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REPLY TO GRIMES: ILLUSORY DISTINCTIONS AND SCHISMS IN TYING LAW

KEITH N. HYLTON
MICHAEL SALINGER*

I. INTRODUCTION

We applaud Professor Grimes's thoughtful analysis[1] of the D.C. Circuit's decision in *United States v. Microsoft*[2] (*Microsoft III*) and of our article.[3] Professor Grimes has entered into precisely the debate that we argued should lay the foundation for the law on tying. In addition, one of Professor Grimes's themes is that the issues of tying law cannot be viewed in isolation but, instead, within a coherent philosophy of antitrust. We agree with him on that principle.

However, we do not agree with Professor Grimes in every detail or even in his major conclusions. The vast majority of instances of tying are beneficial and the prevalence of beneficial ties has important implications for tying doctrine.[4] In addition, the best way to place tying doctrine on economically sound footing and to make it consistent with other antitrust doctrines—including *Eastman Kodak*[5] —is to overturn the modified per se rule of *Jefferson Parish*.[6] Finally, Professor Grimes argues that informational asymmetries between buyers and sellers lie at the heart of the antitrust objection to tying and that the way to make tying doctrine

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[1] Warren S. Grimes, *The Antitrust Tying Law Schism: A Critique of* Microsoft III *and a Response to Hylton and Salinger*, 70 ANTITRUST L.J. 199 (2002).

[2] United States v. Microsoft Corp., 253 F.3d 34 (D.C. Cir. 2001) (*Microsoft III*).

[3] Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision-Theoretic Approach*, 69 ANTITRUST L.J. 469 (2001).

[4] *See infra* Part II.

[5] Eastman Kodak v. Image Technical Servs., Inc., 504 U.S. 541 (1992).

[6] Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2 (1984). *See infra* Parts II & V; Hylton & Salinger, *supra* note 3, at 470.

coherent is to formulate it in light of that essential issue.[7] We do not find him to be persuasive on this point. We do see a "schism" over tying law that has asymmetries at its heart, but the key asymmetry does not concern information.[8] Neither does it primarily concern the lock-in effects that lie at the heart of *Eastman Kodak*,[9] a case in which the fundamental issues are not exclusively, or even primarily, about tying. Rather, the major disagreements over tying policy concern what it means to have a symmetric policy in markets where firms are asymmetrically situated either because of the outcome of previous rounds of competition or because of their participation in other markets.[10]

II. THE RELATIVE FREQUENCY OF HARMFUL AND BENEFICIAL TIES

We argued in our article that the vast majority of tie-ins are beneficial, that judges would inevitably on occasion not be able to distinguish beneficial from harmful ties, and that, as a consequence, the standards for establishing an illegal tie should be high.[11] Professor Grimes challenges our assertion about the relative rate of beneficial and harmful ties and suggests that we place too little faith in judges to ascertain harmful ties.[12]

A. THE FREQUENCY OF HARMFUL TIES

We illustrated the decision-theoretic approach with hypothetical proportions of beneficial and harmful ties and of judicial error rates.[13] In reaction to that analysis, Professor Grimes writes, "Unfortunately, the authors offer only hypothesized data, with no evident means for empirical verification."[14] While Professor Grimes may have intended this as a criticism, we neither disagree with it nor do we take it as criticism. There should be no dispute that judicial error is possible. There should be no

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[7] Grimes, *supra* note 1, at 199.

[8] *See infra* Part III.A.

[9] *See infra* Part III.B.

[10] *See infra* Part III.C.

[11] Hylton & Salinger, *supra* note 3, at 498.

[12] Grimes, *supra* note 1, at 217.

[13] Hylton & Salinger, *supra* note 3, at 500. In our example, 99.9% of ties were beneficial. We did not intend that figure to be our subjective estimate of the fraction of tie-ins that are beneficial. It would be absurd to hazard such a guess rounded to the tenth of a percent. We did indicate, however, that our subjective estimate was that "the vast majority" of ties are beneficial.

[14] Grimes, *supra* note 1, at 215.

dispute that the possibility of judicial error is relevant for establishing legal standards.[15] There should be no dispute that, in light of the possibility of judicial error, the relative frequency of beneficial and harmful ties is relevant for decision making. Finally, there should be no dispute that these probabilities are not subject to precise, objective measurement. Under such circumstances, there is no choice but to make subjective estimates,[16] and whatever decision-making process one uses will necessarily embody implicit estimates.

