

UPDATING THE PRIVATE LAW OF PATENT CONTRACTING

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ABSTRACT

Patents are hybrid instruments: as publicly granted property rights, they are the creature of statutes designed to maximize social welfare and further other public policies. But they are also private entitlements that serve as the centerpiece to numerous economically important private orderings. I begin this paper by carefully separating out these two dimensions of patent rights, the public-regarding and the private-facing: patents as public grants, but also private entitlements.

Understanding the dual nature of patent rights leads to a novel critique of the Supreme Court doctrine of patent misuse that originated in the 1940s and continued through the 1970s. Misuse doctrine in this era largely ignored the private entitlement side of patent law. The Court repeatedly found that certain bilateral contracts “extend” the state-granted patent right in various ways that upset the legislative balance behind the Patent Act. These cases, as with cases on preemption of state IP law, championed the supremacy of federal policy. The Court was not shy about finding incursions into that supremacy, but in the case of state contract law, this was a mistake. Contracts are a natural complement to IP entitlements, which must often be transferred, aggregated, bundled, etc., in the course of the modern economy. The Court muddled important conceptual issues as well: while a private contract can, of course, affect third parties in important ways, a patent, as property, cannot be “extended” by contract in a way that binds third parties.

The Patent Misuse doctrine is also not needed as an adjunct to antitrust law. Potentially anticompetitive patent

contracts can be looked at using conventional antitrust law as well as judicious application of the longstanding “void as against public policy” doctrine within contract law.

*This is an especially auspicious time for patent law to shift from its tradition of hostility toward licensing to a much more appreciative and supportive stance. A wave of contemporary research shows how important licensing and other patent-centered transactions are, especially for new entrants and specialized input supplier firms—crucial parts of an effective innovation ecosystem. With this research, armed with a more analytically defensible understanding of patent contract doctrine, I make some normative suggestions designed to encourage and support patent licensing. Specifically, I argue that (a) private parties should be able to bargain over whether a licensee has the right to challenge licensed patents (i.e., overrule *Lear v. Adkins* (1969)), and (b) private parties should usually be permitted to agree to pay royalties after a patent expires or is invalidated (i.e., overrule *Brulotte v. Thys* (1964)).*

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I. INTRODUCTION: PATENT CONTRACTS

The law of patent contracts is private law. Patents themselves are hybrid rights granted by a federal agency under a federal statute. So surely creatures of public law, but endowed with the “attributes of personal property” as the Patent Act says. Patents are routinely assigned, licensed, waived, put up as collateral for loans, and so on – classic earmarks of a private law entitlement. Patents are publicly granted rights that become privately owned assets. They are and have been the centerpiece of a wide range of private orderings: deals, business models, institutions, and so on.

Despite the importance of patents in private ordering, modern doctrine sees patent contracts primarily as opportunities to protect the public interest. Patent licensees, in particular, can qualify for powerful public-regarding defenses in the event of a breach. A licensee who challenges the validity of a licensed patent can walk away from a licensing contract, having performed the public service of ridding the world of a wrongly granted patent. A licensee that roots out certain types of contracts between the patent owner and third parties can likewise walk free of liability, having exposed the patent owner’s anticompetitive patent deployment scheme. In each case, the licensee is doing the public’s work and so receives the award of a successful defense to breach of a licensing agreement or patent infringement.

It is time we injected more private law into the law of patent contracts. That is my simple thesis. This requires two primary steps. First is to revisit relevant Supreme Court caselaw from the 1940s to the 1960s. In this era, the Court consistently emphasized the potentially harmful social effects of arrangements made and enforced in the form of patent contracts. It seemed that patent contracts had become inherently suspect, and licensees assumed the crucial role of whistleblowers, calling out the depredations of patent owners. Some features of these cases have been overruled or limited in the intervening years, but their hostile spirit continues to infuse patent contract doctrine. A concerted campaign by the Supreme Court, or a directed legislative intervention, is in order.

The second major change I suggest is mostly conceptual, though it does entail some minor doctrinal adjustments. We need a much greater appreciation for the importance of patent contracts in a wide array of valuable forms of private ordering. We need to understand the transactional and contractual uses of patents and how patents facilitate exchange and cooperation. My discussion in section III.C of “patent anchoring” – patent-centered contracts that enable the exchange of sensitive know-how – is an example of how patent contracts contribute to building relational trust. History, too, contains a full record of the many ways businesses use patents in pursuit of economic gain.¹ Whether examples are drawn from the past or present, the overall point remains: Instead of seeing *contracts* as a threat to *patent* policy, we need to recognize *patents* for their ability to contribute uniquely to *contracts*, and the policies

¹ See ROBERT P. MERGES, AMERICAN PATENT LAW: A BUSINESS AND ECONOMIC HISTORY 71, 135 (2023). Two examples from this book are: the use of fractional patent shares as a form of quasi-equity to raise investment capital in the early American Republic and the use of exclusive territorial patent assignments to construct regional franchise networks in the later nineteenth century. *Id.*

that contract support.² This includes overall innovation policy. In section III below, I explain why contracts are important to innovation policy – chiefly because they contribute to the viability of standalone technology firms. The ability to commercialize ideas and products through contracts allows small, specialized firms to escape the innovation-killing impetus toward integration and industry concentration.

To emphasize how contracts modify the default patent entitlement granted by the state is to take a patent-centric view and, hence, public law-centric. To emphasize the part patents play in structuring bilateral contracts is to take a contract-centric view, putting the parties to the transaction – the contractual “dyad” – at the center of things. The dyadic orientation is at the heart of private law doctrine as well as private law theory. So, it is fair to say that I am concerned with the part patents play in dyadic relations governed by private law.³

The dyadic orientation is often visible in state court decisions. State courts routinely handle disputes over patent contracts. While a direct assertion of patent infringement must be heard in federal court, patent-related matters that relate to contract performance and breach are within state

² *Cf. id.* at 480 (arguing, based on historical examples, that patent policy should recognize patents for their transactional “capabilities” as much as the transaction *costs* of dealing with them).

³ Aside from contracts, tort law is the other cornerstone field in private law. There is a rich and growing literature that assimilates patent law, and other branches of IP law, into the contemporary analysis of tort law, with a particular emphasis on the growing disjunction between strict liability in IP infringement and the modern emphasis on fault and culpability. *See, e.g.*, Robert P. Merges, Patent Infringement, Private Law, and Liability Standards (January 2024) (unpublished Working Paper) (on file with author). From the private law view, patents are of interest because of both “stealing” (infringement) and “dealing” (contracting).

court jurisdiction.⁴ The most common example is where the scope of contractual duties is set by reference to one or more claims in one or more patents. Deciding whether a licensee has breached by operating outside the specified bounds of the contract requires the court to interpret and apply the patent claims. Likewise, licensees sometimes raise the defense that the contract is void for lack of consideration because the patent in question is invalid. This too requires a state court ruling on an issue that is typically the province of (federal) patent law. State court decisions regarding validity and scope are not binding on third parties; the issues are treated as part of a purely private dispute between contracting parties, and their impact is accordingly limited. However, these decisions offer insight into a more dyadic view of patent contracts. In a few instances, they make doctrinal adjustments that align patent law more closely with the goal of interparty fairness that lies at the heart of the private law of patent contracts.⁵

A. *What is Private Law Anyway?*

At its broadest, private law just means torts, contracts, restitution, and other disciplines that govern legal dealings between private persons. If public law is about state-citizen relations, private law centers on citizen-to-citizen interactions. Contemporary private law theory diverges from the classic form, which saw private law as an insular and self-contained body of rules and principles deployed to resolve private conflicts. Today, the

⁴ See 28 U.S.C. § 1338.

⁵ See *infra* Section IV.C.1.a. Some courts have applied the patent law “doctrine of equivalents,” an equitable doctrine that stretches the outer bounds of patent claims to prevent unfair appropriation, so as to prevent a former patent licensee from unfairly evading a contract.

public/private boundary is far more permeable.⁶ Private law rules exist alongside public law; they are infused, modified, and constrained by the public-regarding policies embedded in public law. But even in modified form, private law helps private parties navigate their interactions with other private parties. It concentrates on what is fair between private parties in a given private interaction – an accident, for example, or a contract. Private law largely avoids public law’s concern with society-wide fairness in favor of close attention to interpersonal, situational fairness. Distributive justice is one aspect to consider, but the primary emphasis is on *relational justice*. Society matters, of course, but the heart of the matter is the contracting parties – the contractual *dyad*.

The law of patent contracts has drifted too far toward a concern with public policy. Opportunistic licensees have, at times, taken advantage, escaping well-deserved liability for breach under the rubric of acting as “private attorneys general.” Society benefits (though perhaps not very much), but patent owners suffer. I do not contend that patents are pure private law entitlements or that if we just turn the clock back to the 1890s, all would be well. However, I do argue that patents have a distinct private law dimension that ought to matter more than it currently does.

1. The Private Law Dyad

Once the validity of a patent is established as between contracting parties, judicial attention shifts—and should shift even more, I think—to the contracting parties and their private agreement. Having dispensed with the “public law moment” in patent enforcement (validity), the remainder of the dispute should be seen primarily as a

⁶ See, e.g., JOHN C.P. GOLDBERG AND BENJAMIN C. ZIPURSKY, *RECOGNIZING WRONGS* 67 (2020) (speaking of scholarly approaches that would, in individual cases and overall, “recast[] . . . tort law as public law”).

private law matter. The relevant unit of analysis will be the pair of private parties to the contract: what they agreed, how they performed, and what is fair between them. The two-party dyad is at the center of private party interactions. So, in evaluating those interactions, justice should be dispensed so as to reach fair outcomes within the dyad. This differs, of course, from the distributive justice that is furthered by statutes, regulations, and other public laws such as the Patent Act. Public law is enacted for the overall good of society, and its fairness must be judged at that societal level. But once past the validity stage, “dyadic validity” is fixed. That is when distributive concerns largely drop away, and dyadic concerns come to the fore. This is the private law phase of patent contract enforcement, the phase governed chiefly by the logic of inter-party fairness or corrective justice.

Private law in its simple form is a juridical world built for two. In this form entitlements (rights) and obligations are reciprocal and interlocking; they are “correlative”, theorists say:

This correlativity reflects the defining structural feature of [private law] liability itself: that liability of a particular defendant is always a liability to a particular plaintiff. Correlatively structured reasons focus not on either party separately from the other but on the relationship between them as doer and sufferer of the same injustice...Every private-law right implies that others are under a duty not to infringe it; similarly, in private law, no duty stands free of its corresponding right. Right and duty are correlated when the plaintiff's right is the basis of the defendant's duty and, conversely, when the scope of that duty includes the kind of right-infringement that the plaintiff suffered.⁷

⁷ Ernest J. Weinrib, *Private Law and Public Right*, 61 U. Toronto L. Rev. 191, 192 (2011). The substance of the right, again, is supplied by public statute, then supplemented by the contract terms.

Patent licensing duties have a dual or hybrid nature: part statutory, part purely contractual.⁸ Procedurally, dyadic scope includes things like state court determinations of claim meaning (to judge breach). Substantively, because patents are often intertwined with contract terms and transactional arrangements, e.g., in package licensing, tie-ins, and other common arrangements, the distinctive role of the patent in each contract or transaction must be acknowledged.

2. Non-Nostalgic Private Law

Before the 1940s, there was a more laissez-faire body of patent contract doctrine, shaped largely during the Gilded Age.⁹ This older body of law had some virtues. Though I direct some praise to aspects of it, let me clarify right at the outset that this Article is not a full-throated call to “restore the Golden Age” by fully restoring a nineteenth-century common law sensibility. Other voices have been raised to sing that tune, but that is not what is on offer here.

By my lights, to simply restore the pre-1940 doctrine that was applied to patent contracts would fail to recognize the ubiquity of patent validity challenges as a decisive difference compared to the nineteenth-century landscape. The continuous and open-ended challenges to patent validity in the current era mean that patent ownership has a contingent quality. It is no longer accurate to employ old-fashioned talk of patents as rights that, upon issuance, vest fully in private hands. This complete-vesting-upon-issue argument is useful to those who advocate for a vigorous constitutional “takings” regime in IP law. The argument has also been brought to bear in the current assault on the *Chevron* doctrine and the “administrative state” more generally. The complete-vesting theory was employed in a recent case arguing that patent owners should be protected

⁸ Over concern with potential third party effects, in era when patent taken to confer per se market power in a contract setting, e.g., old tie-in cases.

⁹ Merges, *supra* note 1, at 115.

against post-patent-issuance administrative invalidation (on the theory that only Article III courts may revoke a vested property right). However, because patent validity is routinely challenged, and because those challenges are often (over 50% of the time) successful, the initial grant of a patent is more of a sort of “shallow vesting”. Only after a patent has survived a validity challenge, and then only as between the two parties to the patent challenge/enforcement action, does it become “deeply vested”.

B. Patent Rights as Private Law Entitlement

Private law deals with the interactions of private parties. Interacting with another can cause all sorts of consequences. Someone who injures you interferes with your normal expectation of bodily integrity. Someone who confers a benefit on you leaves you better off. And someone who reaches a binding agreement with you affects your justifiable expectations about some future state of affairs.

Private law conceptualizes two-party interactions as beginning from some baseline set of entitlements. Injury unfairly lowers these baselines. Liability for wrongs such as a tort or breach of contract results from a private party act that causes an unjustified downward shift in the baseline level of another’s entitlement. Remedies flow quite naturally: one who suffers harm (i.e., interference with a legally recognized baseline entitlement) deserves compensation from the other, as measured by the drop in entitlement value. In this way, both liability and appropriate remedies are thought of in terms of repair, restoration, and correction. The label for the type of justice is said to form the solid core of private law: corrective justice.

This is a very specific form of justice. Its distinct features help explain why many theorists traditionally see private law as quite separate and apart from the public law of statutes, regulations, and all other dictates that govern

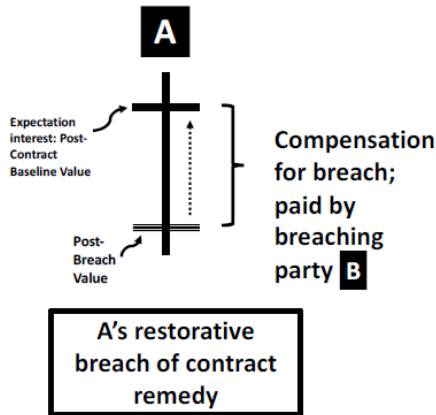
relations between citizens and their state. Public law typically operates under principles of distributive justice. A law is passed if it is adjudged to serve the overall interests of society, improving social welfare. Entitlements are granted, withheld, and revoked, all according to what is best for the greatest number of citizens. Though there is more than one way to assess the distributive impacts of a legal rule, they all share the same basic notion: what is best, most fair, for society as a whole.

