finders of lost art, which we discuss later.³³

³² To show this, we can rewrite *B*'s expenditures on z as bz where $b (> 0)$ is the cost of a unit of z and hence is greater for status seekers than for art lovers. In equilibrium we have $-rq_Z\phi V^b - b = 0$. Thus, the larger b is, the larger will q_Z be in equilibrium, which implies fewer z 's and hence a higher q or lower $1-q$ (from the assumptions that $q_Z < 0$ and $q_{ZZ} > 0$).

³³ Another consideration that bears on the stock of art is that the price of new as opposed to old art may rise if the law gives greater protection to original owners. Imagine that the initial purchaser from the artist can determine with certainty that he has acquired valid title in the work. This should be relatively easy to do because he only has to trace his purchase back to one previous owner (the artist himself) not numerous parties as would be the case for old art with many previous owners. Thus, the purchaser of a new work should be willing to pay more if the law favors original owners since this gives him greater protection against subsequent good faith purchasers if the work is stolen or lost and he has little concern about prior owners. Contrary to our assumption that

C. The Optimal Legal Position

Having considered how owners and buyers respond to different values of ϕ , we are now in a position to analyze the optimal ϕ . Let W equal the net social welfare from the stock of works of art:

$$(9) \quad W = [\Lambda - p(x^*, \phi)](1 - \alpha)V^a + p(x^*, \phi)[q(y^*, z^*)\phi V^a + (1 - q(y^*, z^*)\phi)V^b - y^* - z^*] + [\Lambda - p(x^*, \phi)]\alpha(V^b - z^*) - [x^* + C(p(x^*, \phi))]$$

the stock of art is fixed, this factor suggests that the more the law favors original owners, the more new art that will be created and, therefore, the greater the growth in the stock of art. But there are added complications that make this conclusion uncertain. Original owners and good faith purchasers are, as we pointed out earlier, really the same people viewed at different times. Hence a shift in the balance of legal protection in favor of original owners may have offsetting effects on the prices of both new and old art. On the one hand, it decreases the resale price because good faith purchasers may be compelled by the law to restore the work of art to an owner original to them. And a decline in the expected resale price will reduce the price one is willing to pay at the outset for both new and old art. On the other, it may increase price because purchasers will know that they will have greater legal protection should their art ever be stolen from them and show up later in the hands of some other good faith purchaser, to whom they will stand in the relation of original owner. Finally, purchasers of art may substitute new for old art as the balance of protection shifts in favor of original owners. This occurs because buyers of new art are mainly concerned about their rights as original owners against subsequent good faith purchasers while buyers of old art are concerned with both their rights against previous owners and subsequent purchasers. How this factor affects the stock is unclear because it both reduces the incentive to maintain old art and increases the incentive to create new art.

In the text we have assumed that the price of old art will decline as ϕ increases from 0 to 1 because we have treated the original owner and good faith purchaser as separate parties in which the latter is only concerned with the possibility that he will have to restore the work to an original owner if the work turns out to have been previously stolen or lost. To this, we should add another factor—the substitution between new and old art as the balance of legal protection shifts to original owners—which tends to reduce the price of old art.

where x^* , y^* , and z^* satisfy the first-order conditions in equations (4), (5), and (8), respectively. We have simplified (9) by setting the stock equal to 1 and by assuming that all A 's and all B 's are identical in their valuations of the works of art, although A 's as a group and B 's as a group are permitted to have different valuations. The assumption that all A 's and all B 's are identical in their valuations of given works of art is obviously false, since there would be no voluntary sales of works of art by some but not all A 's unless there were differences in valuation among the A 's. The market price would be either greater or lower than the valuation placed on the works by all the owners, and in the first case all would sell and in the second case none would sell. But the assumption creates only minor difficulties with equation (9).³⁴

The first set of terms (bracketed) on the right-hand side of equation (9) represents the expected value of works neither missing nor sold. The second set represents the expected value of works that are stolen, or lost, and then sold to the various B 's, but are later found. That value is divided between the A 's and B 's depending on the values for $q(y^*, z^*)$ and ϕ . Notice that the second set of terms also nets out the expenditures that A and B make on y and z in hopes of influencing q .

The third set of terms (bracketed) gives the value of works with good title that are purchased by various B 's. Since these purchasers know only that there is a probability of $(1-p)\alpha/(p+(1-p)\alpha)$ that these works are free of prior claims, they still incur expenditures on z . Last come A 's expenditures on self-protection (x) and the total costs (C) incurred by persons who steal works or

³⁴ The variable x^* is the weighted average of the self-protective efforts of those A 's who would sell and those who would not. Those efforts will be less in the former group because, by definition, they receive less utility from owning their works of art. Some A 's, moreover, who would have sold lost this opportunity when their work was stolen or lost. The second term in brackets in equation (9) includes the value for all A 's whose works are taken. Since some would have sold and others would not have, the relevant V^a in the second term is a weighted average of the V^a 's of the two groups. To allow for these differences would have complicated the notation while leading only to negligible changes in the outcomes, and so we ignore them in the formal model.

find missing works and sell them without the original owner's authorization. Those costs increase with the number of works stolen or lost. But since the stock of works is set equal to the numeraire 1, the number of works stolen or lost equals p and hence $C_p > 0$.