Whether or not this combination of points is unfortunate, one should not pretend that the points are not true. Professor Grimes does, though, when he extols the "empiricism" of the courts. He would have courts review the facts of each case under a legal standard that assumes the arguments of each side to be equally plausible ex ante—or, as one suspects of a per se standard, assumes the plaintiff's arguments to be more plausible. It is precisely this approach that will lead to more false convictions than false acquittals if most ties are beneficial and if the law has not quite figured out how to tell beneficial from hamful ties.[17]

To be sure, this begs the question whether we were persuasive about our two main points: that the vast majority of ties are beneficial and that the literature has not identified with precision how to distinguish beneficial and harmful ties. With regard to the second point, we tried in our article to present the post-Chicago models in a form that would be accessible to the legal community.[18] It is our judgment[19] as economists

[15] This point is not specific to tying law or even to antitrust law. It is a general point about legal standards. Without the possibility of legal error, the distinction between a presumption of innocence and a presumption of guilt would not be fundamental.

[16] See ROBERT D. MASON, DOUGLAS A. LIND, & WILLIAM G. MARCHAL, STATISTICAL TECHNIQUES IN BUSINESS AND ECONOMICS 145–48 (10th ed. 1999) for a discussion of the need to use subjective estimates of probability when objective estimates are not available.

[17] One might argue that judges would be wise enough to take these prior probabilities into account in making their judgments. There are two reasons to question this argument, though. First, ignoring prior probabilities is one of the ways in which human decision making is systematically irrational. *See* Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124 (1974). Second, embodying a set of prior probabilities into legal standards will help make the prior probabilities used by different judges consistent with each other.

[18] Hylton & Salinger, *supra* note 3, at 488.

[19] Michael Whinston, the author of the seminal post-Chicago economics article on tying, recently observed that what is most striking about the state of economic knowledge about tying is how little we know. He also observed that tying doctrine should be based on the relative frequency of harmful and beneficial ties. *See* Michael D. Whinston, *Exclusivity and Tying in* U.S. v. Microsoft*: What We Know, and Don't Know*, 15 J. ECON. PERSP. 63, 79 (Spring 2001).

that the literature provides little guidance, but our intent was to let others judge for themselves.[20]

With respect to the first point, Professor Grimes argues that in making our judgment, we ignored the distinction between "bundles" and "tie-ins."[21] Bundles pass some initial screen for being obviously legal whereas tie-ins do not. To quote Professor Grimes, "a bundled sale does not become a tie-in unless there is substantial demand for the sale of the bundled products as separate items and unless the seller is able to force the bundled sale on an unwilling buyer."[22] The forcing criterion rules out packaged sales in which the individual components are available separately and the discount for the bundle is not too great. Thus, a tie-in, under Grimes's terms, involves a case where many consumers would purchase the bundled items separately and some of them would definitely prefer to buy one of the bundled items from a source other than the bundling seller.

We will use the term packaged sales to refer to the combination of bundles and tie-ins. Packaged sales in which the components are available separately are bundles. Of course, this requires some qualification. Even if the components are available separately, a packaged good could be a tie-in if the discount for the bundle is large enough.

As Professor Grimes points out, the *Jefferson Parish* standard embodies his distinction between bundles and tie-ins—and, for simplicity, we may treat his distinction as a rough demarcation of the boundary of the per se rule. Because tie-ins are a subset of packaged sales and those classified

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[20] Professor Grimes criticizes our review of this literature for having neglected the literature on raising rivals' costs. What is striking about the post-Chicago models of anticompetitive tying is, however, that raising rivals' costs is not the mechanism through which tying is anticompetitive. Rather, what makes tying anticompetitive is that it denies competitors adequate scale. The post-Chicago literature on tying is distinct from the post-Chicago literature on vertical integration, in which the anticompetitive mechanism is raising rivals' costs. *See* Michael A. Salinger, *Vertical Mergers and Market Foreclosure*, 103 Q.J. ECON. 373 (1988); Janusz A. Ordover et al., *Equilibrium Vertical Foreclosure*, 80 AM. ECON. REV. 127 (1990); Oliver Hart & Jean Tirole, *Vertical Mergers and Market Foreclosure*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY—MICROECONOMICS 205 (1990); Michael A. Salinger, *Vertical Mergers in Multi-Product Industries and Edgeworth's Paradox of Taxation*, 40 J. INDUS. ECON. 545 (1991). As we noted, this feature of the tying models makes them much more problematic as a foundation for antitrust hostility toward tying. *See* Hylton & Salinger, *supra* note 3, at 508.