Corrective justice does not generally work this way. Its central concern is not the fair distribution of entitlements, wealth, etc. Entitlement endowments are a given; they are the starting point for this type of justice. It trains attention on the effect of private party interactions on *baseline* entitlement levels. The idea of private law is that, *given* some starting-point entitlements, private parties ought to refrain from seriously harming others (i.e., to be fair with them). If they are not, liability and compensation will be measured according to the baseline level of the injured party's entitlement. In the prototypical case, society-wide policies and values do not enter directly into the resolution of private party disputes. All that matters is (1) private entitlements, that are (2) impacted by harmful private party interactions, and (3) that therefore signal a need to correct for these impacts and restore entitlement values to their initial level.

1. Establishing a Baseline for Patent-Related Contracts

Patent-based contracts, like most business-related contracting, aim to benefit both parties. A contract to apply a patent owner's technology to a new field or product line; a contract to integrate a patented component into the licensee's end product; a contract to take a new product idea from prototype to commercial product—these are typical examples of deals where both parties might benefit. From a

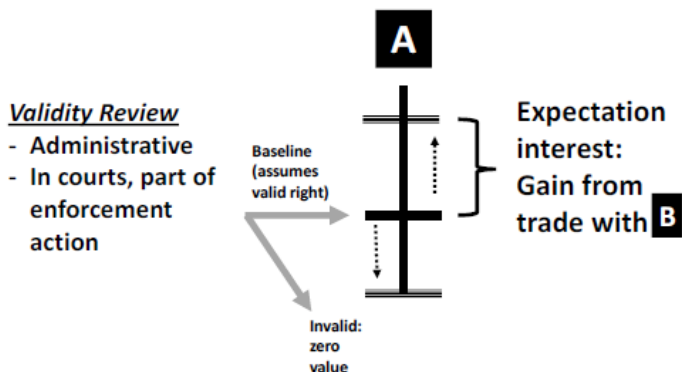
private law perspective, contract enforcement is primarily aimed at ensuring the victim of a breach receives their expected benefit: its expectation interest. To correct for a breach is to vindicate this interest by awarding the breach victim what it had expected (in money equivalent, or sometimes in kind) under the contract. As here:



However, when a patent is at the heart of a contract, there is an important warmup to the main event of private enforcement: the validity stage, as mentioned. The licensee may (by default at least) challenge patent validity. So, the patent owning party to the contract faces the prospect that its patent may be invalidated in the course of contract enforcement. Unless the licensee waives its right to challenge patent validity, and assuming no unrelated third party happens to invalidate the patent in the course of the contract dispute,¹⁰ a patent owner must first defend its

¹⁰ In a patent infringement action by patent owner A against infringer B, even after B has unsuccessfully argued invalidity, a separate lawsuit under the same patent by A against a third party (C) may produce a ruling that the patent claims are invalid. If this occurs before the enforcement of a judgement for A in the A vs. B case, the A-B judgement may be dissolved and B will walk free of liability. *See, e.g., Prism Techs. L.L.C. v. Sprint Spectrum L.P.*, 757 F. App'x 980, 987 (Fed. Cir. 2019).

baseline entitlement from attack by the contracting partner to move forward with contract enforcement. This illustrates the point that a patent owner must put their patent at risk as a prerequisite to enforcing a patent-based contract:

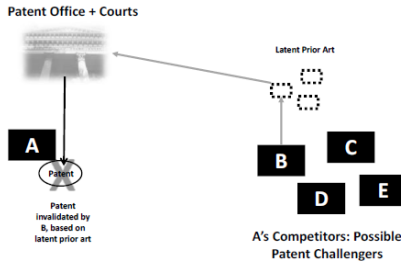


2. Dyadic Validity and Private Law Baselines

Dyadic validity is the status of an IP right that has passed through the validity stage at the outset of a private law dispute. As between the parties, the right can be taken as fully vested for the remainder of a particular dispute, and for the duration of any remedy awarded in resolving the dispute. It can be treated as a legitimate private law entitlement from that point forward.

The courts have long recognized a strong federal patent policy against enforcing an unexecuted judgment of patent liability at least where all of the following circumstances are present: the patent claims underlying that judgment have been held invalid by another decision having sufficient finality for this purpose; proceedings on direct review of the judgment have not yet been completed; and no agreement exists [between the parties] making portions of the judgment final.

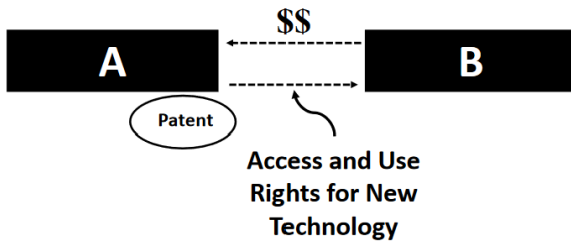
Begin with the basic validity situation: any interested party can challenge the validity of A’s patent by filing an action in the Patent Office:



Patent Validity Challenge: A’s Competitors (such as B) Find and Cite Latent Prior Art to Patent Office

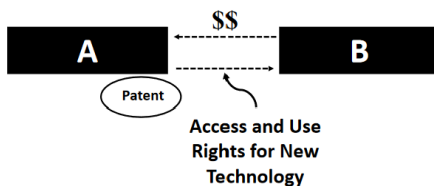
Remember that there is a possible additional validity challenge by any competitor A chooses to sue for patent infringement.

Now, to form a dyad, introduce a patent licensing contract from A to B:



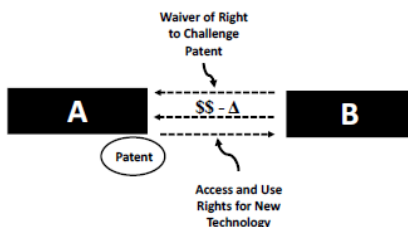
Patent License from A to B

The consideration from the patent owner is access to the patented technology. The licensee B may permit access to its pre-existing technologies, but in any event, B will pay royalties for access to the patentee’s technology. This two-private-party contract forms a “dyad,” the basic “unit of analysis” in private law.



Patent License from A to B: Forms Contracting Dyad

By default, licensee B has the right to challenge the validity of A’s patent even though the two parties have signed a contract.¹¹ Nevertheless, the right to challenge can be waived, as here:

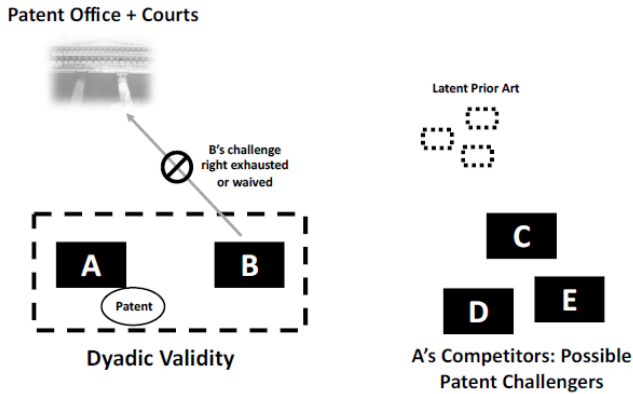


Licensee B Waives Patent Challenge Right

Notice that licensee B pays a slightly lower royalty in the transaction shown here. This reflects the fact that in this deal anyway, it is worth something to A that B cannot challenge the patent that forms the basis of the deal. A makes a slight concession (reducing royalty payments by some amount “Δ”) in return for B surrendering the challenge right.

¹¹ This is a simplified, and slightly normatively-inflected, statement of the law of challenge rights by contracting partners. *See generally* Robert P. Merges, *Patents, Validity Challenges, and Private Ordering: A New Dispensation for the Easy-Challenge Era*, 23 Nev. L.J. 263, 312 (2023).

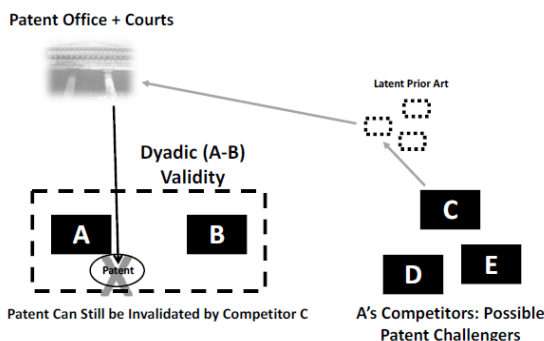
The establishment of dyadic validity turns an IP dispute into a classic private law interaction. Validity establishes a reliable baseline for courts to use in applying corrective justice principles to a patent license. The dotted line around the contractual dyad is meant to signify that the patent is a fixed entitlement between the parties:



Dyadic Validity: B Can Not Challenge the Validity of A's Patent

Notice that the situation depicted here holds for run-of-the-mill patent infringement cases in their post-validity stage as well. These are cases where A and B were strangers, instead of contracting parties, before A sued B for infringement. After a patent has been found not invalid, the court treats it as a viable entitlement, putting the patent inside a conceptual “dotted line box” as in the diagram. After validity, a court moves on to litigation issues that might be said to form the private law core of the tort of patent infringement: liability and remedies.

To be thorough, notice that *outside* a contracting dyad, the challenge right is still fully available. Dyadic validity binds only A and B into a distinct private law unit. Those outside the dyad can freely attack patent validity as usual:



Dyadic Validity Has No Effect on Challenge Rights of Those Outside the Dyad

Dyadic validity turns an IP right—tenuous because subject to challenge on the basis of public law policies and values, as embodied in validity doctrines—into a legitimate private law entitlement. Dyadic validity establishes a solid baseline that corrective justice can work with. It subjects an IP-related tort or contract to the inner workings of private law. Once an IP owner earns the status of a bona fide entitlement holder, the remainder of the dispute can be comfortably and confidently assimilated into the taxonomy and terminology of private law. Dyadic validity is the threshold between the public law world of agency-issued IP rights and the private law world of owners holding solid legal entitlements and interacting with other private parties. At the IP enforcement stage, with dyadic validity established, there is, of course, state involvement. But it usually takes the form of a public court whose power and authority are invoked by one or more private parties in service of private ends—the classic private law posture. Once an IP right passes the threshold of dyadic validity, public law policies and values move to the background. For all practical purposes, the right becomes a private right serving private ends: private enforcement and private ordering.

But notice how limited dyadic validity really is. It does not “quiet title” to the patent. It does not establish

enforceability for all time against all comers; it just settles validity between two parties in one specific dispute. This explains why sometimes judges in patent cases will remind the parties not to say that a patent was found “valid,” but only that a court, under the facts presented, found the patent “not invalid”¹²—for present purposes, anyway.

3. Patent License as Dual Entitlement Bundle

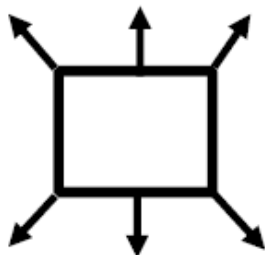
Now that we have a reasonably clear idea of the nature of a patent as a private law entitlement, we look more closely at patent contracts. This section describes in more detail than normal (and possibly more detail than necessary) the entitlement structure created by a typical patent license. I use a few simple diagrams to summarize the main points.

A patent license is a property interest: all or part of a state-backed property right passes from the initial owner to the licensee. After the transfer and under its terms, the licensee possesses at least part of the exclusive rights conferred by the patent grant. In many cases, the licensee gains enforcement rights, allowing it to stand in the shoes (or alongside) of the patent owner in enforcing the rights “against the world.” By contrast, strictly contractual rights

¹² See, e.g., *Ball Aerosol & Specialty Container, Inc. v. Ltd. Brands, Inc.*, 555 F.3d 984, 994 (Fed. Cir. 2009):

Because [patent owner/plaintiff] BASC alleged infringement of only claims 1 and 5, those are the only claims in issue, and we render no judgment on any other claims. To the extent that the district court declared the patent “valid,” or all the claims of the patent “valid,” we vacate that declaration. Aside from the fact that courts do not declare patents to be valid, and only declare that they have not been proved to be invalid, if such is the case, courts should not adjudicate claims not put in issue by the parties, unless a holding with respect to contested claims necessarily implicates others, a situation that has not been argued to be the case here.

create only bilateral obligations.¹³ Contract terms bind only the parties that have agreed to them. The two entitlement types are pictured here:



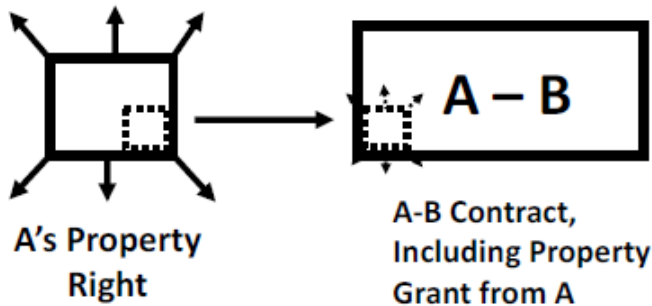
**Property Right:
Omni-directional**



**A-B Contract: Bi-
directional**

¹³ Judge Frank Easterbrook, facing a case involving copyright licensing in 1996, drew a categorical distinction between statutory IP rights and obligations under an IP contract. *See generally* ProCD v. Zeidenberg, 86 F.3d 1447, 1448–49 (7th Cir. 1996) (Easterbrook, J.). No contract could be truly “equivalent” to a statutory right because contract binds only the two parties to an agreement, whereas a statutory right is general, i.e., “good against the world”. It is a valid point, but it was made in the course of interpreting a section of the Copyright Act. That section addresses when the federal Act preempts copyright-like provisions in state law. The text says state law must yield when it provides rights “equivalent to” those enumerated in the Copyright Act. Judge Easterbrook’s point about state contract law was that by requiring mutual assent, contract law calls for an “extra element” not required in proof of copyright infringement. To plead breach of contract, the promisee must show mutual assent. This is of course not necessary in a complaint for copyright infringement, which Easterbrook took to be proof that contract was not the “equivalent” of statutory copyright. *See, e.g.,* Niva Elkin-Koren, *Copyright Policy and the Limits of Freedom of Contract*, 12 Berkeley Tech. L.J. 93, 97 (1997); David Nimmer et al., *The Metamorphosis of Contract into Expand*, 87 Calif. L. Rev. 17, 49 (1999); Maureen O’Rourke, *Copyright Preemption After the ProCD Case: A Market-Based Approach*, 12 Berkeley Tech. L.J. 53, 55–57 (1997).