As a further simplification, we assume that original owners and good faith purchasers attach identical values to paintings with good title— $V^a = V^b$. This assumption is not as limiting as it may seem. If B is a good faith purchaser the value he receives from the work should not differ much from the value received by the typical A who chooses not to sell his work. Indeed, as noted earlier, original owners and good faith purchasers are largely interchangeable—most original owners were once good faith purchasers and most good faith purchasers become (from the standpoint of subsequent purchasers) original owners. In some cases $V^a \neq V^b$, for example when the painting has an idiosyncratic value to A or when B is not a good faith purchaser. We consider later how distributive considerations affect the determination of the optimal ϕ .

With $V = V^a = V^b$, equation (9) simplifies to

$$(10) \quad W = V - x^* - p(x^*, \phi)y^* - [p(x^*, \phi) + (1 - p(x^*, \phi))\alpha]z^* - C(p(x^*, \phi))$$

Maximizing (10) with respect to ϕ and assuming that the first-order conditions in equations (4), (5), and (8) continue to hold, we have

$$(11) \quad -dx^*/d\phi - (dp/d\phi)y^* - [(dp/d\phi)(1 - \alpha) + (d\alpha/d\phi)(1 - p)]z^* - (dC/dp)dp/d\phi = pdy^*/d\phi + [p + (1 - p)\alpha]dz^*/d\phi$$

The left-hand side of this equation summarizes the marginal benefits from increasing ϕ and the right-hand side the marginal costs. We assume that the second-order conditions for a maximum hold at the point of equality of marginal benefits and costs. On the benefits side notice that $dp/d\phi = p_x dx/d\phi + \partial p/\partial \phi$. The first term is the increase in p caused by a decline in self-protection

in response to an increase in ϕ (the substitution effect noted earlier). The second term is the decline in p (the probability of theft or loss) as the price of the work of art (π) falls in response to a higher ϕ . Because the substitution effect is, in part, a response to the lower p , it is unlikely to swamp the direct effect of ϕ on p . So we assume initially that the net effect ($dp/d\phi$) of a higher ϕ is a lower p . That is, giving more legal protection to original owners reduces the likelihood that art will be stolen or lost.

Stepping outside our formal model for a moment, we add that a high level of legal protection of original owners will give art dealers, with whom most good faith purchasers deal, a greater incentive to investigate the provenance of the works they acquire, in order to be able to sell them at a high price to purchasers who face an enhanced risk of having one day to restore them to the original owners. Such investigation may reduce the amount of art theft at lower cost than increased self-protection by owners.³⁵ Investigation is not costless, but the only point we are making at the moment is that favoring original owners over good faith purchaser is likely to reduce the amount of stolen and lost art. Later we consider the implications of relaxing the assumptions of the model that lead to this conclusion.

The marginal benefits in equation (II) of increasing ϕ consist of the savings in expenditures on self-protection by original owners of works of art; the reduction in those owners' search costs for missing art (y) that is brought about by the decline in the probability that works with defective titles will be sold; the reduction in purchasers' expenditures on suppressing information (z) that is brought about by the overall decline in demand in the art market; and the savings in the costs of stealing and selling missing works as p declines. The marginal costs of increasing ϕ result from the greater incentive of both A and B to increase their expenditures on y and z in the hope of influencing q (the fraction of the value of the work that A recovers) holding constant the number of works being sold with defective titles and, in B 's case,

³⁵ As emphasized in Bibas, note 7 above, at 2454.

the number of all works sold. Recall that at $\phi=0$ these expenditures by B are zero—his title is secure—but they become positive, and increase, the more likely it is that the law will restore the work to its original owner.

Suppose that p remains constant as ϕ increases because the effect of higher ϕ in reducing A 's incentive to self-protect fully offsets the effect of higher ϕ in reducing p by reducing the incentive to steal. Then equation (II) simplifies to $-dx^*/d\phi + (d\alpha/d\phi)(1-p)z^* = pdy^*/d\phi + [p + (1-p)\alpha]dz^*/d\phi$. Now the marginal benefits of increasing ϕ consist only of the savings in A 's expenditures on self-protection and in B 's expenditures on reducing q . The latter savings come about because the B 's purchase fewer works and cannot distinguish works with good title from those with defective title. The decline in the number of works purchased, however, is limited to works with good title because the number of stolen works remains constant (from the assumption that the decline in self-protection fully offsets the increase in ϕ).

If ϕ can be only either 0 or 1 (that is, either no legal protection or complete legal protection for original owners), then the original owner should be protected if

$$(12) \quad (x^0 - x^1) + (C(p^0) - C(p^1)) \geq p^1 y^1 + [p^1 + (1-p^1)\alpha]z^1$$

where the superscripts "1" and "0" correspond to optimal values of the superscripted variables when $\phi=1$ or 0. The left-hand side of the equation denotes the benefits in reduced costs of self-protection and of stealing and selling works without the original owner's permission when ϕ goes from 0 to 1.³⁶ The right-hand side denotes the costs of searching for missing works and of suppressing information on their location when $\phi=1$, or equivalently the increase in these costs, since they are zero when $\phi=0$. When

³⁶ The term $(dp/d\phi)y^* - [(dp/d\phi)(1-\alpha) + (d\alpha/d\phi)(1-p)]z^*$ in (II) equals 0 when ϕ increases from 0 to 1, because it is evaluated at $\phi=0$, where both y^* and z^* equal 0.

the benefits exceed the costs, the law should favor the original owner ($\phi=1$).