[21] In essence, Professor Grimes's argument is that the law contains a filter for screening out cases so that most of those that pass the screen are indeed harmful. This argument is the "sophisticated" potential critique that we anticipated and attempted to address in our article. *See* Hylton & Salinger, *supra* note 3, at 501.

[22] Grimes, *supra* note 1, at 216.

as bundles are not anticompetitive, it is trivially true that the fraction of tie-ins that are anticompetitive is smaller than the fraction of packaged sales. When we argued that tie-ins are ubiquitous and that most tie-ins are beneficial, however, we meant tie-ins as we use the term here, not packaged goods.

To bolster his claim that tie-ins represent a small and especially dangerous subset of the larger set of packaged goods, Professor Grimes gives five examples of packaged goods that he labels as bundles rather than tie-ins: cold tablets, right and left shoes, degree programs, cars and steering wheels, and cameras and lenses.[23] Of these, we agree with him on the first two. The remaining examples are not so easily thrown into the bundles category and actually support our argument that tie-ins are widespread and, for the most part, beneficial.

Start with the cold tablet and the shoes. Because the individual medications are available separately, the combination of several medications into a single cold tablet does not involve forcing.[24] Similarly, the practice of selling shoes in pairs is not a tie-in. Although the individual items are not available separately, virtually everyone who wants shoes wants them in pairs, and the savings in packaging and transactions costs from selling them as pairs rather than individually are obviously non-trivial.[25]

We disagree with Professor Grimes's categorization of degree programs at law schools as bundles rather than tie-ins.[26] While some courses are available separately, it is likely that some courses taught in degree programs are difficult to obtain on a stand-alone basis.[27] Moreover, even when courses of the same title are offered in degree and non-degree programs, the non-degree versions might differ systematically in rigor and quality. Thus, degree programs are not analogous to cold tablets. Neither do degree programs fit the shoe category, in which virtually everyone has identical preferences for what should be in the package. Even if all students want the same mix of services, a significant number

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[23] *Id.*

[24] This example occurs in an industry in which the scale economies are small enough and the market is big enough that it is feasible to offer the individual items as well as the separate items.

[25] A single box for two shoes uses less material than would separate boxes for each shoe. Shoe sales staff can no doubt do their jobs more efficiently without having to search for the right and left shoes of a pair.

[26] This example is one we used. *See* Hylton & Salinger, *supra* note 3, at 486.

[27] For example, Boston University offers courses to students who are not degree candidates through Metropolitan College, its continuing education division. Some of the courses at Metropolitan College have similar titles and presumably similar content to courses offered exclusively to degree candidates. However, there are many courses offered at Boston University that have no close substitute at Metropolitan College.

of students might like to satisfy the requirements for a degree with courses from different schools.[28]

Consider the decision faced by students choosing between the Southwestern University School of Law (Southwestern) and one of its nearby competitors. The prospective students might prefer to have Professor Grimes's course on antitrust law but the other school's professor on some other topic. Competition on the merits would seem to dictate that the students choose. Based on our reading of the single-product test in *Jefferson Parish*, the different courses would count as separate products, and the packaging of courses that every school does counts as a tie-in under Grimes's terms, not a bundle.[29]

A fourth example that Professor Grimes categorizes as a bundle rather than a tie-in is steering wheels and cars.[30] We agree with this specific categorization, but there are other ways in which cars entail tie-ins. One is radios. It is not unusual for people to replace the radio that comes with a car with a more sophisticated sound system. Anyone who does so would presumably prefer to buy the car without the radio that comes as standard equipment and to receive a discount.[31]

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[28] The percentage of students wanting to take courses at other institutions is likely to be much greater than the percentage of sneaker customers who would want, say, a Nike left sneaker and a Reebok right sneaker.

[29] This example is not fanciful. With the development of Internet-delivered courses, it is quite plausible that students will ask for credit for courses taken online. If the legal standard permitted it, providers of those courses might have a sufficient stake to sue any college that refused to grant the credit. We do not necessarily mean to suggest that universities violate the law either in refusing non-degree students access to some of their courses or in placing restrictions on courses from outside the university that count toward a degree. There are many universities, so no university has the market power to be judged guilty of an illegal tie-in. The analogy to *Jefferson Parish* is quite close. For the per se rule to apply, the case must pass a high hurdle for market power. Surgery and degree programs differ in one important respect, however. The economic relationship between an educational institution and a student enrolled in a multi-year degree program is relatively long-term, and the contract governing it is incomplete. Students enroll with some expectations about what courses will be available during the term of the program and who will teach them. Consider a student who enrolls at Southwestern in part to take antitrust law from Professor Grimes. In the year that the student would like to take antitrust, suppose Professor Grimes goes on sabbatical or accepts a post at another school. Or, to introduce a little forcing, suppose Southwestern replaces Professor Grimes with a Chicago theorist. Under *Eastman Kodak*, it would seem that Southwestern Law School would be judged to have market power and that Southwestern would be guilty of an illegal tie-in if it did not allow a student to take the antitrust law course of his choice.