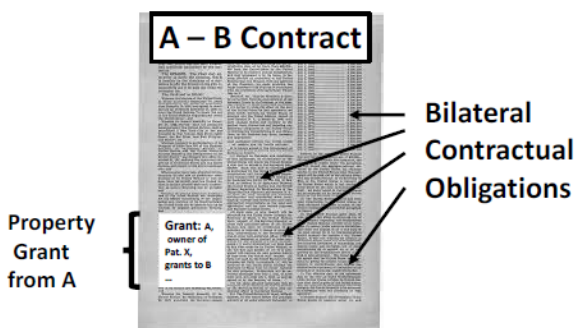
Most licensing contracts include a section or paragraph labeled “Grant” or “Grant of Rights.” The grantee/licensee is empowered to stand in the shoes of the owner/licensor, armed with a right “good against the world.” Conceptually, the grant transfers some or all of A’s rights “against the world.”¹⁴ During the license term, B can often enforce against third parties the portion of the patent licensed from A. The transfer of this power explains why it is called a “grant”: it confers enforcement power in the same way as the initial grant from the Patent Office to the patent owner. But this private grant is just one part of the overall A-B contract:



Whatever the scope of the granted rights, the grant usually represents only a portion of a typical licensing agreement. The remainder of the contract is usually filled with a long list of each party’s obligations, often including performance milestones, royalty payments by the licensee, handling of performance disputes, termination events, and

¹⁴ This is literally true for exclusive licenses. A non-exclusive license may allow the licensee, with the help of the owner, to enforce its rights against “most of the world” – anyone except other nonexclusive licensees.

procedures, etc.¹⁵ These obligations build on and are intertwined with the property grant, but they are purely creatures of contract. The diagram below shows the two constituents of most licenses: a property grant from patent owner/licensor A and supporting bilateral obligations embodied in the A – B licensing contract. The terms of the contract are represented below, with the grant portion highlighted.



II. A PRIVATE LAW CRITIQUE OF THE DOCTRINE OF PATENT MISUSE

The “hostility tradition” to patent licensing, mentioned in the Introduction, taught that the legal system must watch for contracts that extend the reach of a patent as granted. But despite the judicial firepower behind the misuse cases, misuse opinions were conceptually flabby. Contracts were suspect because they might “extend the Congressional grant” of rights embodied in a patent when issued. Contracts could add to the economic power of the property grant in

¹⁵ For an example of a standard licensing agreement, see the regulations pertaining to licensing of patents developed from public-funded research at the National Institute of Standards and Technology (NIST). 37 CFR § 401.14.

ways that frustrate Congressional policy regarding the scope of that grant. The message was that patents themselves are far from good, but patents plus contracts are presumptively bad.

A. The Supreme Court in the 1940s

Hostility to patent contracts was expressed through the language of federalism: that patent policy was *federal* policy, whereas contract law was state law, subject as in all other areas to federal supremacy.¹⁶ But this was in no way unique to patents.¹⁷ It was but one of many manifestations of the rapid growth in the reach of federal law in the decades after 1920.¹⁸ Delicate issues at the intersection of IP and contract law were swept up into the much larger phenomenon of the “federalism revolution.”¹⁹ It might be a stretch to say that the law of IP contracting was diverted from its conventional course to be enlisted in the federalism wars of the era. But there is no doubt that the status of contract law *as state law*—and so always inferior—was a constant feature of this era’s Supreme Court cases on the patent-contract interface.²⁰

Federalism showed up in another way as well. The almost constant conjoining of patent and antitrust law in this era’s patent contract cases owed something to the fact that patent and antitrust were both *federal* laws. And, as Herbert Hovenkamp has shown, to become effective, antitrust law had to overcome resistance rooted in state contract law.²¹

¹⁶ Herbert J. Hovenkamp, *The Emergence of Classical American Patent Law*, 58 Ariz. L. Rev. 263, 292 (2016).

¹⁷ See generally Randall G. Holcombe, *The Growth of the Federal Government in the 1920s*, 16 Cato J. 175 (1996).

¹⁸ *Id.* at 188.

¹⁹ *Id.* at 175.

²⁰ Merges, *supra* note 1, at 340.

²¹ See Herbert J. Hovenkamp, *The Emergence of Classical American Patent Law*, 58 Ariz. L. Rev. 263, 304(2016).

Perhaps this served as a conceptual model for the Supreme Court's view of state contract law when that law was cited as a reason to reign in the Court's expansive designs for the reach of federal patent law. Looking from the vantage point of broad historical trends, it is easy to understand how the Court came to see IP-related contracts as matters close to the heart of Congressional policies regarding competition policy and IP law. Just as the Court needed to guard against resistant state law in the areas of civil rights and antitrust, it needed to guard against the trepidations of state contract law. The implicit trope was Congress sets a progressive path forward; states try to undermine it; the Court sees to it the states fail to effectuate Congressional policy and promote nationwide progress.

The Court's orientation was necessary, proper, and long overdue for civil rights and civil liberties.²² At least some aspects of antitrust, too, some say.²³ But for patent

²² There are those of course who disagree. Who say demographic and attitudinal changes would have led to improved civil rights in the American South even without the involvement of federal institutions such as the Supreme Court, the Justice Department, other federal courts, etc. The problem with this view is that almost no contemporaneous evidence supports it in any way. *See, e.g.*, *Cooper v. Aaron*, 358 U.S. 1, 17 (1958) (concluding the State of Arkansas barred from undermining federal racial integration order with conflicting state law):

[T]he constitutional rights of children not to be discriminated against in school admission on grounds of race or color declared by this Court in the *Brown* [v. Bd. Of Education, 347 U.S. 483 (1954)] case can neither be nullified openly and directly by state legislators or state executive or judicial officers, nor nullified indirectly by them through evasive schemes for segregation whether attempted "ingeniously or ingenuously."

Id. at 17.

²³ *Cf.* Daniel R. Shulman, *Comment: "Anticompetitive Effect"*, 95 Minn. L. Rev. Headnotes 92, 99–100 (2011) (footnotes omitted) (commenting on Hon. Richard D. Cudahy & Alan Devlin, *Anticompetitive Effect*, 95

law, not so much.²⁴ The truth is that the older private law approach had made a reasonable and workable body of law.

Minn. L. Rev. 59 (2010)). Shulman argues that the survival of some Warren era precedent shows its basic soundness:

One must also take issue with the Authors' view that the Warren Court condemned out of hand tying arrangements and exclusive dealing agreements. Although characterized as per se violations, tying arrangements required a showing of market power in the tying product, which is still the law, with the exception that market power is no longer presumed based on intellectual property. In addition, the Warren Court treated exclusive dealing agreements under the rule of reason, requiring a showing of substantial market foreclosure, just as courts do today.

²⁴ Scholars have noted the wide-ranging impact of more centralized federal power across a range of legal fields affecting life in the U.S., beginning with but not limited to the American South. Scholar David Garrow wrote of

[T]he tremendously under-appreciated manner in which the activism of the southern Black freedom struggle stimulated the Court to vastly expand federal judicial jurisdiction in ways that helped protect the constitutional rights of any citizen prosecuted in a southern state court; and [of] the degrees to which even ostensibly unrelated areas of substantive federal law, ranging from First Amendment rights of association, to the law of libel, to the procedural protections afforded public aid recipients, all were likewise transformed on account of the collision between the Warren Court and white public authorities in the South. All told, that larger story is one whose scope far exceeds the standard narrative about *Brown* [v. Board of Education] and race

David J. Garrow, *Bad Behavior Makes Big Law: Southern Malfesance and the Expansion of Federal Judicial Power, 1954-1968*, 82 St. John's L. Rev. 1, 1-2 (2008). Historian Laura Kalman refers to the generation of lawyers influenced by this dynamic as "the children of the Warren Court." LAURA KALMAN, *THE STRANGE CAREER OF LEGAL LIBERALISM* 52 (1996). Things have, obviously, changed in the 2020s; so today, states often fight the good fight for expansion of civil rights as against a resistant federal judiciary. See, e.g., Lenny Mendonca & Laura D. Tyson, *The Progressive Resurgence of Federalism*, STANFORD SOCIAL INNOVATION REVIEW (Winter 2018), https://ssir.org/articles/entry/the_progressive_resurgence_of_federalism [<https://perma.cc/2ZDK-4AR6>]. No reason for patent law to miss the trend of renewed appreciation for the virtues of state courts.

For functional reasons, for efficiency, it works far better to see contract and property law working together when it comes to IP rights.²⁵

**B. *The “Extension” view of patent misuse:
Statutory vs. Contractual Grants***

The unhelpful federal supremacy theme showed up in a 1942 Supreme Court case where a patent owner sought to enforce a licensing agreement.²⁶ A small company called The Scientific Tablet Company had developed pioneering technology for automatically depositing salt while vegetables are being canned.²⁷ Scientific Tablet was acquired by G.S. Suppinger, a regional salt distributor.²⁸ Suppinger discovered that the large salt company, Morton Salt, was selling canning machines that infringed the Scientific Tablet/Suppinger patent.²⁹ So Suppinger elected to enforce its patent against Morton.³⁰ Morton won the suit, not by invalidating the Suppinger patent and not by proving

²⁵ As I argue in the Conclusion, for patent law, and maybe all of IP, the federal-state interface was and should once again be approached more with the goal of making it a seamless web. We can understand why IP-related contracts were pulled into the vortex of federal-state relations from the 1930s to the 1970s or so. But it is time now to take them out. For highly practical reasons, IP-related contracts should be given wide latitude. At the operational level, business people need a body of law that allows creative contracting based around the centerpiece of IP rights. To do that, it would help if the law were to see contract and property rights as essential private law institutions. In IP contracting, courts should minimize the federalism-related frictions between these essential structural components of private ordering whenever possible. And, as I also argue in the Conclusion, state and federal courts should share equally in the development of the law of patent contracts.

²⁶ *Morton Salt Co. v. G. S. Suppiger Co.*, 314 U.S. 488, 490–91 (1942).

²⁷ *E.g., id.* at 489.

²⁸ *E.g., id.* at 491.

²⁹ *E.g., id.*

³⁰ *Id.* at 490–91.

that Morton had invented a non-infringing alternative to the Suppinger design.³¹

Instead, Morton prevailed when it showed the court licensing agreements between Suppinger and its customers in the canning industry.³² These agreements required customers to purchase salt tablets from Suppinger for use in its patented machine.³³ Salt tablets are, of course, unpatented, and according to Morton, this meant that the Suppinger contracts were being used to “extend” the patented invention to cover something outside the scope of the patent.³⁴ Contract law – state contract law – was being used to surreptitiously modify carefully calibrated federal policies; so as the federal defeats the state, the Patent Act defeats the contracts.

The Supreme Court swallowed this argument hook, line, and tablet. These patent scope-extending contracts, the Court held, were an illegal attempt to stretch the statutory monopoly beyond its rightful bounds.³⁵ And Morton, the company accused of infringement by Scientific Tablet, had done the world a favor by rooting out these contracts and exposing the wrongful act. Morton, a stranger to these contracts, had exposed their wrongfulness under federal patent law, a service so important that the contractual arrangement between Scientific and its licensees meant little or nothing by comparison. The Court condemned the use of license agreements that effectively extended the federally granted patent rights beyond the limits set by federal legislation, viz., the Patent Act. The parties to the license had tried to do by contract that which is explicitly forbidden by statute (i.e., effectively patenting a widely available

³¹ *Id.* at 494.

³² *Morton Salt*, 314 U.S. at 491–92.

³³ *Id.*

³⁴ *Id.* at 492.

³⁵ *Id.* at 492.

commodity which, of course, could not, if claimed in a patent, survive patent examination).

The Court chose these words to describe the issue:

The grant to the inventor of the special privilege of a patent monopoly carries out a public policy adopted by the Constitution and laws of the United States, “to promote the Progress of Science and useful Arts [etc.]” . . . But the public policy which includes inventions within the granted monopoly excludes from it all that is not embraced in the invention. It equally forbids the use of the patent **to secure an exclusive right** or limited monopoly not granted by the Patent Office **and which it is contrary to public policy to grant.**³⁶

The conception here is of competing or inconsistent grants: the initial grant of rights embodied in the patent as issued and the grant of rights stated in the patent contract. This idea of incompatible grants was at the core of the patent misuse cases decided after 1940.³⁷ Conceptually, what the Court is saying is that, as between the contracting parties, Suppiger has rewritten the patent claims to include an element missing in the originally granted claims. The post-contract scope of Suppiger’s rights becomes a broader version of the claims as granted by the government. The licensee’s “grant,” as the Court sees it, is a sort of “bilateral claim” – a broader (and hence prohibited) version of the claims allowed by the Patent Office. The *effective* reach of Suppiger’s rights after the contract is broader than the original patent claims: it is “publicly granted claims plus contractually agreed extension” – in the Suppiger case, “salt machine plus salt.” Because licensees are “put under tribute” to a broader class of subject matter than covered by the patent’s claims, the contract works as an extension of the issued claims, which it cannot do. The initial grant was a

³⁶ *Id.*

³⁷ *Id.*

patent; the bilateral “grant” from the licensee covers more embodiments, i.e., larger technological space, than that grant, and so represents a *misuse* of the patent.

This conception of misuse is a good illustration of the gains to be made from a more thorough understanding of property versus contractual obligations – i.e., of a more private law perspective on the issue. Consider, for example, the notion of the contract as a “grant” to Suppiger. The Court says the contract gives greater rights – a broader grant – as compared to the grant under the Patent Act. But in these contracts, who is doing the “granting”? If Suppiger has more rights after the contract is signed (at least vis-à-vis its canning customers), it can only be because Suppiger’s *customers* “granted” to it more than the government granted in the initial patent. The patent claim gives Suppiger ownership of its canning machine design: any member who invades this right must compensate Suppiger. The licenses extend Suppiger’s dominion to include “machine plus salt tablets,” which is, of course, broader than the patent claims. So, in a manner of speaking, the contracts “extend” the rights of the patent owner.