D. Statutes of Limitations

Recall that q is the fraction of the value of the work that is restored to the original owner (assuming $\phi=1$) and $1-q$ is the fraction received by the good faith purchaser (assuming $\phi=1$). Suppose q is directly proportional to the time it takes to locate the work, so that the less time it takes the greater q will be. The period allowed for suit by a statute of limitations we denote by q^s and define as follows: if A discovers (or makes a demand on B) before $q \leq q^s$, then $\phi=1$ (the original owner gets the work back—his suit is timely); and if $q > q^s$, then $\phi=0$ and B gets to keep the work— A 's suit is untimely.

The longer the statute of limitations is, the greater the rights of the original owner are. Put differently, *any* statute of limitations, which is to say any finite period within which suit must be brought, makes $\phi < 1$, so that if we wanted to make $\phi=1$ this would argue for setting *no* deadline for suing a purchaser of art from a thief. In substance though not in form, this is the tendency of the case law. In some states, the statute of limitations begins to run only when the original owner makes a demand on the purchaser. In others a combination of the discovery rule and the doctrines of equitable tolling and equitable estoppel allows the owner to delay suing until he knows that his work has been stolen and who now possesses it and he can obtain service of process on the possessor.³⁷ In other words, the owner can delay suit until it is

³⁷ The discovery rule starts the statute of limitations running when the potential plaintiff discovers his loss. Equitable estoppel stops the statute of limitations from running when the potential defendant takes active measures to prevent the plaintiff from suing (for example, by concealing his identity from the plaintiff). Equitable tolling stops the statute of limitations from running when, even though the potential defendant has not done anything to delay suit by the plaintiff, the plaintiff, despite the exercise of due diligence, does not yet have enough information to be able to bring a suit. See *Cada v. Baxter Healthcare Corp.*, 920 F.2d 446 (7th Cir. 1990).

feasible for him to do so.³⁸ This may be decades or, in principle, centuries after the work was stolen, although the doctrine of laches³⁹ is available as a backstop against suits that the defendant can show were unreasonably delayed by the plaintiff, to the defendant's prejudice.

Since long delays in suing increase the risk of legal error by making it difficult to unmask spurious claims,⁴⁰ there is an argument for having *some* fixed deadline for suit. At some point, the incremental effect of a very long statute of limitations in discouraging theft by reducing the price of stolen art will be offset by the effect on legal error costs. Moreover, these error costs are borne *ex ante* by original owners as well as by bona fide purchasers, since most original owners were once bona fide purchasers and they don't want to be harassed by persons claiming to be previous owners. Hence, even original owners would favor the law's imposing some period of limitations on suits for the recovery of stolen or lost art.⁴¹

Concern with the legal error costs that are produced or exacerbated by long delay in bringing suit is the principal concern that lies behind statutes of limitations as well as the concern based most firmly on the economics of legal procedure. For example, much more time is allowed for suing for breach of a written contract than for suing for breach of an oral contract. Courts usually resolve disputes over written contracts without recourse to evidence outside the contract itself, and that evidence does not fade significantly with time (it fades a little, because the meanings of words and the various contextual clues to interpretation change

³⁸ Once it is feasible, he must sue promptly. This makes sense in terms of costs of legal error, discussed below.

³⁹ Discussed in the Guggenheim case cited earlier.

⁴⁰ Not spurious defenses. A plaintiff will not delay suit if the effect is to increase the probability that the defendant will be able to "fake" a defense to the suit. Only in the minority of cases in which the defendant can accelerate the plaintiff's suing, for example by bringing a suit for declaratory relief, can the defendant prevent the plaintiff from using the delay permitted by the statute of limitations to bolster a weak claim.

⁴¹ There is an analogy to the point that we make in our copyright article, that even copyright owners would, *ex ante*, prefer a finite to an infinite period of copyright protection. See Landes and Posner, note 29 above.

with time). Statutes of limitations tend also to be longer in criminal than in civil cases, perhaps because the higher standard of proof in the former type of case makes it more difficult for the plaintiff (the prosecutor) to fake a charge. For remember that a long statute of limitations encourages spurious claims but not spurious defenses.

Statutes of limitations that impose definite limitations on the time within which suit can be brought (as distinct from statutes of limitations that are rendered porous by the combined effect of the discovery rule and the doctrines of equitable tolling and equitable estoppel) are also said to be supported by the interest in “repose,” that is, the interest in knowing for certain what one’s rights are. Without statutes of limitations, property and other rights would be subject to additional contingencies besides changes in tax law, eminent domain, trespass, theft, and so on. If, however, there were no net positive effect of time on the costs of legal error, it would be difficult to see why these additional contingencies would be bad from a social standpoint. Owners of property would overinvest from that standpoint if they failed to discount the expected value of the investment by a probability less than one that the property was really theirs. In effect, the statute of limitations induces excessive reliance.⁴² The analysis is parallel to that of “coming to the nuisance,” a rightly rejected doctrine that if accepted would induce overinvestment in real property by causing owners to ignore changing values.⁴³ In contrast, the interest in repose is very great in labor cases, where an employer faces an accumulating and thoroughly uncertain obligation to pay a terminated worker backpay between the date of termination and the date of judgment in any suit brought by the worker (and there

⁴² In just the same way that always giving the victim of a breach of contract his full reliance damages may induce excessive reliance, given that there is some positive probability that the promisor will break the contract without fault. See Steven Shavell, “Damage Measures for Breach of Contract,” 11 *Bell Journal of Economics* 466 (1980).