[30] Grimes, *supra* note 1, at 216.

[31] Also, car manufacturers make available a set of options that are either additions to or replacements of "standard equipment." In some cases, they make these options available primarily in certain combinations. An example of two options that might be combined is leather seats and power windows. Even if the options are technically offered separately, a customer might find it virtually impossible to find a car with one but not the other. It

Professor Grimes's fifth example, cameras and lenses, involves the same issues as the car example just discussed, so we see no need to deconstruct it. What these examples reveal, however, is the great uncertainty surrounding perhaps the most important boundary between lawful and unlawful packaging. It sounds persuasive, initially, to say that the law distinguishes between bundles and tie-ins and applies only to the latter. But packages are not labeled that way, and the basic characteristics of tie-ins, to the extent they can be defined, seem to be present in a vast array of packaged sales.

The common thread that links degree programs, cars, and many other examples is that despite the vast array of goods offered in the economy, they are in fact a small subset of the goods that conceivably could be offered. If there were no transaction costs or scale economies, it would be possible to tailor offerings to each customer's exact specification. But scale economies and transactions costs are an economic reality. As a consequence, consumers are routinely unable to buy exactly what they most prefer.

B. THE EFFICIENCY SCREEN

Professor Grimes suggests that the vast majority of packaged sales are "almost always procompetitive" and that the law does not apply to these sales.[32] Yet, under *Jefferson Parish,* the fact that a significant number of consumers would prefer to buy components in an unpackaged form is sufficient to make them separate goods and therefore potentially subject to the per se rule. So far as we can tell, there is nothing in the letter of the prevailing legal standard that allows a balancing of the interests of those who benefit from the packaging against those who are harmed by it, even when the gain from the packaging is obviously greater than the cost.

Indeed, *Jefferson Parish* offers a fairly clear refutation of the claim that the tying prohibition does not apply to obviously efficient or procompetitive cases. The trial court had held that because the closed anesthesiology department at East Jefferson Hospital was efficient, it did not violate the Sherman Act.[33] The Supreme Court, by upholding the trial court on the

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is likely that there are customers who would like one but not the other and, if they take the package, feel "forced" to take a feature they do not want.

[32] Grimes, *supra* note 1, at 216.

[33] Hyde v. Jefferson Parish Hosp. Dist. No. 2, 513 F. Supp 532, 540–42 (D. La. 1981), *rev'd,* 686 F.2d 286 (5th Cir. 1982), *rev'd,* 466 U.S. 2 (1984). The district court concluded:

> The evidence presented was that defendants instituted a closed system anesthesiology department because they believed the system resulted in the best quality of patient care. Specifically, the system insures twenty-four hour anesthesiology

completely different rationale that the market for anesthesiology services remained competitive in spite of the tie-in, implicitly rejected "obvious efficiency" as a basis for refusing to apply the tying prohibition.

Worse still, if one examines private tying litigation, one finds areas in which tying law has become an obstacle to some obviously efficient arrangements. Private tying lawsuits provide the ideal testing ground for determining how well the law stays within the neat boundaries drawn by Professor Grimes. The main reason for this is that private lawsuits are brought almost exclusively by businesses—interestingly, almost never consumers—that think they have been wrongly shut out of some substantial market. These cases should easily satisfy the two-pronged definition of a tie-in because there will be substantial demand for the packaged products separately, and a definite group of purchasers (usually the plaintiffs) that can point to a preferable alternative source.