But of course, the point the Supreme Court misses is that contractual obligations are fundamentally different from a government grant of public rights. Contract obligations come from a private contracting party, not the government. And they are binding only on the parties to the contract. They are in no way “good against the world.” So when the Supreme Court says that patent policy “forbids the use of the patent to secure an exclusive right or limited monopoly not granted by the Patent Office,” it (1) identifies the licensing contract in question as “the use of the patent,” and it (2) asserts that the obligations in the licensing agreement constitute “an exclusive right or limited monopoly.”³⁸ But no contract can create exclusive rights, not in the sense of

³⁸ Morton Salt, 314 U.S. at 492.

excluding third parties. A contract cannot extend a government grant because it creates a completely different type of legal right. You cannot add to the number of apples you have by throwing in some oranges. And except in a few rare cases (discussed just ahead), you cannot create a close approximation to a property right by use of contracts.

So, if we are going to aspire to a useful degree of accuracy in our labels, we will need to stop talking about contracts that “extend” the exclusive boundaries of government-granted property. Instead, I recommend a return to private law principles in the analysis of patent licensing contracts. From the perspective of bilateral contracting, “patent misuse” can be broken into two halves. The first half covers cases where a patent-based contract creates or supports a true economic monopoly or at least serious anticompetitive harm to consumers or other non-parties to the contract. The second half covers cases where a patent contributes to “undue hardship”: that is, a rare circumstance where, through no fault of the licensee, the market leverage of a patent allows its owner to extract unfairly onerous terms of use. Both halves of the reconceived doctrine can be assimilated painlessly into conventional private law doctrine, leaving in place conceptually sound rules in place of the indefensible status quo.

Some patent contracts might tend to create anticompetitive conditions, but if so, it is because of the market power of the two firms involved. A contract might create or protect an economic monopoly, but it cannot technically “extend” a government-granted monopoly. Patent-based contracts that harm consumers by drastically reducing competition may be unenforceable. But if so, it is because of harm to third parties, not because the contracts somehow reconfigure a state-granted right. As we see later, the best approach to these contracts is to treat them under the contract doctrine that sometimes voids private agreements as

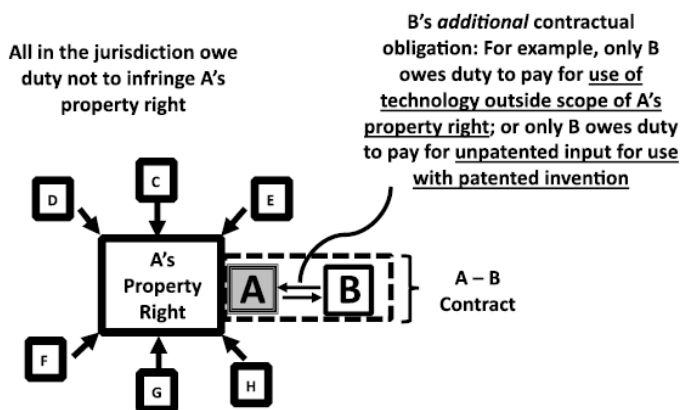
contrary to public policy. This doctrine weighs the private benefits and third-party (public) costs of contract terms – a far superior approach when compared to the muddled analysis of “rights-extending” contracts.

Likewise, the owner of a patent covering a crucial input, machine, process, etc., might, in a few cases, use the market leverage of that patent to extract unfairly onerous terms from a licensee. But if so, it is because of the undue hardship caused by the patent in this economic setting; it is not because the parties, by agreement, extend the scope of the original government grant. As with the long-established “abuse of right” doctrine in civil law systems, the offense consists in deploying a property right to extract an unfair return, not in any extension of the right itself.

Put simply, patent misuse should be stripped of the “extension of grant” rationale. Gone should be the idea that private contracts can create bilateral obligations equivalent to the unilateral property rights granted by the government. Misuse doctrine should instead be organized around the idea of “contracts that happen to involve patents.” In particular, patent misuse should center on two conventional contract law concerns: third-party effects and interparty fairness. Recasting patent misuse as a matter of contract (private) law will pay off in two ways. It eliminates the shaky and incoherent “property extension” rationale, and it makes all the intellectual and doctrinal resources of the private law of contracts available for licensing disputes. Section IV.A below puts some of these resources on display. I draw from the extensive case law and research on contracts “void against public policy” and on the equitable defense of “undue hardship.” In so doing, I assimilate common fact patterns from misuse cases into the overall structure of private law doctrine and theory: concrete proof of the benefits of “more private law” in our handling of patent contracts.

1. Bilateral obligations do not “extend the [Property] Grant”

A patent license includes two separate entitlementment types: property rights and contract obligations. The basic problem with the patent misuse doctrine is that it is vague and imprecise regarding the relationship between the two. Misuse cases often speak of patrolling patent licenses in search of illicit contracts that “extend the patent grant.”³⁹ But no contract can extend a property right. Contract obligations are only good within the contract dyad; they cannot be enforced against non-parties. The diagram below illustrates the basic point.



A's property right (patent) establishes a duty on the part of all citizens to steer clear of A's invention as defined in the relevant patent claims. So, B, C, D, E—everyone—is subject to the general duty of avoidance that follows from the grant to A. A may transfer some of its property rights to B, but this has no effect on non-parties (unless B chooses to enforce its licensed rights against them).

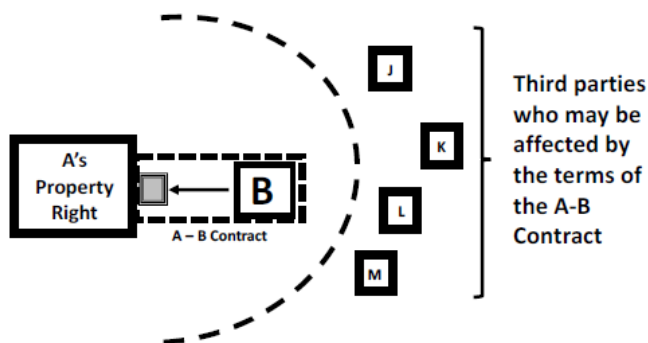
³⁹ Other cases speak of extending the patent “monopoly”; though seldom strictly accurate, this at least comes closer to being an accurate label, as discussed below.

Patent licenses almost always establish bilateral, contractual rights as between the parties. These may be related to A's patent rights, but they do not (and cannot) create general (omnidirectional) duties that bind third parties. Common obligations include the licensor's duty to pay royalties, as specified in the agreement; limits on what markets the licensee can serve with the patented technology; and limits on what the licensee can do with the licensed rights (e.g., manufacture, manufacture, and distribute, use only within the licensee's company, etc.). Because these are bilateral rights, they are matters of pure contract law. The many state law cases on performance and breach of patent license obligations are a testament to this.

One challenging aspect of patent licenses is that bilateral obligations are sometimes defined with reference to patent rights, particularly the scope of patent claims. Because the claims define the "technological space" covered by patent rights, they are useful in defining the precise technology a licensee may use under the contract. A very common formulation in patent licenses is to say in effect, "any technology that would infringe the licensed patent is included in this license." This defines a key licensee duty under the contract. The licensee typically agrees to pay royalties for any "licensed product," which is commonly defined as "any product that would infringe one or more claims of the licensed patent(s)." By this route, the patent claims come to form part of the specification of the licensee's duties. But – and this is crucial – the claims are just an easy way to define a duty that is wholly *contractual*. This explains why state courts are often called upon to interpret patent claims in the midst of a state law case over a patent contract.

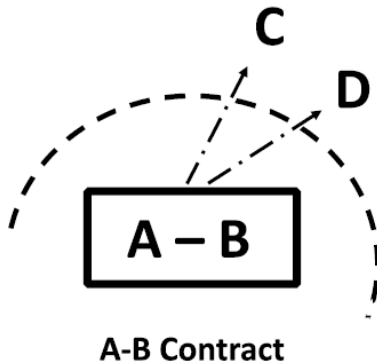
2. Patent Licenses, Like All Contracts, Can Affect Third Parties

It is true, of course, that bilateral contracts can *affect* third parties, a point I cover a little later. But there is a fundamental difference between (1) a set of bilateral obligations that bind the contracting parties, and (2) third-party spillovers or externalities flowing from such a contract. As shown earlier, property is unilateral, i.e., good against the world. Contract rights, by contrast, bind only the parties – but even so, they may impact non-parties, i.e., third parties. By combining A and B’s expertise, efficiently sub-dividing production, or in thousands of other ways, the A-B contract might significantly benefit third parties. It might also harm them by eliminating competition, adding to environmental pollution, or in thousands of other ways. This diagram shows the general picture regarding these contractual “externalities.” Parties A and B enter into a contract, but it affects J, K, L, etc., i.e., third parties to the contract:



A classic instance of third-party harm is a contract between A and B that limits competition, thus raising the price or cost to third parties. One example of such a contract would occur where A and B are the only two manufacturers of an item used as a key input into a product sold by third parties C and D (Think of A and B as microprocessor makers

and C and D as computer manufacturers). The diagram below explains this concept.

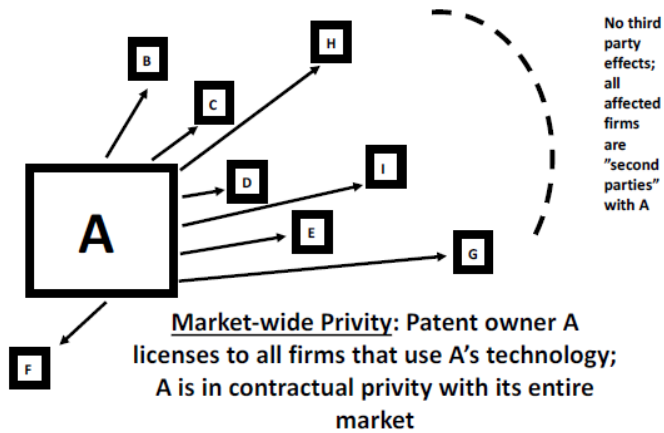


A and B are the only two firms that sell a key input needed by Firms C and D. A patent licensing agreement between A and B that sets a fixed, high price for the input directly affects closely proximate third parties C and D.

3. The special case of Omni-Bilateral Contracting

Under special conditions, a patent owner may approximate the reach of a property right by a thick network of contracts. If virtually every user of a technology can be required to agree not to duplicate it, sell copies of it, or otherwise undermine the licensor's control of it, the owner may enjoy many of the same benefits conferred by a patent.⁴⁰ In terms of our discussion so far, comprehensive contracting might be said to leave very few third parties; if every user signs a contract, they are all second parties. The diagram below shows this.

⁴⁰ The practice of ubiquitous contracting has been described as "legislat[ing] by contract": since contracts bind virtually "the whole world", the contract terms are in a sense "good against the world", and thus have the same force as actual legislation. See Friedrich Kessler, *Contracts of Adhesion – Some Thoughts About Freedom of Contract*, 43 Colum. L. Rev. 629, 640 (1943).



Although there are a number of real-world examples of ubiquitous contracting, or market-wide privy, they are, in fact, rare. And even when they prevail, various legal barriers prevent extensive contracting from duplicating the full impact of an actual property right. When end users download a market-dominating software application (app) or platform, they are usually required to execute a “clickwrap” agreement binding them to certain terms. These agreements routinely include a patent license. It is not unusual for such a license to restrict the user’s ability to “reverse engineer” the functioning of the software code – a restriction that at least arguably modifies the default statutory rights embodied in a patent. If essentially every end user so agrees, the effect might be the same as if the Patent Act, with respect to the listed patents, had been modified to prevent detailed study and attempted duplication of patented features of the licensed software.

Another example is open-source software (OSS). The legal innovation that prevents an OSS contributor from enforcing IP rights (first, copyright; in later years, also patents) is the “viral license:” a set of contractual obligations that automatically attach to anyone who draws from and

contributes to an OSS project.⁴¹ At least with respect to the community that uses and contributes to an OSS project, the contractual web encompasses everyone. So, within that community, OSS contracting might be said to effectively modify the default statutory grant of IP rights.

In the first example, widely-used apps, a number of doctrines stand in the way of true market-wide contractual privity. The first is doubts that clickwrap contracts are always binding. Numerous scholars have extended the traditional critique of “boilerplate” language and “contracts of adhesion” to the case of clickwraps, which are almost never read by the end user and cannot be altered even if the user raises an issue. There is also the possibility that a court will apply the “preemption doctrine” and rule that the contractual terms in question are unenforceable as a violation of important federal/statutory policy. While the Copyright Act includes a statutory preemption provision, the patent law analog grows out of cases applying the Constitutional Supremacy Clause to specific state laws related in some way to patent protection.

In the case of OSS, the limiting factor is market reach. Although OSS obligations propagate “virally,” they are binding only on those within the community of OSS contributors/users for that specific piece of software. If there are competing proprietary software programs that do the same task as an OSS program, then the OSS-based restrictions will not reach every user in the relevant market. Product choice, in other words, may bring with it contractual choice. To duplicate the effect of an actual property right, a patent owner must impose non-statute-based restrictions on

⁴¹ See Pamela Samuelson, *Mapping the Digital Public Domain: Threats and Opportunities*, 66 *Law & Contemp. Probs.*, 147, 156 (Winter/Spring 2003) (“[T]o the extent that licenses are drafted to bind subsequent users, the distinction between contract rights that bind only the two parties to the transaction and property rights that bind the world erodes significantly.”).

all end users in the market. Through contract, the patent owner tries to make their restrictions “good against the [relevant] world.” But if some users do not agree to the restrictions – because they use software provided by someone other than the OSS community – then those restrictions are “good only against some of the world.”

There are a few situations where patent contracts might impact third parties severely enough to make it necessary to block enforcement of the patent. But non-enforcement in these cases has nothing to do with “extending” patent rights: the contracts in question do not (and cannot) alter the contours of state-granted patent rights. Instead, they are contracts that impose serious third-party harm. They should be handled under the same rubric as any contract that brings serious harm to third parties: the “void as against public policy” doctrine (§ 178 of the Second Restatement of Contracts).