⁴³ Landes and Posner, note 10 above, at 50-51.

may be many workers similarly affected).⁴⁴ So statutes of limitations in labor cases tend to be short.

In the case of art, the interest in repose is likely to be offset by art's durability and consumption value. Recall q , which relates the loss to the original owner and the gain to the purchaser forced eventually to return the work to the original owner to the amount of time that the work is missing. The longer the delay in bringing suit, the longer the period in which the purchaser (or his predecessor, if the work has changed hands more than once since its theft or loss) will have derived consumption benefits from the work by having it in his possession. These benefits, being themselves time-dependent, truncate the harm to him from being exposed to a long statute of limitations, which may place his possession at risk indefinitely.

A short statute of limitations would increase B 's expenditures on z , expenditures, that is, on concealing a purchased work of art from a possible claimant to be the original owner. If the statute of limitations, unqualified by the discovery rule or any tolling doctrine, expired automatically after the good faith purchaser had owned the work of art for, say, five years, he would have an enhanced incentive to conceal the work for that period, since successful concealment would confer the benefit of a completely secure title beginning in the sixth year. This incentive is smaller the longer the effective statute of limitations.

Our analysis suggests that the only certain cost of a long statute of limitations for suits to recover lost or stolen art is the cost of legal error resulting from the increased likelihood of spurious claims by so-called original owners who aren't really. The function that relates that cost to the length of the statute of limitations presents a difficult empirical question (one that depends in part on the capacity of particular legal systems to reconstruct past events accurately) that we have not attempted to explore or to trade off against the benefits of a long statute of limitations that we have been emphasizing.

⁴⁴ The uncertainty is due in part to the fact that the amount of backpay will be affected by whether the employee has obtained, or in the exercise of due diligence (to mitigate his damages) could have obtained, another job.

III. PRACTICAL CONSIDERATIONS BEARING ON THE CHOICE OF THE LEGAL RULE

We have now to consider what “real world” factors determine whether social welfare is more likely to be maximized by returning works to original owners or by letting current possessors retain them. Our model suggests a number of considerations, and by examining them we can offer a tentative conclusion regarding the economic rationality of the current legal rules applicable to disputes over the ownership of art works.

A. The Costs of Search and of Suppressing Information

Equations (I1) and (I2) show that the principal social costs of favoring original owners (either by increasing ϕ or setting it equal to 1) are the costs that both owners and buyers incur in influencing q : the former in searching for missing works, the latter in trying to reduce the probability that the works will be found or to delay their discovery. The equilibrium levels of these expenditures by both original owners and good faith purchasers are likely to be low, however. If so, this creates a presumption in favor of a legal rule that restores the work of art to its original owner.

On the owner’s side, an inexpensive and relatively productive form of search is simply to report the theft or lost work to one of the central registries of stolen works, of which the best known is the Art Loss Register. For a fee of only \$65 the Register will publish a photograph and brief description of the work in the magazine *IFAR Reports*. This alerts auction houses, art dealers, private collectors, museums, and other subscribers, making it unlikely that any reputable seller will offer the listed work for sale. If a subscriber discovers the whereabouts of a listed work, moreover, he has a financial incentive to report it, because normally a reward of 10 percent of the value of the work is offered for information leading to its return.

There is little else the owner can do to accelerate the recovery of the missing work. He can visit galleries, check catalogues, and make inquiry of other collectors of the artist’s work, but these are the sorts of activity that collectors engage in anyway, so that the incremental cost attributable to searching for a missing work is likely to be trivial. In sum, the optimal search expenditures of

owners are likely to be small even when $\phi=1$, because beyond the small cost of registering the lost work the marginal productivity of search is likely to diminish very rapidly. Indeed, owners may incur zero search costs simply because they are unaware that their work is missing. For example, after Chagall died his widow stashed more than 3,000 of his works in his studio. Some were stolen by a housekeeper, subsequently authenticated, and later sold by dealers involved in the scheme. Although the scheme was eventually discovered by a police informant and the parties prosecuted, the widow had been unaware of the thefts and had therefore incurred no costs to recover the stolen art. In the case mentioned earlier of a valuable Chagall gouache stolen by an employee from the Guggenheim, the museum was unaware of the theft for several years and did nothing about it even after learning of it. The record-keeping and inventory practices of many museums are out of date, and as a result a work can be missing for many years without the loss being discovered.

Some owners of missing works are reluctant to list them in a register of missing art. They prefer to take a wait-and-see approach, thinking the work more likely to resurface than if the loss is publicized and as a result the thief or his purchaser makes greater efforts to secrete it. In such a case, search expenditures will be close to zero. This was the Guggenheim's view, and it turned out to be right. The gouache was purchased from a reputable dealer and then openly displayed in a Manhattan apartment for more than twenty years. This enabled the Guggenheim to discover the location of the work, and once it did so it sued the current owners and won.⁴⁵ So we may not have been completely accurate when we said that listing a stolen work on a register of lost art is a cheap and effective method of owner self-protection. But the implication of this qualification is that the optimal

⁴⁵ The approach taken by the Guggenheim, while privately optimal in the sense of maximizing its chance of getting the work back, may be socially suboptimal. If all art thefts were publicized, the price of stolen works would plunge, discouraging theft, just as prohibiting ransom reduces the amount of kidnapping even though to the family of a kidnapped victim paying ransom may be value maximizing. This point is emphasized in Bibas, note 7 above.

expenditures on search by owners of lost art may be even slighter than we have suggested.