Within the set of private lawsuits, it is not at all hard to find cases in which the courts were extremely reluctant to credit the seller's efficiency defense, even when one might call the defense obvious. For example, in *Anderson Foreign Motors, Inc. v. New England Toyota Distributor, Inc.*,[34] the plaintiff dealer contended the distributor's requirement that dealers accept delivery by the distributor's own trucks constituted an illegal tie-in, under Sherman Act Section 1, of the car and the delivery service. The distributor offered two fairly obvious customer goodwill (a type of efficiency) defenses. First, the distributor argued it was important to its business that dealers got cars on time; and, second, that it wanted to ensure that far-away dealers did not have a cost disadvantage relative to the dealers located close to the distributor. The court dismissed these defenses on the ground that there were less restrictive alternatives available. To allow the defendant to prevail, said the court, would go against the tradition of restricting goodwill defenses to narrow fact settings, in particular, where the tie-in is absolutely necessary to recognize the claimed efficiency.[35] (This should be a troubling result to Professor Grimes, as the goodwill defense is based, as we will make clear below,

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> coverage, aids in the control and standardization of operations because it is not necessary to accommodate physicians with outside commitments; it permits the physicians, nurses and other technicians in the department to develop a work routine and a proficiency with the equipment they use in patient treatment; and it increases the Board's ability to monitor the medical standards exercised because there are fewer individuals involved, maintenance of equipment is simplified and equipment breakdowns are minimized by limiting use to one group of physicians.

Id. at 540.

[34] 475 F. Supp. 973 (D. Mass. 1979).

[35] *Id.* at 984.

on the sort of obvious and important information concerns that he is so eager to see the law confront honestly.)

As another example of the way courts have treated obvious efficiencies under tying doctrine, consider *Siegel v. Chicken Delight*,[36] a case that spawned a wave of litigation between franchisors and franchisees. The franchisor (Chicken Delight) conditioned the grant of the franchise on the purchase of a list of items that were neither produced by the franchisor nor specially designed for the franchised business. The court held that Chicken Delight could not shield itself with the single-product defense because the items tied to the trademark (the tying "product") were commonplace articles.[37] To the extent the franchisor's concern was controlling the quality of these items, a less restrictive alternative was imposing quality requirements on franchisees.[38] One clear limit to this doctrine was later established in *Krehl v. Baskin-Robbins*,[39] where the court held that Baskin-Robbins could "tie" its trademark to the sale of its own ice cream because the two were an inseparable product.

Each of these cases—*Anderson*, *Chicken Delight*, and *Baskin-Robbins*—was essentially a contract dispute in which one side got the benefit of the bargain and then sought to have the contract declared a violation of the Sherman Act. It is certainly possible that a contract could be socially undesirable and therefore should not be enforced by a court. For example, a contract between two competitors to fix prices is obviously undesirable, as well as a violation of the Sherman Act. However, in each of these distributor-dealer cases there are highly plausible, one might say obvious, efficiencies involved in the contractual relationship. A franchisor, such as Chicken Delight, might find it preferable to reduce or eliminate franchise fees and instead use paper products as a metering device. To the extent this reduces monitoring costs (with respect to franchisee revenue and quality), it provides a savings dividend that can be split between the contracting parties. Why tying doctrine should interject itself as an obstacle to these efficiencies is a mystery.[40]

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[36] 448 F.2d 43 (9th Cir. 1971).

[37] *Id.* at 48–50.

[38] *Id.* at 51–52.

[39] 664 F.2d 1348 (9th Cir. 1982).

[40] Professor Grimes notes that *Chicken Delight* and *Anderson* were decided before *Jefferson Parish* and are, consequently, "of limited value as an indicator of current separate-products analysis." Grimes, *supra* note 1, at 218 n.64. This statement is valid with respect to *Chicken Delight*, but less so with respect to *Anderson*, where the court carefully worked through the separate-products test of *Jerrold Electronics* (United States v. Jerrold Elecs. Corp., 187 F. Supp. 545 (E.D. Pa. 1960), *aff'd per curiam*, 365 U.S. 567 (1961)). The separate-products test of *Jefferson Parish* is essentially the same as that of *Jerrold Electronics*. Still, we are willing to concede that since the 1970s courts have moved more in the direction of allowing

III. TAKING FULL ACCOUNT OF *EASTMAN KODAK*

Professor Grimes takes issue with our treatment of the *Eastman Kodak* case.[41] We argued that courts had found it difficult to reconcile *Jefferson Parish* and *Eastman Kodak* and that they had therefore viewed the latter as applying to the limited set of cases in which a firm changes policies on locked-in customers.[42] He disputes both our reading of how courts have used *Eastman Kodak* and questions whether it is appropriate to construe a Supreme Court decision so narrowly.

It remains true that, as a logical matter, one can reconcile the two decisions by viewing *Eastman Kodak* as applying to a limited set of circumstances. That said, we agree with Professor Grimes that reconciling the decisions through a tight construction of *Eastman Kodak* is problematic. However, the problem should be resolved by the Court overturning the modified per se rule of *Jefferson Parish* and instead adopting rule of reason analysis.