It is also possible for a patent owner to take advantage of a licensee made vulnerable by unusual circumstances. There is such a thing as “situational leverage,” and it differs from market power in antitrust law. Suppose that either of two technologies (those of firms A and B) can be used to make a crucial input needed by a manufacturer (C). Next, say A’s technology is patented, and B has just lost an infringement suit to A. During the time it takes B to change its design to avoid infringement (or to work a deal with A), manufacturer C has only one option: A. If A uses this situational leverage to drive a severe bargain in its license with C, C might later convince a court to unwind the deal and perhaps even compensate C. But if C gets help from a court, it should be under the standard equitable principle of undue hardship.⁴² There is no need to

⁴² Or, with the right facts, under § 2 of the Sherman Act, 15 U.S.C. § 2. *See, e.g.,* Am. President Lines, L.L.C. v. Matson, Inc., 633 F. Supp. 3d 209, 225. (D.D.C. 2022) (declining defendant’s motion to dismiss, and

argue that “patent leverage” was used to “extend the grant” of A’s patent. It is better to treat it as an undue hardship case, where the fulcrum on which leverage turned happened to be a patent.

C. The Empty Promise of the “Related to the Grant” Test

As mentioned earlier, there are two closely related formulations of patent misuse doctrine: (1) extension of grant and (2) extension of monopoly. In that earlier discussion, I said “extension of grant” was an erroneous conflation; bilateral contract obligations cannot “extend” a state-granted property right “good against the world.” In this section, I add another layer to this purely taxonomic-analytical argument. Even if you accept the basic premise that contract obligations may somehow supplement statutory property rights, the test as stated, still fails. That is because there is no way to tell whether a particular bilateral obligation “impermissibly extend[s] the scope of the subject matter encompassed by the patent grant.”⁴³ The test for

permitting case to move forward, in Sherman § 2 case involving two container shipping companies). In *Am. President Lines*, plaintiff American President Lines (APL) sought to enter the shipping market to Guam, but alleged that defendant Matson used its dominant market position (protected by regulatory barriers to entry) in shipping routes to Hawaii, to force Matson’s numerous Hawaii customers to direct their Guam shipping only to Matson, thus largely squeezing APL out of the Guam market. See generally *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956) (defining monopolistic level of market power as “the power to control prices or exclude competition.”); See also *United States v. Microsoft Corp.*, 253 F.3d 34, 51 (D.C. Cir. 2001).

⁴³ *Monsanto Co. v. McFarling*, 363 F.3d 1336, 1341–42 (Fed. Cir. 2004); *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1372 (Fed. Cir. 1998) (“[t]he key inquiry is whether, by imposing conditions that derive their force from the patent, the patentee has *impermissibly broadened the scope of the patent grant* with anticompetitive effect.” (emphasis

misuse asks whether a particular bilateral restriction “*relates to subject matter within the scope of the patent claims.*”⁴⁴

The idea is, roughly, that some contractual restrictions flow naturally from or are tightly bound to the granted statutory rights. Those restrictions “close to” or “related to” the claims of the licensed patent are not misuse, but those restrictions “unrelated to the grant” can constitute misuse.⁴⁵

Numerous commentators have bemoaned the vapidness of this test.⁴⁶ That is because so many obligations

added)); *See also* *Transparent–Wrap Mach. Corp. v. Stokes & Smith Co.*, 329 U.S. 637, 644 (1947) (“He who uses his patent to obtain protection from competition in the sale of unpatented materials *extends by contract his patent monopoly to articles* as respects which the law sanctions neither monopolies nor restraints of trade.” (emphasis added)).

⁴⁴ *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 708 (Fed. Cir. 1992) (emphasis added), abrogated by *Impression Prod., Inc. v. Lexmark Int’l, Inc.*, 581 U.S. 360, 370 (2017) (overturning *Mallinckrodt* on grounds of patent exhaustion, not on misuse: holding that “conditional sale” of a patented item does not create a limitation on buyers’ rights enforceable by a patent infringement action because the sale exhausts the owner’s patent rights).

⁴⁵ Contemporary case law divides these restrictions—those “outside the scope” of the patent grant—into two categories: those that are per se illegal (mostly, restrictions covered in Supreme Court cases from the 1940s and onward, inn particular tie-ins); and those subject to an antitrust- style “rule of reason analysis,” which permits consideration of costs and benefits, business justifications, etc. *See, e.g., Monsanto Co.*, 363 F.3d at 1341.

⁴⁶ 6A DONALD S. CHISUM, CHISUM ON PATENTS § 19.04[3](Matthew Bender):

Because courts have failed to adopt a general theory as to the proper limitations on the exploitation of the patent monopoly, it is necessary to assess a given practice in the light of precedent, custom and history, and the treatment of closely analogous practices. It can also be expected that what acts will be viewed as constituting misuse will shift with corresponding shifts in antitrust policy.

See also RAYMOND T. NIMMER & JEFF C. DODD, MODERN LICENSING LAW § 13:33 (2023):

in a licensing agreement can be said to relate, in one way or another, to the patent at the center of the contract. *Morton Salt* condemns a contract that obligates the licensee to buy an unpatented commodity (salt) from the patent owner.⁴⁷ The language of the opinion emphasizes that the contract effectively extends the patent owner's claimed invention to include unpatented salt: the patent in the case meant that the licensee could not compete by making its own canning machine, and the contract, by requiring the purchase of the machine plus salt, effectively (in the Court's view) turned the machine patent into a patent on the machine plus salt.⁴⁸ This "extension" of the machine patent, again in the Court's view,⁴⁹ worked the same as if the patent owner Suppiger had obtained patent claims that actually covered "machine plus salt." But salt was not part of the actual claims, so the tie-in did not grow out of the claims as granted. The contract extended the subject matter of the patent (the machine) to include a common commodity (salt) "unrelated" to the thing claimed, the machine.

It is not at all self-evident that the machine claims are "unrelated" to salt. The claims require salt, in tablet form, in the canning process. The process is worthless without salt. Finally, the patent included salt as an ingredient so, in effect, claimed the machine as used with salt. Salt is, without stretching to say it, related to the claimed invention.

The analysis adopted by the Federal Circuit distinguishes between license restrictions that are within the scope of the patent and those that extend beyond it... [But] the idea of licensing within the scope of a patent can be an ambiguous concept...Licenses that reach outside the scope of the patent are misuse only if they seek to expand the patent and cause anticompetitive effects under an antitrust rule of reason analysis. Few modern licensing arrangements do so.

⁴⁷ *Morton Salt*, 314 U.S. at 492.

⁴⁸ *See id.* at 490–93.

⁴⁹ *See supra* note 8, 17. I argued earlier that it is a category error to say that bilateral contracts can "extend" the reach of a state-backed property right that is "good against the world."

Cases finding that contractual restrictions are *not* related to the claimed invention are equally confusing. Licensees, in a series of cases, for example, asserted misuse where licenses to patented machinery tied compensation to sales of end products that do not necessarily embody the patented invention. Courts have usually characterized these as a convenient method for calculating royalties. This is despite the fact that these agreements can readily be seen as requiring compensation for the sale of embodiments not covered by the licensed patent: products that can only be described as unrelated to the claimed invention.

To take a final example, the Supreme Court – bucking the post-1940s trend of hostility to patent licensing – held in 1950 that there is no misuse in requiring licensees to license a package of patents, and to pay royalties until the last of them expired. This is a highly practical device that saves significantly on transaction costs; figuring out which of multiple licensee products infringe which of multiple licensed patents is complex and expensive.⁵⁰ The Supreme

⁵⁰ *Automatic Radio Mfg. Co. v. Hazeltine Research*, 339 U.S. 827, 834 (1950):

We cannot say that payment of royalties according to an agreed percentage of the licensee's sales is unreasonable. Sound business judgment could indicate that such payment represents the most convenient method of fixing the business value of the privileges granted by the licensing agreement. We are not unmindful that convenience cannot justify an extension of the monopoly of the patent. . . . But . . . there is in this royalty provision no inherent extension of the monopoly of the patent. Petitioner cannot complain because it must pay royalties whether it uses Hazeltine patents or not. What it acquired by the agreement into which it entered was the privilege to use any or all of the patents and developments as it desired to use them. If it chooses to use none of them, it has nevertheless contracted to pay for the privilege of using existing patents plus any developments resulting from respondent's continuous research. We hold that in licensing the use of patents to one engaged in a related enterprise, it is not per se a misuse of

Court reversed course less than twenty years later in the *Zenith* case (1969),⁵¹ but the condemnation of package licensing in *Zenith* turned on proof that the licensee has been coerced into the package deal rather than freely choosing it.⁵² This left the 1950 ruling in place where coercion is not proven – a significant swath of cases. Subsequent cases confirm the continuing vitality of the package licensing rule despite the fact that, logically, this practice suffers the same

patents to measure the consideration by a percentage of the licensee's sales.

⁵¹ *Zenith Radio Corp. v. Hazeltine Rsch., Inc.*, 395 U.S. 100, 136 (1969): [J]ust as the patent's leverage may not be used to extract from the licensee a commitment to purchase, use, or sell other products according to the desires of the patentee, neither can that leverage be used to garner as royalties a percentage share of the licensee's receipts from sales of other products; in either case, the patentee seeks to extend the monopoly of his patent to derive a benefit not attributable to use of the patent's teachings.

⁵² *Id.* at 138 (footnote omitted):

The Court's opinion in *Automatic Radio* [in 1950] did not deal with the license negotiations which spawned the royalty formula at issue and did not indicate that [Hazeltine] used its patent leverage to coerce a promise to pay royalties on radios not practicing the learning of the patent. No such inference follows from a mere license provision measuring royalties by the licensee's total sales even if, as things work out, only some or none of the merchandise employs the patented idea or process, or even if it was foreseeable that some undetermined portion would not contain the invention. It could easily be, as the Court indicated in *Automatic Radio*, that the licensee as well as the patentee would find it more convenient and efficient from several standpoints to base royalties on total sales than to face the burden of figuring royalties based on actual use. If convenience of the parties rather than patent power dictates the total-sales royalty provision, there are no misuse of the patents and no forbidden conditions attached to the license.

defect as tie-ins.⁵³ In a package license of 100 patents, for example, any licensee product (call it Product A) that infringes only 20 patents requires the same royalty payment as a product that infringes all 100 (Product B). Use of the 80 patents that are not infringed by Product A is still being paid for. So, in effect, the scope of those 80 patents has been expanded by contract. Despite this contractual “expansion of the grants” – the fatal flaw in a tie-in contract – package licensing is usually condoned.⁵⁴ This sort of inconsistency explains why, once again, we conclude that the “expansion” notion cannot do the work assigned to it by misuse doctrine. It is incapable of distinguishing bilateral obligations that are

⁵³ See, e.g., *Princo Corp. v. Int’l Trade Comm’n*, 616 F.3d 1318, 1325 (Fed. Cir. 2010) (“[W]hile grouping patents together in package licenses has anticompetitive potential, it also has potential to create substantial procompetitive efficiencies such as clearing possible blocking patents, integrating complementary technology, and avoiding litigation.”). See also *U.S. Philips Corp. v. Int’l Trade Comm’n*, 424 F.3d 1179, 1193 (Fed. Cir. 2005) (“In short, package licensing has the procompetitive effect of reducing the degree of uncertainty associated with investment decisions.”); *Texas Instruments, Inc. v. Hyundai Elecs. Indus., Co.*, 49 F. Supp. 2d 893, 901 (E.D. Tex. 1999) (“The portfolio license is widely used ... because it is almost impossible on a patent-by-patent, country-by-country, product-by-product basis to determine whether someone is using a company’s patents in a given country.”); See *Saint Lawrence Commc’ns L.L.C. v. Motorola Mobility L.L.C.*, No. 2:15-CV-351-JRG, 2018 WL 915125, at *9 (E.D. Tex. Feb. 15, 2018):

Without declaring that patent-to-patent tying is never per se misuse, the Court concludes that [plaintiff patent owner/licensor’s] conduct here is not per se patent misuse. Indeed, [its] pursuit of worldwide licenses achieves many of the procompetitive efficiencies that the Federal Circuit identified in *U.S. Phillips* and emphasized again in *Princo*.

⁵⁴ See, e.g., J. B. R. P., *Mandatory Package Licensing: A New Patent Misuse*, 44 VA. L. REV. 727, 727 (1958).

in the patent grant from those that are “unrelated” and so represent improper grant “extension.”⁵⁵

The diagram below captures this thought. The bilateral obligations listed in the stack of boxes on the right have all been challenged as misuse.⁵⁶ The decided cases

⁵⁵ Which explains why courts feel compelled to follow Supreme Court precedent while refusing to expand on the older cases. See *Princo Corp.*, 616 F.3d at 1321 (“Because patent misuse is a judge-made doctrine that is in derogation of statutory patent rights against infringement, this court has not applied the doctrine of patent misuse expansively. In this case, we adhere to that approach...”); *C.R. Bard v. M3 Sys.*, 157 F.3d 1340, 1373 (Fed. Cir. 1998) (“Although the law should not condone wrongful commercial activity, the body of misuse law and precedent need not be enlarged into an open-ended pitfall for patent-supported commerce.”). With no logical principle to work out, courts remain faithful to the older cases without applying their shaky reasoning to new cases. Cf. *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505, 510 (7th Cir.1982) (Posner, J.) (“[Patent misuse] has largely been confined to a handful of specific practices by which the patentee seemed to be trying to ‘extend’ his patent grant beyond its statutory limits.”).

⁵⁶ Warranty tied to no third-party repair. *Virginia Panel Corp. v. MAC Panel Corp.*, 133 F.3d 860, 870–71 (Fed. Cir. 1997). Exclusive purchase of replacement parts with service contract. *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451 (1992) (denying summary judgment, remanded for findings related to market power in market for photocopier service). Royalties based on patented item’s use as input to unpatented end products. *Boyce Thompson Inst. v. MedImmune, Inc.*, No. CIV.A. 07C11217JRS, 2009 WL 1482237, at *9 (Del. Super. Ct. May 19, 2009) (“What is less clear in the Agreement is whether the parties intended that MedImmune’s royalty obligation on net sales of a Licensed Product would be triggered only when the product infringes a Licensed Patent. The Agreement easily could have said that but it did not.”). Package licensing of worldwide patent portfolio, alleged to tie foreign patents to license of U.S. patent. *Trading Techs. Int’l, Inc. v. IBG L.L.C.*, No. 10 C 715, 2021 WL 25541, at *3 (N.D. Ill. Jan. 4, 2021) (“[T]he Court agrees that ‘seeking a worldwide license helps both parties avoid the extraordinary transaction costs of litigating or licensing a global patent portfolio on a country-by-country basis.’ [Saint Lawrence Commc’ns L.L.C. v. Motorola Mobility L.L.C., No. 2:15-CV-351-JRG, 2018 WL 915125, at *9 (E.D. Tex. Feb. 15, 2018)]”).