For some categories of work (antiques, for example), as yet no registry of lost works exists.⁴⁶ Here the benefits to an owner from even a slight amount of search may not exceed the cost when the works are small and portable, such as antique pocket watches or walking sticks, making them virtually impossible to find without the aid of a register. Then there will be no search and so the search costs actually incurred will approach zero despite a legal rule favoring original owners.

In sum, search expenditures by original owners appear to be low because additional expenditures beyond a minimal level are unlikely to be effective in terms of locating missing works more rapidly. This implies that a rule designed to encourage original owners to search more, as by conditioning their legal rights on continuing and extensive search efforts or by truncating the statute of limitations for suits to recover lost art from good faith purchasers, is unlikely to be socially cost-justified. As for the good faith purchaser, his expenditures on suppressing information are in many instances likely to be negligible.⁴⁷ As we saw earlier, the benefits of such spending would have to be discounted by the very low probability that the title is defective (very low because otherwise the buyer would not be a good faith purchaser). Of course when these expenditures are summed up over all good faith purchasers—for we saw that all will incur them even though only a small fraction will actually have purchased a work with a defective title—they may not be so negligible. But they are still likely to be slight. Most collectors and museums value the prestige and publicity that come from public display of their collection highly, making it very costly to keep major acquisitions secret. It is true that most museums do not display their entire collection, but

⁴⁶ Substitutes, however, are emerging. Firms now exist that do computerized searches of catalogues for categories of antiques and notify dealers in these works about recent thefts. See Sarah Jane Checkland, "To Catch a Thief," *Art & Auction* (Apr. 1995), p. 92.

⁴⁷ Unless the purchaser is very concerned about the danger of the theft of the work from himself and therefore conceals it. This is an unusual case, which we can ignore.

they would be unlikely to pay a high price for a work that they did not intend to display. We conclude that expenditures on z by good faith purchasers are likely to be small even if original owners have superior rights.⁴⁸

If our analysis is correct, the costs of favoring original owners (represented by the variables on the right-hand sides of equations (I1) and (I2)) are probably small, implying that the benefits, which we have no reason to believe are small, outweigh them. This implies in turn that the rule that maximizes social welfare is likely to entail ϕ equal or very close to 1: complete legal protection of the original owner vis-à-vis the good faith purchaser. This is the standard legal position in this as in most countries.⁴⁹ A purchaser, even though he honestly and reasonably believes that he has acquired a good title, does not acquire a good title from a thief; and there is no exception for art. In a legal contest between the original owner and the good faith purchaser, the former, with qualifications (which turn out to be rather minor as a practical matter) having mainly to do with the statute of limitations, which we examine in the last part of the paper, prevails.

B. A High Probability That the Title to the Work Is Defective

We said that if r (the risk known to the purchaser that his seller does not have good title) is high, B will not be a good faith purchaser, and we suggested that this was probably the efficient result. Let us examine the issue a little more closely, in light of our model. Suppose an Indian headdress or wooden effigy has been privately held and is now being offered for sale. The work may have been acquired many years ago from someone who believed that he could lawfully transfer the work. But now it appears that the item may be deemed the property of a tribe that is demanding its return. Similar problems can arise with regard to artifacts and antiquities imported from foreign countries that may be demanding their return on the ground that they are part of the national patrimony.

⁴⁸ We acknowledge, however, that these expenditures would be greater if pre-purchase investigative expenditures to determine good title, expenditures excluded from our formal model, were included.

⁴⁹ See Levmore, note 1 above.

Here there may be higher costs to a legal rule that favors the original owner. If B does buy the work, he may decide not to disclose his purchase or exhibit the work (implying a high z^*), lest by doing so he reveal it to a potential claimant. The costs of suppressing information may be particularly high because the potential claimants for these works are “original” not only to recent purchasers but also to most current possessors who have no desire to sell the works. *All* parties who currently possess works of this character—both buyers and owners, B 's and A 's in our model—will have an incentive to spend resources to suppress information about the works in the hope of reducing the likelihood that some third party will claim them. Since the number of persons who incur these expenditures will thus greatly exceed the number of current buyers, the potential savings from setting $\phi=0$ are likely to be substantial.

But there is a considerable paradox here. We seem to be suggesting that a purchaser who is *not* a purchaser in good faith (though he is an “innocent” purchaser, in our terminology, because he does not know that his seller cannot convey good title, although he suspects this may be the case) should get more legal protection than a good faith purchaser *because* he realizes that his title is contestable. The paradox arises from our having ignored the incentive to commit theft that the protection of the hypothetical innocent purchaser would create. A blanket rule setting $\phi=0$ for doubtful purchases would incite considerable additional expenditures on taking and on preventing the taking of works embraced by the rule. The rule makes more sense confined to works acquired at a time when society deemed the transaction lawful and the title acquired by it free of claims by any third parties. Such a rule would be supported by the thinking that underlies statutes of limitations.

Many dealers in artifacts and antiquities claim that returning disputed objects to religious or ethnic groups or to foreign nations would destroy the legitimate market in these works. The combination of a high p with an inability to distinguish between objects with and those without clouds on their title implies that the demand for and hence price (π) of these works would fall

sharply if ϕ changed rose to 1. Prices would decline even further because the quantity offered for sale would increase in response to the greater cost of holding these works—since the owners would now incur costs of suppressing information—and because of the greater risk that a court would divest the owner of the work. And greater efforts would be made to suppress information about the location of such works. Fewer works would be sold at public auctions and by reputable galleries and more would be sold privately, while the prices of those works that had impeccable provenance would rise as collectors shifted their demand to them.