Eastman Kodak simply reinforces the fundamental problem of trying to retrofit the per se rule to conform to a desirable policy on tying. Thus, even if one can technically reconcile the two decisions, it is harder to reconcile the broad approaches of having the antitrust laws apply to relatively narrow examples of market power (*Eastman Kodak*) and to use the market power standard as a fine filter to limit what would otherwise be an overly broad tying standard (*Jefferson Parish*). Moreover, even if one does view tying policy in isolation, the strict market power screen of *Jefferson Parish* is not a sufficient fix. There will be cases when a company has market power in the tying good and tying is efficient (i.e., enhancing overall consumer welfare) even though a significant number of consumers are harmed by the tie. If tying doctrine is not modified to come to grips with that basic economic reality, then it will not be the policy that best serves consumers.

IV. ASYMMETRIES—INFORMATIONAL AND OTHERS

Professor Grimes writes in his introduction that the treatment of informational asymmetries is the source of the major disagreements about

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obvious efficiencies as defenses under the separate-products analysis. We do not, however, agree with Grimes that the limited scope for efficiency defenses under current doctrine is as great as it would be under a rule of reason analysis. For our views on the connection between efficiency and the *Jefferson Parish* separate-products analysis, *see* Hylton & Salinger, *supra* note 3, at 478. Indeed, the *Jefferson Parish* analysis, which focuses on consumer demand, could be viewed as a step backward from an earlier movement in the case law toward explicit consideration of efficiencies under the separate-products inquiry. *See* Jack Walters & Sons Corp. v. Morton Building, Inc., 737 F.2d 698, 703–04 (7th Cir. 1984).

[41] Grimes, *supra* note 1, at 219–20.

[42] Hylton & Salinger, *supra* note 3, at 481.

tying policy.[43] We agree that the treatment of asymmetries lies at the heart of many antitrust debates, including the ones on tying. We do not agree, however, that the fundamental asymmetries are informational.

A. INFORMATION ASYMMETRIES

As we argued above, companies, as a practical matter, can offer only a small subset of the goods that could potentially be offered.[44] Because consumers have heterogeneous preferences, they inevitably will settle for goods that do not meet their ideal specifications in many instances. And because most goods could be broken down into more than one component, it also is inevitable that consumers are forced to pay for a component they do not want to get one or more components that they do. These issues would arise even if all consumers were perfectly informed, and they lie at the heart of the controversies surrounding tying doctrine.

To be sure, informational asymmetries sometimes play a role in tying. Tying can occur precisely because some customers prefer not to devote the effort they would need to be informed about some aspect of their purchase. In surgery, for example, many patients might prefer to rely on the hospital's judgment about the qualification of the anesthesiologists rather than have to become sufficiently knowledgable to make their own judgment. Under such circumstances, we do not agree with Professor Grimes's assessment that tying policy should pay special attention to the preferences of the informed. Their preferences should count, but they should not count disproportionately.

Contrary to the views of Professor Grimes and *Kodak* proponents, we suspect that where information plays a substantial role in the decision to bundle, the vast majority of tie-ins are designed with a procompetitive purpose, to enhance the provision of information to uninformed customers. Hospitals that force patients to use anesthesiologists chosen by the hospital are motivated in part by the desire to *lower* the real cost of surgery to the patient by saving the patient the search expense of finding a good anesthesiologist or the injury expenses due to a bad anesthesiologist. The car manufacturer that provides the consumer with a car equipped with tires on it is saving the consumer the search expense of finding good tires and the injury expenses due to bad tires. Information is a real cost that manufacturers and consumers have a joint interest in

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[43] Grimes, *supra* note 1, at 199.

[44] *See supra* Part II.

minimizing.[45] If the law were to prevent car manufacturers from bundling tires with cars, informed consumers would continue to find good tires at a reasonable expense, but the average consumer most likely would be worse off. To be sure, the manufacturer could give the consumer a detailed set of specifications that car tires should meet. But once the consumer ventured out into the market on his own, he would be met with the babel of conflicting claims from tire sellers.

The ironic part of the *Kodak* proponents' plea to "take information seriously" is that they really want only certain information arguments favorable to their assumptions—e.g., the lock-in argument—to be heard by courts. The defense that tying is a method of protecting consumer goodwill is, in essence, an information argument. Courts have been hostile to the goodwill defense—and *Kodak* proponents probably view this hostility as well founded. However, any effort to make tying doctrine a more receptive environment for information arguments should include a plea to expand the goodwill defense beyond the beachhead established in the *Jerrold Electronics* decision. And once courts really start taking information seriously, we will have arrived at something close to a rule of reason standard.