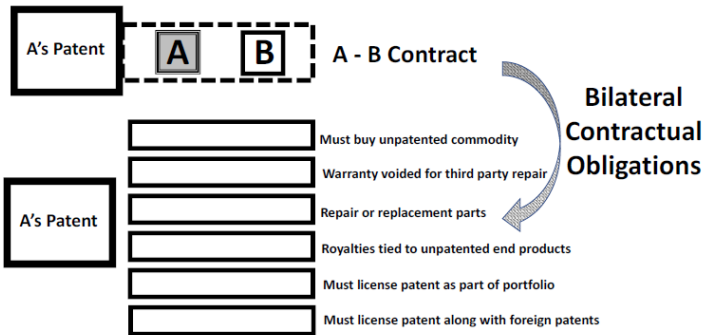
reveal the difficulty courts have in telling those bilateral obligations that are “related to” the patent grant from those that are not.⁵⁷

If a party takes a license to use a product that is patented in many of the jurisdictions in which it does business, it might just be more convenient for both parties to allow the license to apply on a global basis, at a discounted rate... TT did not misuse its patents by entering into these agreements.

In a later section I argue that these terms, which are quite common, ought to be enforceable as a matter of course, because they (1) reflect the intertwined nature and value of the various types of information and IP rights exchanged in many technology development partnerships; and (2) demarcate an effective and enforceable boundary defining the scope of the licensing agreement.

⁵⁷ See *Binks Mfg. Co. v. Ransburg Electro-Coating Corp.*, 281 F.2d 252, 259 (7th Cir. 1960), cert. granted, 364 U.S. 926 (1960). In *Binks* the court actually entertained a misuse argument where a patent owner offered free replacement parts to patent licensees willing to both license a patent and lease patented equipment from the patent owner/lessor. Free parts were said to be “tied” to the patented equipment. The licensee argued that this arrangement in effect tied replacement parts to the patented invention – in a case where there was not only no evidence of “leverage”, but where the evidence showed the vast majority of licensees preferred the license/lease arrangement. As the court said,

[Licenses] are available without equipment being leased from the defendant. ... Although ... customers preferred the license-lease arrangement it is not indicated that such preference was due to defendant’s insistence [i.e., coercion or leverage]. Nor did the evidence concerning the difference in consideration paid require a finding that it was a compelling factor. That defendant furnished replacement parts without additional charge where the licensee leased equipment does not, on the facts here involved, evidence a Clayton Act or other anti-trust law violation



III. THE VIRTUES OF PATENT CONTRACTS

To recap: we started with an understanding of the patent licensing contract as a dual entitlement bundle. Having teased apart the two strands analytically, I then critiqued the patent misuse doctrine for the loose and sloppy way it conflates, equates, and confuses the two separate strands. In its place, I suggest a superior way to review dyadic agreements that could seriously impact third parties by applying Restatement § 178.

Beyond this analytic critique, we now add an affirmative case for a much more benign approach to patent contracts. This begins with an appreciation for the benefits of licensing, as seen from an economist’s perspective. One summary of the licensing literature says this:

From a social welfare perspective, licensing has many potentially positive effects. Licensing of patents increases the diffusion of technology, facilitates vertical specialisation and the division of tasks between companies and prevents R&D duplication in the economy. Licensing can boost downstream competition by reducing barriers to entry related to R&D. Returns from licensing can be in turn invested on further innovation by licensors. Finally, licensing facilitates the exploitation of a technology at a larger

scale than if the patentee did it alone: licensing permits commercialisation of technologies across industries, on a larger geographical scale, in countries or regions where the patentee does not operate.⁵⁸

Licensing gives firms flexibility. It allows firms to respond to a new technology or other competitive threat quickly without taking the time to develop internal resources:

Licensing affects innovation, because firms incorporate and recombine licensed knowledge into their ongoing R&D efforts. Drawing on the characteristics of licensing, we suggest that licensing-in facilitates a prompt and focused response to competitors, because firms can integrate existing externally developed technologies with their internal R&D. Thus, licensing is an important means through which firms can innovate in areas where they are under competitive pressure.⁵⁹

A bare patent license permits the licensee to escape legal liability, but it will not usually be enough to instruct and guide the licensee in all the nuances of the claimed technology. Most patent infringement cases, for example, end with a settlement in the form of a bare legal license. In those cases where the defendant in the infringement suit independently developed the infringing technology and learned little or nothing about the relevant technology from the licensed patent or its owner, the economic function of the license is simply to end a dispute. The licensee learns nothing from the patent owner. No new information or

⁵⁸ Dominique Guellec & Maria Pluvia Zuniga, *Who Licenses Out Patents and Why?: Lessons from a Business Survey*, (Org. for Econ. Coop. & Dev., Statistical Analysis of Science, Technology and Industry, STI Working Paper, 2009) [hereafter Guellec and Zuniga, Licensing Study 2009].

⁵⁹ Solon Moreira, *Competition, Technology Licensing-in, and Innovation*, 31 *Org. Sci.* 1012, 1013 (2020).

capabilities pass between them. Transactions like this may have their purpose, but they do not, in general, facilitate a division of inventive labor or a value-adding integration of components and skills supplied by the two parties to the license.

A. The crucial Importance of Bundled Trade Secrets and Know-How (TS-KH)

In many other cases, however, the patent rights in a license are accompanied by trade secrets and know-how (“TS/KH”).⁶⁰ These are richer and deeper exchanges as

⁶⁰ See Christian Bessy & Eric Brousseau, *Technology Licensing Contracts: Features and Diversity*, 18 Int’l Rev. L. & Econ. 451, 461 (1998) (references and footnotes omitted):

Technology licensing implies many transfers in addition to the patent description: private information that is not capable of being patented [industrial secrets and test data, among other things], . . . training, technical support, consultant services . . . , equipment, and other physical resources that are essential to implement and use the technique. In our sample [of 30 French firms involved in licensing], 78.6% of [technology licensing agreements, or] TLAs cover the provision of technical test data and development data in addition to the transfer of the right to use them. The proportion reaches 76% for technical support, 67.4% for prototypes and physical resources, the same percentage for plans and manuals (“red books”), 65% for employee training, 60.8% for commercial data, and 56.5% for employee delegation in the licensees facilities.

See also Rochelle Cooper Dreyfus, *Dethroning Lear: Licensee Estoppel and the Incentive to Innovate*, 72 Va. L. Rev. 677, 693 n.66 (1986):

A recent survey of 150 randomly selected corporations designed to elicit information relating to licensing agreements, although too limited to yield statistically significant conclusions, reveals some interesting trends. See [Michael] Rostoker, *PTC Research Report: A Survey of Corporate Licensing*, 24 Idea 59 (1983). A majority of all licenses contained both patent and know-how components, id. at 63, with compensation usually provided by royalties, sometimes coupled with an initial lump sum payment, id. at 64. In the chemical, mechanical, and pharmaceutical industries, royalties were lower for

compared to bare patent licenses. The small-grain details – how to actually implement a technology, make a product, conduct a process, or integrate a component – are often crucial to actually learning and applying a new invention. Patent licenses accompanied by associated TS/KH information promote deep, robust interaction: the transfer of real *technologies* and not just patent rights. This type of patent license contributes to the viability of specialist technology firms and indirectly to a more variegated industry structure. Contracts that include patent rights plus TS/KH make possible a true “market for technologies.”

In the transfer of technological know-how from one firm to another, teamwork is essential. Employees of the patent owner must develop enough trust in the licensee firm to disclose the nitty-gritty technical details required to understand and apply the relevant technology. Sometimes, the trust comes from past contacts: the parties might have engaged in prior technology transfers, or someone on one side of the transaction is a former colleague of those on the other side. The licensor has to trust the licensee with sensitive and typically unpatented features of the technology – features that are difficult or impossible to protect with effective intellectual property rights.

When a licensor team believes the licensee can be trusted, the licensor has reason to collect TS/KH information and put it into a form that can be useful to the licensee. This takes effort. According to a well-known metaphor, technological information of this kind is “sticky”: it clings to the people, machines, and organizational routines of the group that created it and uses it.⁶¹ So a licensor must often make investments to “unstick” TS/KH information – pry it

know-how licenses than patent licenses; in the electrical, petroleum and transportation industries, however, royalty percentages for know-how and patent licenses were almost identical. *Id.* at 64-71.

⁶¹ *E.g.*, Eric von Hippel, “*Sticky Information*” and *the Locus of Problem Solving: Implications for Innovation*, 40 *MGMT SCI.* 429, 429 (1994).

out of the context it sticks to, making it moveable to another site (the licensee firm). If the risk of misappropriation is too great, trust may remain in short supply in the licensing relationship. Little of the really essential TS/KH information will actually change hands. With important information stuck in place and no strong incentive to “unstick” it, much of the potential gain from a technology transfer may go unrealized.

Beginning in 1995, economist Ashish Arora began exploring markets for technology. In a definitive early article, *Licensing Tacit Knowledge: Intellectual Property Rights and the Market for Know-How*,⁶² Arora showed how the transfer of patent rights promotes the patent licensor’s disclosure of trade secrets and know-how (TS-KH):

[S]imple arms length contracts can accomplish the transfer [of] know-how. The key to the success of arms length contracts is the complementarity between know- how and patents. The model explains why patents and know-how are bundled together in licensing contracts. . . . [A] key to the success of the arms-length contracts is the complementarity between know-how and patents: know-how is more valuable when used in conjunction with the codified (patented) components of the technology. This complementarity allows the licensor to use the protection accorded to the codified components of the technology, i.e. the patent, to protect himself against opportunistic behaviour by the licensee.⁶³

⁶² Ashish Arora, 4 *Econ. Innov. & New Tech.* 41 (1995).

⁶³ *Id.* at 41–42. The tight connection between a patented invention and the TS-KH information that clusters around it is evident not only from the fact that most patent licenses also cover related TS-KH, but also from the record left by legal disputes. For example, in *Eastman Chemical Co. v. AlphaPet Inc*, the court consolidated two separate patent infringement suits because both sets of patents were licensed to the same accused infringer, and development of related trade secrets involved common

B. *Bundling-Convoy-Hostage Theory*

When we recognize that patents are often *bundled* with TS-KH and that some of the threat value of a patent “pours over” to help protect otherwise vulnerable trade secrets, another rationale for no-challenge policies comes into view. When our field of vision widens to embrace the full transactional context, we find reasons to be wary of rules and doctrines that undermine the relational stability of patent-centered deals.

The bundling solution can be seen as a special case – the obverse, really – of the more general “appropriability” theory of David Teece.⁶⁴ Teece famously theorized that when formal IP rights fail to pay for an innovator’s R&D costs, complementary assets can sometimes be leveraged to supply supranormal profits that help the innovator recoup its investment.⁶⁵ So, for example, a new food product might contain a modified formulation of a well-known natural ingredient; the research costs behind this unpatentable

facts: “[T]he development and scope of the parties’ respective . . . trade secrets will likely be relevant to both actions, given that those issues will be closely tied to the ultimate question of whether infringing activity has occurred [with respect to one or more of the licensed patents]”. There are also some cases that attempt to put a separate value on the trade secrets and know-how transferred along with a patent. These cases respect the *Lear* rule by permitting licensee challenges, but reward damages under a restitution theory for the licensee’s use of patent-related trade secrets and know-how. 2011 WL 7121180, *4 (D. Del. 2011). See Dreyfus, *supra* note 34, at 695–96 n.75 (1986), citing Chromalloy Am. Corp. v. Fischmann, 716 F.2d 683, 685–86 (9th Cir. 1983) and St. Regis Paper Co. v. Royal Industries, 552 F.2d 309, 315 (9th Cir.1977), (ordering restitution payments for trade secrets and know-how when a patent is invalidated notwithstanding a contractual no-challenge clause).

⁶⁴ See David J. Teece, *Capturing Value from Technological Innovation: Integration, Strategic Partnering, and Licensing Decisions*, 18 STRATEGIC MGMT. 47, 48 (1988).

⁶⁵ *Id.* at 51–52.

innovation⁶⁶ could be recouped if the innovator has a well-known brand, efficient manufacturing facilities, and a large, established distribution network (trucks, warehouses, arrangements with supermarkets, etc.). The pricing edge gained through control of the complementary assets (brand, manufacturing, and distribution) helps to subsidize the R&D investment.

In hybrid patent-TS/KH licenses, something similar occurs: the formal IP right (patent) helps recoup the value of the hard-to-protect TS/KH information. The patent is a “complementary” asset with respect to the TS/KH information. Just as the value of branding, manufacturing, and distribution complements the value of the innovative ingredient in the food industry example, the value of patent rights is a complementary asset with respect to the TS/KH information. Control of the patent, then, can help make up for the lack of effective IP protection for that information.

Several students of patent licensing have argued that hybrid licensing works on the same hostage principle.⁶⁷ If a

⁶⁶ The modified formula is unpatentable because it occurs naturally.

⁶⁷ Arora, *supra* note 35, at 44:

The licensor can withdraw the patent (i.e. deny the licensee any right to use the patent) if he is not satisfied with the licensee’s behavior. Here the assumption that know-how is complementary to the patented component of technology is crucial...[K]now-how tends to be highly application and context specific. Therefore, the value of the know-how to the licensee will be higher if used together with the patented component of the technology. [The licensee can in turn insist on two separate payments, withholding the second one if the licensor misbehaves.] The mutual “hostage taking” allows a self-enforcing contract in know-how to work, even though no externally enforceable contract exists.