These dire effects would only be temporary, however. Eventually, title would be securely vested in the religious, ethnic, or national entities that recovered them. Of course, this would also happen if title were securely vested in the current owners, who could then sell the works to religious, ethnic, or national entities if the latter valued them more. This result might be impeded, however, by the public good aspects of works claimed by large collectives. Each member has an incentive to underreveal the value that he attaches to the return of the works. This is an argument for adhering to the rule that the original owner prevails over the bona fide purchaser even in the case of antiquities.

C. The Buyer Knows That the Work Is Stolen

If $r=1$, we again have the paradox that the purchaser seems to have a stronger case than the bona fide purchaser for not returning the work of art to the original owner, because a purchaser's incentive to suppress information about the work is at its maximum when $p=1$ and $\phi =1$. Consider the speculation that there is a "Mr. Big"—a sinister "Dr. No" type character—who is responsible for the unsolved thefts of Old Masters paintings, including the \$300 million worth of paintings taken from the Gardner Museum in 1990. He is "reputed to have art stolen to order and gloat over it in some secret palace hideaway."⁵⁰ So if the law's only concern were with minimizing expenditures by "Mr. Big" and other buyers of stolen art on suppressing information about their recent "acquisitions," courts would never order the return of stolen works

⁵⁰ Checkland, note 45 above, at 93.

to the original owners. But we know from our earlier analysis of the economics of art theft that the social costs of such theft would be increased by such a rule, and those higher costs are unlikely to be offset by the reduction in concealment expenditures by thieves and “fences.”⁵¹ This is particularly so because the rule would greatly increase the costs of self-protection of all works of art, whereas the savings would be limited to the works that are stolen under the existing legal regime, which presumably deters most thefts. The rule entitling the original owner to the return of his property if it is found is a part of that deterrent regime, as we saw. We add that there are other benefits from deterring theft once we relax the assumption in our model that the number of works is fixed. In particular, the incentive to create new works and to preserve valuable existing works would be increased.

D. The Work Was Lost or Misplaced Rather Than Stolen

Suppose a good faith purchaser obtains a work that was lost or misplaced by the original owner rather than stolen. Maybe the original owner mistakenly discarded the work and it was eventually found by another party and sold to *B*. Or maybe the owner made feeble and sporadic efforts to get back a work that he had consigned to a gallery which later closed, disposed of the work to another merchant, and pocketed the proceeds, and years later *B* purchases it. If the heirs of the original owner seek the return of the work, should the law treat this case the same as a case of theft and thus order the work returned?

By assuming that the work was lost rather than stolen, we eliminate the costs of theft from equations (11) and (12) and therefore reduce the marginal benefits of raising ϕ or setting it equal to 1. Moreover, returning these works to original owners will discourage efforts both to find and to restore them. Lost works are often in terrible condition when found, and immediate restoration may be necessary to prevent irrevocable further deterioration.

Suppose an expenditure (x) by *A* of \$100 would prevent the loss of his work, which has a value of \$1,000. And suppose that if

⁵¹ This would be like arguing that the way to minimize the social costs of theft is to repeal the larceny laws so that stolen goods can circulate freely in the marketplace.

the work is lost and B finds and restores it, there will be a \$50 loss because the work will yield no benefits while it is missing. (There is no thief gloating over it in his hideaway.) And, finally, suppose that B 's cost of finding and restoring the work is \$200. Clearly it would be more efficient for A to spend \$100 to prevent the loss than for B to spend \$200 to find and restore the work. If the law won't order the work returned to A ($\phi=0$), he will spend the \$100 to avoid the \$1,000 loss. But if the law will order the return of his work ($\phi=1$), and A is confident that some B will find and restore it, A will not spend \$100 on x . He would prefer to incur the temporary loss of \$50. Although privately optimal, A 's decision is socially suboptimal because it reduces aggregate value by \$150—the \$200 cost of finding and restoration to B plus the \$50 temporary loss to A minus the \$100 savings in A 's expenditures on self-protection.

Why would B spend \$200 if the law entitled A to the return of the work? Because we are assuming that B is a good faith purchaser who therefore believes there is only a small probability that any work he purchases will have a defective title. If that probability is .1, B will spend \$200 to find and restore the work, because it is less than his expected benefit of \$855 (.9 x \$950). Actually his expected benefit is a bit less—revealing a further social cost of A 's indolence. B anticipates that works with defective titles will be returned to their original owners and so he will have an incentive to suppress (at a cost— z in our analysis—of, let us say, \$10) information about his acquisition, for example by refusing to display it publicly.

Not too much weight can be put on our numerical example, however. If the cost of owner self-protection were \$300 rather than \$100, the efficient solution would be for B to find and restore the work, for this would raise social welfare by \$40 (\$950—\$200—\$10 versus \$1000—\$300). If the law let B keep the work ($\phi=0$), A would have an incentive to spend \$300 to prevent the loss in the first place, which would be wasteful.