B. ASYMMETRIES WITH DURABLES

Eastman Kodak raises the issue of the role of antitrust in preventing the exercise of short-run monopoly power. This is not exclusively or even primarily about tying, but it does raise a fundamental issue. Those who enter into long-term economic relationships, including the purchasers of durable equipment that require supplies or maintenance, reasonably can be expected to understand that they should be concerned about lifetime costs, not just the initial price. When a supplier takes an action that raises the price to its existing customers, is that an antitrust violation?

There are a number of arguments that one could make as to why it should not be. First, one might argue that if the firm continues to

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[45] In *United States v. Jerrold Electronics Corp*, 187 F. Supp. 545 (E.D. Pa. 1960), *aff'd per curiam*, 365 U.S. 567 (1961), the Court ruled that Jerrold had to stop selling its cable television systems with installation and maintenance even though there were valid business reasons for doing so. The Court's reason was that Jerrold had less restrictive means at its disposal in order to accomplish the same purpose. Specifically, it could try to persuade purchasers that its installation and maintenance services were worth the expense. This reasoning treats information and other transactions costs as being something other than real costs. It is perfectly plausible that if Jerrold had operated in a competitive business, it might have well decided that selling systems without maintenance was unprofitable. Such a decision would be similar to a university deciding to offer courses only to degree candidates. In light of the fact that Jerrold's prospects of getting paid depended on the functioning of the system, such a decision would seem particularly defensible.

participate in a competitive market for new customers (who are concerned about lifetime costs), the price increases on the "back end" of the relationship ultimately hurt it.[46] A second argument concerns reputation effects. Under this argument, although a seller might well be able to exploit its existing customers while appearing to remain competitive in attracting new customers, companies have an incentive to establish reputations for not abusing existing customers. A third argument is that customers likely would recognize the importance of lifetime costs and would seek contractual protection against this sort of opportunistic behavior. To the extent that they do, one aspect of the competition among sellers to make the initial sale would be to provide such protection.

We are sympathetic to Professor Grimes's point that these arguments, which are typical of the Chicago style, by themselves are not completely persuasive. However, these arguments are not, at their core, specifically about tying.[47] A seller in a long-term relationship can behave opportunistically with respect to its customers simply by raising prices.[48] A restrictive tying policy cannot by itself prevent this class of behavior.

C. Asymmetric Competitive Positions

To the extent deep divides exist in the antitrust community that are exclusively about tying, they concern situations in which competing firms have asymmetric market positions.[49] Asymmetries can arise when there are successive generations of products. The firm that dominates at one time enters the competition for the next generation in a fundamentally different position from the firms competing to replace it.[50] Asymmetries also arise when one of the firms competing in one product has a

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[46] As several commentators have observed, however, this argument by itself is not persuasive. *See* Grimes, *supra* note 1, at 201 n.9. Consider a durable good for which the market expected lifetime price is $2000. Suppose a company charges $1000 initially with the mutual understanding that $1000 in maintenance will follow. Once the company sells a certain number of units at $1000, raising the price of maintenance to $1500 while cutting the initial price to $500 would keep the company competitive for new customers while leaving the existing customers no choice but to pay $500 more than was anticipated.

[47] As noted in Part II *supra*, these issues come up in the tying context because the standards in tying doctrine are favorable to plaintiffs.

[48] Specifically, Kodak could have accomplished the anticompetitive objective alleged in the case by increasing the prices of replacement parts.

[49] *Compare* Richard J. Gilbert & Michael L. Katz, *An Economist's Guide to* U.S. v. Microsoft, 15 J. ECON. PERSP. 25 (Spring 2001) *with* Benjamin Klein, *The* Microsoft *Case: What Can a Dominant Firm Do to Defend Its Market Position?* 15 J. ECON. PERSP. 45 (Spring 2001).

[50] Richard Gilbert, *Preemptive Competition*, *in* NEW DEVELOPMENTS IN THE ANALYSIS OF MARKET STRUCTURE 90 (Joseph Stiglitz & Frank Mathewson eds., 1986); Richard Gilbert & David Newbery, *Preemptive Patenting and the Persistence of Monopoly*, 72 AM. ECON. REV. 514 (1982).

dominant position in a complementary product.[51] Both classes of situations raise issues that are specifically about tying, and both are at play in *Microsoft III.*

In the part of our article surveying post-Chicago models of tying, we argued that the literature had established the theoretical possibility of abuse in these situations. We concluded, though, that using these models to justify antitrust hostility toward tying is problematic.[52] Consider first the complementary products case. Widgets and gadgets are complements. Firm A is dominant in widgets and is one of the firms competing in gadgets. The structure of the gadget market—perhaps because of production scale economies or perhaps because of network effects—is likely to be imperfectly competitive. A broad policy issue is whether it is desirable to handicap Firm A in the gadget market by placing restrictions on how aggressively it competes. One might argue that there should be no restrictions on normal competitive practices—pricing and quality decisions—but tying should not be allowed. This position becomes harder to maintain, however, once Firm A wants to charge a price of zero for gadgets. Providing a free gadget with every widget is indistinguishable from tying.