See also Guellec & Zuniga, *supra* note 32, at 6:

Patent licensing plays a central role in technology markets. It frequently constitutes the pillar for knowledge exchange as patents can work as “credible hostages” when non-protected, complementary know-how and services are provided. This [article]

licensee misappropriates TS/KH information, the licensor can withdraw the license and sue for patent infringement if necessary. In place of a money bond, the licensee makes investments to implement and apply the licensed technology. These investments commit the licensee to a path that (a) depends crucially on access to TS/KH and (b) leads straight to patent infringement if the underlying patent license terminates. So long as it's in effect, the license exempts the licensee from concerns with infringement. But a licensor that terminates a license leaves the licensee with two bad choices. Continue the development project but without a license and risk being sued for infringement. Or drop the project and lose the money that was invested under the assumption that the project was covered by a patent license.

Healthy, successful technology transfer takes place when the parties learn to trust each other. There is good reason to believe that trust develops over time and that the more the principals get to know each other, the richer the technology exchange between them.⁶⁸ There is a hard-edged

aims at providing new evidence on the...obstacles companies face when attempting to commercialise patents in markets.

See generally Oliver E. Williamson, *Credible Commitments: Using Hostages to Support Exchange*, 73 *Am. Econ. Rev.* 519 (1983).

⁶⁸ Marco Tortoriello & David Krackhardt, *Activating Cross-Boundary Knowledge: The Role of Simmelian Ties in the Generation of Innovations*, 53 *Acad. Mgt. J.* 167, 168 (2010) (emphasizes importance of dense inter-company connections, referred to as “Simmelian” after the sociologist George Simmel; a “Simmelian tie” is formalized as a situation where A and B have a long-term, repeated connection to each other inside an organization, and where both A and B have a similar close connection to person C in another organization); dense clusters of these types of triads (A,B and C) predict greater knowledge flows between organizations):

Bridging relationships [e.g., A to C, and B to C] embedded in a dense social structure facilitate the formation of common knowledge and shared meanings, reduce frictions due to differences in understanding, and promote the cooperation and coordinated actions

realism about this, to be sure; where opportunism is possible, it only makes sense to develop trust in small increments. So it takes time. Copious scholarship backs this up: increased familiarity –repeated interactions,⁶⁹ dealing with former

that are necessary to integrate and take advantage of diverse sources of knowledge.

See also David T. Robinson & Toby E. Stuart, *Network Effects in the Governance of Strategic Alliances*, 23 J. L. Econ. & Org. 242, 242 (2007) (finding that “the stock of prior alliances between participants in the biotechnology sector forms a network that serves as a governance mechanism in interfirm transactions”).

⁶⁹ Swati Panda, Saurabh Srivastava, & Satyendra C. Pandey, *Nature and Evolution of Trust in Business-to-Business Settings: Insights from VC-entrepreneur Relationships*, 91 Ind. Mktg. Mgt. 246, 247 (2020):

Trust in B2B relationships emerge[s] when one party has confidence in the other party’s intention to act in the interest of the relationship... Interdisciplinary views on trust suggest that trust plays a decisive role in determining the attitudes and behaviors of both parties by encouraging positive emotions, collaboration, information sharing, and creativity . . . , ultimately leading to competitive advantage for both side... Parties can proactively build trust by signaling commitment, consistency, fairness and justice, and sharing information... In a B2B relationship, contracts are inherently incomplete; thus, relational mechanisms such as trust play a potent role in addressing unforeseeable contingencies and ensuring cooperation

See also Dan Li, Lorraine Eden, Michael A. Hitt, & R. Duane Ireland, *Friends, Acquaintances, Or Strangers? Partner Selection in R&D Alliances*, 51 Acad. Mgt. J. 315, 315 (2008) (“Data on 1,159 R&D alliances indicate that the more radical an alliance’s innovation goals, the more likely it is that partners are friends [i.e., have had multiple strategic past interactions] rather than strangers.”); See also Robinson & Stuart, *supra* note 39, at 242 (finding that “the stock of prior alliances between participants in the biotechnology sector forms a network that serves as a governance mechanism in interfirm transactions”).

colleagues,⁷⁰ etc.⁷¹ – is uniformly associated with a greater likelihood of alliance formation, licensing deals, and successful outcomes.⁷² One feature casts a long shadow over the market for technology. Except in the rarest of cases, information about new technologies always leaks from the

⁷⁰ See Stefan Wagner & Martin C. Goossen, *Knowing Me, Knowing You: Inventor Mobility and the Formation of Technology-Oriented Alliances*, 61 Acad. Mgt. J. 2026, 2026 (2018) (“Using data on inventor mobility and alliance formation among 42 global pharmaceutical firms over 16 years, we show that inventor mobility is positively associated with the likelihood of alliance formation in periods following inventor movements.”).

⁷¹ See, e.g., YoungJun Kim & Nicholas S. Vonortas, *Technology Licensing Partners*, 58 J. Econ. & Bus. 273, 274–75 (2006):

We find strong evidence that two companies will tend to engage in licensing agreements the closer their technological profiles, the closer their market profiles, the more familiar they are with each other through prior such agreements, the higher their prior independent experience with licensing, and the stronger the intellectual property protection in the primary line of business of the licensor. Directly or indirectly, all these factors determine the anticipated costs of licensing a piece of technology, including transaction costs (the costs of negotiating, monitoring, and enforcing contracts) as well as the costs related to technology transfer, learning, and eventual application.

⁷² Oliver Williamson, in his transaction cost theory, identifies investments that are required to perform a contract with a specific party, or which make the exchange with that party more profitable, but which cannot be recouped if that party reneges on the deal. He calls this “asset specificity.” See OLIVER WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM* 30 (1985). There are many case studies documenting the existence of these party-specific investments. See, e.g., Benjamin G. Klein and Howard A. Shelansky, *Empirical Research in Transaction Cost Economics: A Review and Assessment*, 11 J. L. Econ. & Org. 305, 341–44 (1995). Jeffrey H. Dyer and Nile W. Hatch, *Relation-Specific Capabilities and Barriers to Knowledge Transfers: Creating Advantage Through Network Relationships*, 27 Strat. Mgt. J. 701, 716 (2006) (empirical study of auto component supply relationships; “[S]ome firm capabilities are relation-specific and are not easily transferable to other settings.”).

inventor/innovator to others in the industry.⁷³ This happens in all sorts of ways,⁷⁴ with employee mobility leading the

⁷³ By leakage here I mean the passing of information outside the “deal circle”, which is composed of the originating firm and that firm’s licensing partner. Transfer of information within the relationship (subject to contractual safeguards) is of course essential to the success of the deal. But leakage beyond the licensing partners is different. See Siah Hwee Ang, *Competitive Intensity and Collaboration: Impact on Firm Growth Across Technological Environments*, 29 *Strat. Mgmt. J.* 1057, 1058–59 (2008) (Because “[a]ccess to a partner’s complementary resources . . . allows . . . learn[ing] and accelerate[s] speed to market”, licensing necessarily involves information transfer; but study data show that “[c]ollaborating with potentially weaker firms also risks diffusing the distinctive resources that have helped the firm establish its advantageous position in the first place. Thus, firms that face low levels of competitive intensity may hold off collaborating as potential gains may be offset by the costs and risks involved.”).

⁷⁴ And often benefits society as well. The well-known “positive spillovers” from R&D activity in fact provide much of the rationale for singling out IP-protected works as an appropriate subject of property rights. On spillovers. See, e.g., Wesley M. Cohen, Akira Goto, Akiya Nagata, & Richard R. Nelson, *R&D Spillovers, Patents and the Incentives to Innovate in Japan and the United States*, 31 *Res. Pol’y* 1349, 1349–50 (2002); Robert C. Allen, *Collective Invention*, 4 *J. Econ. Beh. & Org.* 1 (1983). There are also, ultimately, benefits to an innovative firm from participating in a high-mutual-spillover industry. Aside from reciprocal mutual spillovers (you benefit from my research, I benefit from yours), there are also direct benefits from stimulating an industry-wide research program that brings attention to and promotes the market for one’s own innovations. See Hongyuan Yong, Corey Phelps, & H. Kevin Steensma, *Learning from What Others Have Learned From You: The Effects of Knowledge Spillovers on Originating Firms*, 53 *Acad. Mgt. J.* 371 (2010) Using as an example Kodak’s development of Organic Light-Emitting Diodes (OLED) in 1985:

During the next 15 years, over 30 firms, including Sony and Xerox, exploited Kodak’s efforts by combining [Kodak’s] core discovery with other complementary knowledge to generate additional innovations. Rather than depleting innovative opportunities and limiting Kodak’s ability to advance OLED technology, the innovative efforts of these recipient firms seem to have increased Kodak’s opportunities for innovation and enhanced its subsequent innovativeness.

parade. A classic study claims, on the basis of a limited sample of 100 technical innovations, that this happens within eighteen months of product introduction, on average.⁷⁵ Whatever the actual figure, disclosure from firm A to firm B undoubtedly increases the risk that the specific information will leak out, especially when firm B is large (has more employees) compared to A.⁷⁶ The greater the number of employees that know the information, the more likely one or more will leave to join a new employer, inadvertently disclose the information to professional colleagues or the like.⁷⁷ However it happens, loss of control of essential unpatented information is the single greatest threat for many licensors of innovative technology.⁷⁸

To summarize, unpatented TS-KH information is both vital and vulnerable. Most patent licenses contemplate

⁷⁵ Edwin Mansfield, *How Rapidly Does New Industrial Technology Leak Out?*, 34 J. Ind. Econ. 217, 217 (1985) (Survey of 100 innovating firms: “[I]nformation concerning development decisions is generally in the hands of rivals within about 12 to 18 months, on the average, and information concerning the detailed nature and operation of a new product or process generally leaks out within about a year.”).

⁷⁶ THOMAS J. ALLEN, *MANAGING THE FLOW OF TECHNOLOGY* 40 (1977) (“Information is transferred in technology primarily through personal contact.”).

⁷⁷ *See, e.g., id.* at 43 (“[T]he best way to transfer technical information is to move a human carrier. The high turnover among engineers results in a heavy migration from organization to organization [i.e., 12.5% average turnover per year] and is therefore a very effective mechanism for disseminating technology throughout an industry and often to other industries So the mere existence of high turnover among R&D personnel vitiates much of the protectionism accorded proprietary information.”).

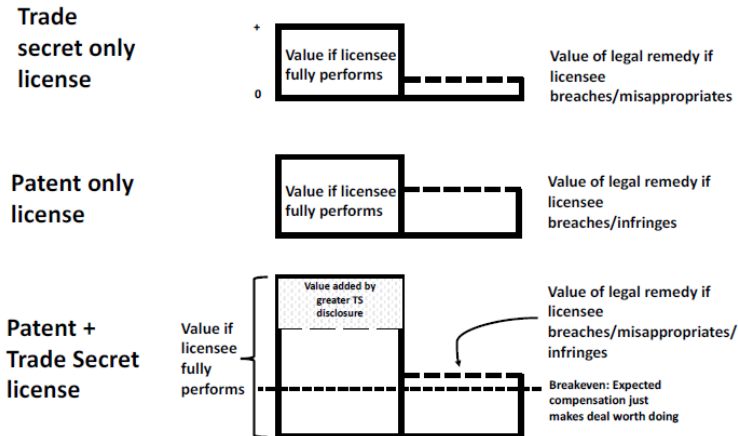
⁷⁸ Venture capitalists have been identified as one vector through which leakage occurs. *See* Emily Cox Pahnke et al., *Exposed: Venture Capital, Competitor Ties, and Entrepreneurial Innovation*, 58 ACAD. MGT. J. 1334, 1335 (2015) (“[O]ur theory and results highlight important drawbacks of connectedness, and demonstrate that certain ties have the potential to make new firms even more vulnerable—[an issue] that we refer to as competitive leakage.”).

that TS-KH information will be bundled with the licensed patent rights. The convincing theory says that this is no accident. In real technology transfer, patent rights do more than simply shield the licensee from legal liability. They open a communication channel between the patent-owning firm and the licensee firm. Through this channel flows the TS-KH information that is so often essential to the success of the mutual project. The formal legal relation, established by a patent license, acts like the trusses and beams of a tunnel or passageway. It establishes a sturdy conduit, an open passageway between the two firms.

C. Patent Anchoring: Leveraging Patents for Fun, Profit and Social Welfare

From a strictly numerical point of view, there are two chief benefits to anchoring the TS/KH exchange around a patent. The more robust patent remedies soften the blow of non-performance by replacing the likely recovery from trade secret misappropriation (which is quite low) with the higher expected value that follows from patent law's more robust remedies. Licensee breach, though perhaps disappointing, nevertheless results in a better "fallback" when a patent is included in the license. This more secure fallback means that a rational licensor will disclose more sensitive information to the licensee. The patent owner will disclose more trade secret information and, in general, work more closely with the licensee. In many cases, this opens the way to greater value creation through collaboration. Greater back-end protection, in other words, causes greater up-front information sharing and tighter integration of the contracting parties. It is the patent—the property right at the heart of the deal—that unlocks the potential gains from tighter dyadic integration.

The simple point is that transacting for trade secrets alone is risky and thus rarely profitable. But add a patent to the mix, and that changes. This diagram illustrates the point.



As you can see, including a patent in a deal where TS/KH exchange is crucial can make that deal more attractive. The patent-based remedy improves the licensor’s prospects in the event the licensee breaches. Although trade secret-specific remedies are still unreliable, the remedies for patent infringement are strong enough to make the deal worth doing. The inclusion of one or more patents to “anchor” the deal raises the compensation level high enough to offset the risk of trade secret misappropriation. This makes it possible for the patent owner to achieve the potential gains from a deep collaboration, represented graphically by the box “Value added by greater TS disclosure.”

Notice the difference between “patent anchoring” and the old (I hope now discredited) “extension of monopoly” language from misuse doctrine. The estimated return from a hybrid patent/TS agreement in the event of breach is not meant to imply that some of the value of the trade secret is captured in the legal remedies for patent infringement. It is not a matter of bringing some of the

unique harm from trade secret misappropriation into the patent damages calculus. The example illustrates instead that because patent remedies capture something closer to the full measure of the patent owner's loss, they provide a higher floor to the patent owner's payoff in the event of a licensee breach. The damages are for patent infringement, plain and simple; separate harm from trade secret misappropriation may still be difficult to recover. But this higher floor— in combination with the higher payoff in the event the licensee performs fully— still makes the deal worth doing.