These examples suggest that the law should impose liability on the party best able to avoid the loss in the particular situation. That would be a negligence-type approach—and it might involve a great deal of uncertainty. The sequential nature of the parties'

expenditures suggests the feasibility of a less uncertain approach. If the law returns the work to the original owner but gives the buyer a right to recover his expenditures on finding and restoring it, *A* will choose self-protection when it is the less costly alternative and rely on *B*'s rescue efforts when that reliance would be the less costly alternative. For example, if self-protection costs \$100, *A* will rather self-protect than lose \$50 in services from the work plus a \$200 judgment in a suit brought by *B* to recover his costs. But if it costs \$300, then *A* will prefer to lose \$50 in services from the work and pay a \$200 judgment than to self-protect. *B* will be willing to incur the costs of finding and restoring a valuable work knowing that he will be compensated for his costs (including a reasonable profit, in order to motivate him to incur the costs of finding and restoration) even if a prior owner is successful in reclaiming it. Although the law of restitution, which would govern such a claim by *B*, is murky, we believe it likely that, provided *B*'s good faith were established along with the reasonableness of his expenditures, a court would allow him to recover his expenditures as an "agent of necessity."⁵² It might seem that merely being reimbursed for his expenditures would not be compensation enough to induce *B* to find and restore valuable works if *B* were a professional "rescuer" of lost art who encountered a number of "dry holes" before finding a valuable work, as opposed to an amateur who happens to stumble on a lost painting, having incurred no search costs. But we shall see in a moment that even in the case of the professional art "rescuer," reimbursement of his costs of finding and restoring the particular painting may be adequate to create the proper incentives.

Consider the fascinating case of *Mucha v. King*.⁵³ In 1920 the Czech Art Nouveau painter Alphonse Mucha consigned his large painting *Quo Vadis* to a gallery in Chicago. Before the painting could be sold, the market for Mucha's paintings collapsed. Mucha and later on his son Jiri made some efforts to get the painting back from the dealer, but the efforts were unsuccessful because of problems of communication (including language

⁵² See Landes and Posner, note 1 above, at 108-109.

⁵³ 792 F.2d 602 (7th Cir. 1986). Candor requires disclosure that the judicial coauthor of this paper wrote the opinion.

difficulties), lack of physical proximity, uncertainties about customs levies, and the disruption caused by World War II. Fifty years after receiving the consignment the gallery closed and liquidated its contents. The owner gave away some rolled-up paintings, one of which was *Quo Vadis*, to a hot-tubs merchant who had bought a \$5 fan at the liquidation sale. The merchant resold the painting (whose value he did not appreciate) to an art dealer for \$150. King, the defendant in the suit later brought by Jiri Mucha to get the painting back, bought it from the dealer for \$35,000 in 1981 and hired an expert to restore it at a cost of \$16,000. When a friend of King wrote Mucha for information about the painting, Mucha learned of its whereabouts and sued. The court ordered the painting returned to Jiri Mucha but permitted King to recover the costs he had incurred to restore the work. King did not seek a finder's fee.

The result in *Mucha* is consistent with our economic model. Distance, a language barrier, customs uncertainties, and a world war made the cost of owner self-protection very high. By permitting King to recover his expenses the law gave him an incentive to restore a work valued at \$500,000. True, he did not get back the \$35,000 that he had paid to buy the work. But assuming (a little doubtfully, in part because of the very low price) that he was a good faith purchaser, the *expected* benefit to him of finding and restoring the painting was strongly positive. For example, if he thought there was a 90 percent probability that the dealer who sold it to him had good title, the expected *net* profit of his purchase was \$399,000 ($.9 \times \$500,000 - \$35,000 - \$16,000$). Had the court forfeited the painting to King, on the theory that the Muchas should have done more to prevent the painting's being mislaid for so long, the effect would have been to encourage owners to incur large costs to prevent such mishaps. Entitling the owner to the return of the painting but entitling the finder-restorer to suitable compensation produces the optimal expenditure on preventing-restoring lost works. As we have emphasized, the owner will automatically incur the costs of preventing the loss when they are lower than "allowing" the work to be lost and then "rescued" for a fee. And because, as the facts of the *Mucha* case illustrate, the *expected* benefit to the bona fide purchaser of a lost painting is very high (since by definition of a

good faith purchaser the probability that the seller did not have good title to the painting is small), there will be substantial incentives to search for lost paintings even if the finder's fee does not attempt to compensate for the unsuccessful searches ("dry holes").

If the original owner of a work of art abandons it, then he cannot later claim it back, when it unexpectedly increases in value. This is the general rule of property law, and it is as applicable to art as to anything else. The case can be analyzed as a sale by the owner at a price of zero to a finder who values the work at a much higher price. There is no economic reason to undo the deal by returning the work to the former owner. The former owner can always buy it back from the finder if he values it more highly.

In *Erisoty v Rizik*,⁵⁴ to take just one more example, a badly damaged eighteenth-century painting by Giaquinto was found in a trash bag by a cleaning service hired to remove furniture from a home. The painting was acquired by Erisoty, a professional conservator of paintings, at auction. He then spent four years restoring the painting before it was discovered by the FBI and returned to its original owner, from whom it had been stolen more than thirty years earlier. Unlike *Quo Vadis*, the Giaquinto painting had been stolen, so that the social benefits of deterring theft strengthen the economic argument for returning the work to its owner. The original owner, moreover, appears to have taken reasonable precautions both to prevent the theft in the first place and to search for the missing work afterward. Consistent with our analysis, the court ruled that Erisoty could pursue a claim to recover for his services and expenses in restoring the work.