Now consider the case of successive generations of competition. Again, Firm A is dominant in the current generation of widgets. Tying can come into play in two ways. First, widgets themselves have potentially separable components. A competitor has what it believes to be a superior version of one but not both of the components. It might like to force firm A to unbundle its offering. By the same token, suppose that the next generation of widgets will have new features and that one of the possible new features is a gadget. If antitrust law allows Firm A's decision to include a gadget to be challenged as an illegal tie, Firm A may be barred from making an improvement that its competitors are free to make.

The great schisms in antitrust concern these kinds of situations. On the one hand, it is an important objective of antitrust policy to make sure that Firm A's dominance of the current generation of widgets is not unfairly or abusively exploited in the next generation of widgets or gadgets. By the same token, however, a policy that biases the successive rounds of competition so that they are won by different companies or that different companies prevail in the competitions for complementary products also is undesirable because it blocks real efficiencies.

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[51] Michael D. Whinston, *Tying, Foreclosure, and Exclusion,* 80 AM. ECON. REV. 837 (1990).

[52] Hylton & Salinger, *supra* note 3, at 488.

V. IMPLICATIONS (WITHIN THE CONTEXT OF DECISION THEORY)

Current tying doctrine does not leave significant room for an efficiency defense. At the very least, we believe that the modified per se rule should be abandoned for a rule of reason that would allow such a defense. The possibilities for the legal standards, however, are much richer than a choice among per se legality, per se illegality, and the rule of reason. The details of the standards for what has to be established and by whom are crucial.

In comparing Chicago School theorists with what he calls antitrust traditionalists, Professor Grimes characterizes the latter as empiricists. By this, he presumably means that the Chicago School arguments are entirely theoretical and that they often are "proven" wrong by careful examination of the facts of individual cases. We submit, though, that the facts are rarely as clear as Professor Grimes suggests. Consider the following thought experiment: Is it conceivable that a different judge would have reached a different conclusion in *Microsoft III* than did Judge Jackson? If so, then one of them would have had to be wrong. Who the theorists are and who the empiricists are in this debate are not clear. At best, both the Chicago and post-Chicago literatures represent theory that formalizes casual empiricism.

Sensible policy must take into account the risk of judicial error. Indeed, many aspects of antitrust policy already do just that. Consider, for example, the different treatments of predatory pricing and price fixing. To prevail in the former, a plaintiff must demonstrate a dangerous probability of success. To prevail in the latter, a plaintiff need not show that the price fixing was effective, in the sense of changing the market price. The difference in the two standards is due to differences in error costs. False convictions—both actual and potential—in predatory pricing cases are particularly damaging because they penalize competitive behavior. False convictions in price fixing do not pose the same risk.

Decision theory is clear that in the presence of uncertainty about the competitive effects of tying, the relative frequencies of abusive and beneficial ties are a relevant consideration. Previous articles about decision-theoretic approaches to legal doctrine have stressed the role of relative error costs (which may be just as hard to determine objectively as the relative probabilities). We believe that one of the primary contributions of our article was to point out the well-established but generally overlooked relevance of prior probabilities.[53] While the system must rely

[53] It is even well established that the relevance of prior probabilities is typically overlooked. *See* Kahneman & Tversky, *supra* note 17.

on judges to weigh the facts of individual cases, it is not the role of individual judges to assess the prior probabilities in every case. Rather, these need to be embodied in the legal standards.

Although highly relevant for tying policy, the relative frequencies of beneficial and harmful ties are not objectively observable. There is no alternative to basing the policy on subjective estimates. We have argued that beneficial tying is much more common than harmful tying. Professor Grimes has argued the opposite case. Ultimately, it is the judgment of the people who establish the legal standards through laws and the decisions that interpret them that matter. We hope that our article will stimulate others to offer assessments of the relative frequencies. We persist in our assertion, though, that tying is everywhere and that those who support antitrust hostility to tying must be much clearer than they have been on when tying is harmful.