We speculate that cases involving disputes between original owners of *lost* art and good faith purchasers are less common than cases involving disputes between original owners of *stolen* art and good faith purchasers. The reason is that valuable art is less likely to be lost, but not less likely to be stolen, than art of little value. Moreover, the lower the value of the property in dispute, the less likely the dispute is to repay the expenses of litigation and so become a case. *Mucha* was the relatively unusual case in which

⁵⁴ 1995 WL 91406 (E.D.Pa. 1995).

art that was of little value when it was initially mislaid later became highly valuable.

E. The Entrustment Exception

Under the doctrine of entrustment, a good faith purchaser can prevail against the original owner in some circumstances. For example, if *A* entrusts *C*, a dealer, with a work of art, authorizing him to sell it, and *B* then buys the work, in the ordinary course of business, from *C*, who absconds with the proceeds of the sale, *B* acquires a good title even as against *A*.⁵⁵ Had the gallery to which Mucha consigned *Quo Vadis* sold it to King but kept the proceeds, King (provided of course that he was a purchaser in good faith) would have gotten good title. Mucha could proceed against the gallery for the amount he was due but if the gallery were broke he would be out of luck. And in *Erisoty*, had the Riziks consigned the painting to an auction house that kept the proceeds from the sale, Erisoty would have been the lawful owner. The key elements of the entrustment doctrine are that the original owner have entrusted the work to someone whom he authorized to sell it and that the subsequent transaction between that person and the buyer can be described as occurring in the ordinary course of business.

The doctrine can be defended on economic grounds even if there is no question of *A*'s having been careless in his choice of dealers. By definition, *A* wanted to sell the work, and so presumably fixed a price that exceeded the value of the work to him. *B* paid that price, implying that he values the work more than *A*. Hence the work ends up where it would have ended up in a completely voluntary market transaction. In this instance, paradoxically, the argument that the legal system is a poor adjudicator of competing values compared to the market—an argument made by law and economics scholars to explain why the common law protects entitlements by property rights, rather than by liability

⁵⁵ Uniform Commercial Code §§ 2-403(2), (3). See Patty Gerstenblith, "Picture Imperfect: Attempted Regulation of the Art Market," 29 *William and Mary Law Review* 501, 546-553 (1988). There are some closely related exceptions, both in the Code and at common law, to the general principle that the original owner prevails over the good faith purchaser, but we shall not explore them.

rules, when transaction costs are low—favors divesting the original owner of his entitlement. For if the law returned the work to *A* it would be making a judgment about competing values that is inconsistent with that of the market. It would be moving the work of art from a lower-valued to a higher-valued use.

Of course, the move would only be temporary. By hypothesis, there is a price—the price *B* paid—at which both *A* and *B* would be made better off by a sale from *A* to *B*. So if the law returned the work to *A*, he would promptly sell it back to *B*, unless the loss of the painting so impoverished *B* as to alter his demand. Setting that possibility to one side, we see that the law prevents unnecessary transaction costs by leaving the work with *B*.

This conclusion depends, however, on three assumptions. The first, which is innocuous although it reverses one of the simplifying assumptions in our model, is that *A* and *B* do not value the work of art in question equally. Our original, simplifying assumption was justified because most owners of works of art keep their works; only a few (the fraction denoted by α) voluntarily sell them. But here we are dealing with the set of cases in which the owner has decided to sell his painting at the market price rather than to retain it. In this case $V^b > V^a$, whereas in the case of theft $V^a > V^b$. “Mr. Big” doesn’t value the works he has stolen as much as the owners do, if only because value in economic analysis depends (with irrelevant exceptions) on willingness to pay. It is unlikely that he has enough money to buy the art he is thought to have stolen from the Gardner Museum, let alone to buy all the other art that he is thought to have stolen.

A second and more troublesome assumption of our analysis of the entrustment doctrine is that the dealer sold the work at the price fixed by the consignor. If the dealer is dishonest or tottering on the brink of insolvency—neither an unlikely contingency, since by assumption he is going to abscond with the proceeds of the sale—he may have sold it a lower price, and the presumption that *B* valued the work more highly than *A* fails. If, however, the dealer offers the work for a price substantially and inexplicably below the market price (which presumably was the price at which *A* authorized him to sell it), the purchaser’s bona fides may be called into question.

Third, the doctrine permits the good faith purchaser to acquire good title even if the work of art was entrusted to the seller for a purpose other than sale, for example restoration. Here there can be no presumption that the buyer values the work more than the original owner does. The economic rationale for allowing the good faith purchaser to keep the work is that as between him the original owner, the latter had the superior ability to avoid the mishap by more careful selection of the person or firm to which to entrust his work of art for repair, restoration, storage, transportation, appraisal, exhibition, etc.

The entrustment doctrine is a categorical exception to a categorical rule (original owner prevails over all purchasers). An alternative approach, which we hinted at in our reference to negligence, would be to substitute a *standard*, whereby the dispute between the original owner and the subsequent purchaser would be decided in accordance with which of the two was, in the particular circumstances of the case, the cheaper cost avoider. Then the owner who had been careless in preventing the theft of his work of art might lose out to a careful purchaser, even if the purchaser was not a good faith purchaser within the meaning of the law because he suspected that his seller's title might be bad; yet he expended the optimal amount of resources on investigating the seller's title without discovering that it was bad. This approach would involve greater cost, in legal and judicial resources and in uncertainty, than the categorical approach. So the question, which we have not attempted to investigate, is whether the categories make a sufficiently close fit with the distribution of cases that the benefits of greater individuation would fall short of the increment in cost.

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