My point is not that every patent + trade secret license holds the potential for big gains. Nor that patent remedies are optimized to support licensing. Instead, I've simply shown how, in some cases, the private ordering of technology-intensive collaborations opens the potential for significant economic gains. Once we stop worrying about "extensions of the grant" (or monopoly), we can start noticing how parties use patents as a transactional anchor supporting the exchange of value-adding proprietary information. Hybrid contracts have nothing to do with altering the statutory balance set by Congress in the original grant of patent rights. They do not "leverage" patents in the harmful way envisioned by misuse cases. Instead, hybrid contracts have everything to do with skillfully deploying statutory patent grants so as to support and promote arm's length commercialization of important inventions and associated proprietary know-how.

If this be leverage, then it is the good kind. By anchoring otherwise elusive transactions, patent contracts promote valuable exchange that is otherwise hard to organize. And the very idea of anchoring flips the concerns of the misuse cases completely upside down. Those cases were based around the (supposed) awesome power of the patent monopoly and the potential this power held to induce contracting that, in effect, extended the power of the initial grant. Anchoring also depends to some extent on the

powerful remedies available under the Patent Act. But its main point is that the truly valuable asset involved in a patent contract is often the information that is *not patented*. At the heart of patent anchoring lies the notion that sometimes patents are most valuable, not as ends in themselves, but as means to another end. A patent contract does not, I have said, extend the federal property right. But it can, in the right circumstances, extend the horizons of contracting parties wishing to work cooperatively in fields where sensitive and valuable TS/KH will inevitably diffuse to contracting partners.⁷⁹ Patent contracts can help manage this information flow so as to protect against opportunism and build trust.

IV. NORMATIVE POINTS: TOWARD A MORE DYADIC PATENT LAW

So far, I have done my best to explain why the patent-contract doctrine badly needs updating. I started with patent misuse. But misuse was not the only rule that shortchanged the value of dyadic ordering based on patent rights. Now it's time to work through some other contract-restrictive doctrine from the misuse era. Our emphasis once again will be to promote a more dyad-friendly treatment for patent contracts. Once through with that task, there remains a need to assess and regulate patent contracts that unduly harm third parties. For this, the traditional "void as against public policy" defense will serve quite well, as I explain.

⁷⁹ On this point, *see* Merges, *supra* note 1, at p. 480 (describing the way patents augment "transactional capabilities" in technology-related transactions).

A. Dyadic Validity, Patent Duration, and Patent Scope

By “dyadic validity” I mean patent validity viewed from within the contracting relationship. Unlike the normal sense of validity as (1) an absolute, binary status pertaining to patent property rights, that is (2) also a crucial policy lever protecting the public interest, dyadic validity permits parties to handle validity more flexibly, in service of the mutual goals of the contracting parties. Dyadic validity has a twin in the idea of dyadic patent duration. The statutory patent term is an iron constraint set according to a careful balancing of policies. From this, and under the by-now-familiar concept of the “extension of the grant,” the Supreme Court decreed in *Brulotte* (1964) that the patent term could not be tampered with by parties to a contract. Post-patent-expiration royalties, payable to a patent owner under a license, were prohibited. As with *Lear*, so with *Brulotte*, in my book: it needs to be retired. A private agreement requiring royalty payments after a patent expires should be looked at the same way as a private no-challenge clause. Unless the post-expiration licensee payments somehow harm third parties, the obligation to continue to pay royalties for a term set by the parties ought to be enforced.

1. Is This the Promised End?⁸⁰ Farewell to *Lear*, Hello to No-Challenge Clauses

Beginning in the 1930s, antitrust experts orchestrated a concerted attack on the overall value of the U.S. patent system. Hearings by the 1935 Temporary National Economic Committee (TNEC) set the high-water mark, perhaps, but there were plenty of other forums where the dangers and evils of patents were laid out. The target was almost always the deployment of patents by big business. This was the most visible part of the economy, especially to

⁸⁰ WILLIAM SHAKESPEARE, KING LEAR act 5, sc. 3, l. 316.

antitrust lawyers. When they spoke of “small business,” they were more likely to invoke localized producers and retail outlets— the “mom and pop” shops celebrated by populists as repositories of American virtue. At this time, entry into new industries and small, specialized production companies were not much in evidence in the writings of antitrust scholars. Nor was the development of new technologies in general. Overall, they adopted a highly static view of industry and the economy.⁸¹

A common refrain among antitrust lawyers and scholars was that the patent system had outlived its usefulness— or had failed to adapt to modern conditions, at least. Yale Professor Walton Hamilton led the charge here, but he had plenty of company. The leading count in the indictment of patents was this: the patent system, once of noble purpose, had not been changed in line with changes in the economy. The reward to inventors of the eighteenth century had transformed into a tool of corporate control in the twentieth. It was time to bring the patent system up to date with the realities of the twentieth century economy.⁸²

The advent of the anti-monopoly Supreme Court of the 1940s soon overshadowed the old private law perspective. When that Court surveyed the patent licensing

⁸¹ The static view of production technology in mid-twentieth century antitrust thinking is hinted at in some comments by Herbert Hovenkamp, who writes:

In the 1940s and 1950s, neoclassical industrial-organization economists, such as Joe Bain, the leading protagonist of the Harvard School of industrial economics, tended to view the competitive rationales for vertical integration as driven purely by [existing] technology—justified where a physical step could be eliminated between two processes, but not otherwise.

Herbert Hovenkamp, *The Law of Vertical Integration and the Business Firm: 1880-1960*, 95 IOWA L. REV. 863, 872 (2010) (footnotes omitted).

⁸² WALTON HAMILTON, PATENTS AND FREE ENTERPRISE, TEMP. NAT'L ECON. COMM., Monograph No. 31, 76th CONG. 3D SESS., 159–60 (Sen. Comm. Print 1941).

scene, all it could see were contracts promoting economic concentration and thwarting healthy competition.

The 1940s Court continued the theme, for example by aggressively promoting patent challenges by any and all comers, including perhaps especially the contractual partners of patent owners— licensees and, almost but not quite, assignors. Particularly in opinions by Justice Douglas, the patent challenge cases no longer hinged on estoppel by deed, commercial morality, or the general support of private ordering. What mattered was the need to empower assignors and licensees to root out and expose invalid patents.⁸³ More often than not, the implication was that patents were a thin cover for anticompetitive acts. Maybe because the Court encountered some fairly egregious patent-based (or patent pretexted) monopolies in the twentieth century, it developed a marked antipathy to patents. The end of licensee estoppel in *Lear* was only a small skirmish in an all-out assault on the clear and present danger of patent monopolies.⁸⁴

Politically, this was one manifestation of the Progressive era's challenge to the concentration of power in the hands of large companies. Conceptually, the key was the association of patents with monopolies. This raised the stakes on the value of patent invalidation, flipping the balance that had traditionally tipped in favor of upholding

⁸³ These cases implicitly took the view that cases over patent contracts can serve the public interest by fostering challenges to patent validity – an important public law goal. For some private law theorists, legal rules regarding private interactions should in general refrain from an approach that turns private parties into “executive agents”, or agents of the state. See, e.g., Hanoch Dagan and Avihay Dorfman, *Private Law and The Embedded Person* (Aug. 10, 2022), avail. at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4186511 (describing the “executive agent” view of individuals and their interactions; individuals are instruments of the state, so legal disputes over individual-to-individual interactions are merely another avenue for implementing public policy and state-backed goals).

⁸⁴ For a general overview, see MERGES, *supra* note 1 at ch. 5.

integrity in the contracting process. Note that it *was* a balance; even the earliest cases recognized that patent invalidation had benefits for the public. But in those cases, the benefits of invalidation were eclipsed by the importance of “fair dealing.”

The change in doctrine could be described as a changing calculus. The value of challenges goes up due to a perceived increase in the social cost of living with invalid patents. But it might also be said to be a shift in emphasis from property to monopoly, from private law values to public law values. The older cases understood patents as state-backed property rights that vest in private hands and form the scaffolding for numerous business arrangements. But that changed in the pro-challenge era. Beginning in the early twentieth century, patent-related contracts of all sorts were seen differently. The simple license, the joint venture, the commercialization agreement— these were lumped together with proven cases in which patents were used as the pretext for a cartel or cases where a patent on one technology was leveraged blatantly in an attempt to dominate the market for a related product. The logic was simple (although usually wrong): monopolies and cartels can be formed under the pretext of patent transactions; therefore, all or most patent transactions are the pretext for cartels and monopolies. With this as the formative principle, a premium was placed on hunting down and rooting out invalid patents. Patent challengers became a new class of “private attorney generals.”

One additional observation might be ventured. Characteristic of a private law orientation, the “fair dealing” era kept the public interest in patent invalidation mostly off to the side. Consistency and dependability in contracting were the paramount concerns: classic private law values. In the pro-challenge era, the tables were turned. An “insider” to a patent deal—assignee or licensee— was deputized as an agent of the state. This party was empowered to break

through the legal cordon erected by the contract, injecting a dose of public interest into the private precinct of the contracting parties.

2. Post-Expiration Royalties: Dyadic Compensation Agreements and Third Party Impacts

Apart from waiver of validity challenges, dyadic validity includes the possibility of agreements to continue paying royalties after a patent has been invalidated— a reversal of the strict policy against such agreements announced in a 1964 Supreme Court case. Put simply, dyadic validity allows the parties to craft a bargain that serves their private ends, which may include an allocation of the risk of invalidity as between the parties. In the current regime, patent law insists that the policies embodied in the Patent Act must, when it comes to patent validity, continue in effect even within the dyad of a patent contract. These policies are absolute: they must not, under current law, be traded off or balanced against contravening policies or interests. This is precisely what I propose to change. The private law perspective does not, as I have said, require that patent contracts be treated as closed-off and isolated legal domains, impervious to any public law considerations. No. But this perspective does insist that the benefits of private ordering be given their due. If there are potential benefits to permitting parties to contract around some elements of patent validity, my position is simply this: take those benefits into account. In a contract setting, do not treat the important public policies embodied in the rules of patent validity as immutable, absolute, and indubitably more important than mere private benefit. Respect the importance of the dyad, and acknowledge that within it, invalidity should not just be understood as a public-protecting mechanism. Between contracting parties, invalidity has the potential to disturb expectations, to be used for bargaining leverage, and even to

justify opportunistic behavior that is seldom tolerated elsewhere in private law. Dyadic validity takes this into account. It recognizes that, in patent licenses, the public good of strict validity rules— the right to challenge, the absolute prohibition on post-invalidation royalties— may come at the expense of contractual efficiency and interparty fairness. Dyadic validity restores these important values to their rightful place in the law governing patent contracts.

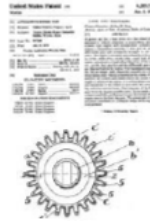
3. Dyadic Patent Scope

Dyadic patent scope has two dimensions. In an enforcement action, a long-standing equitable rule allows a court to “stretch” the outer boundaries of claim language when fairness demands. I argue for the application of this principle when a licensee gains access to a patented technology and then tries to avoid an infringement charge through minor changes to the patent owner’s technology.

The second dimension of dyadic scope involves the interaction between the granted claims of a patent and the scope of the licensee’s contractual duties. A classic licensing term uses issued patent scope to define the licensee’s obligation: anything that infringes one or more claims of the licensed patent requires a royalty, while anything outside does not. The convenience of the property grant as the measure of the obligation has given rise to a body of state contract decisions dealing with cases of breach of a patent license. These courts must interpret the patent claims, just as a federal court would in a patent infringement case. But when they do so, state courts do not set out to determine the limits of a federal property grant. They are merely finding a fact relevant to the issue of breach (e.g., did the products sold by the licensee fall under the language of claim X, in which case royalties are due, or did they fall outside that language, so no royalties are payable).



Invention or technology

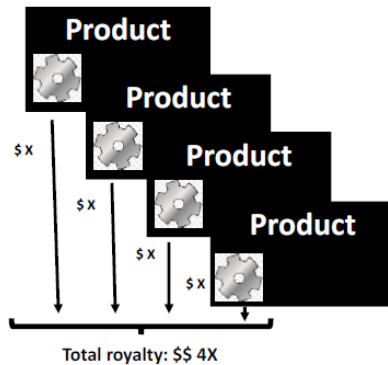


Patent covering invention or technology

The diagram below shows the classic or simple license grant and the royalty stream it creates for the patent owner.



License: royalty payable for any product embodying patented technology



Under this simple structure, the obligation to pay royalties is tied to the sale of products that embody the patented technology— usually defined in the license agreement as “any product that would infringe one or more claims of U.S. Patent X.” Royalties are based on the number of units sold that would, in the absence of a license, count as infringing units.

Many contemporary licenses go beyond this simple approach. They, in effect, expand the obligation to pay royalties by requiring payment for any licensee product that includes *or was developed with the use of* the patent owner's patented invention.⁸⁵ This reach-through device means

⁸⁵ A licensing agreement between patent owner Aduro Biotech and its licensee Janssen Biotech will serve as an example. It was disclosed as part of Aduro's S-1 Registration, an elaborate document required to be submitted to the Securities and Exchange Commission (SEC). *See* Aduro Biotech, S-1 Registration (Mar. 4, 2015), https://content.edgar-online.com/ExternalLink/EDGAR/0001193125-15-087572.html?hash=c602d9cc76383f85f97d5a098144617e0f4cc91e5d37d90e3293a81bc6dfe579&dest=D804420DEX105_HTM#D804420DEX105_HTM. An Appendix to Aduro's S-1 includes the full text of a Research and License Agreement between Janssen Biotech, Inc. and Aduro Biotech, Inc., (Form S-1) (Appendix Date March 11, 2015), with the Agreement available at <https://perma.cc/U9Z7-AFUR>. Aduro licensed its proprietary bacterial cell line medium, which is designed to mimic human immune responses, and thereby trigger activation of immune system enhancers, with the goal of developing better cancer therapies. The Grant of rights covers "Aduro Patents," which are defined as any Aduro-owned patent "useful or reasonably necessary for the Exploitation of a Licensed Immunotherapeutic." The Grant itself (§ 2.1.1) reads: "Aduro hereby grants to [Janssen] an exclusive license . . . under the Aduro [Patents] solely to Exploit Licensed [technology] . . . in the Field [of Use]...." And finally, "Exploitation" is defined (at § 1.64) thus: "Exploitation (including variations such as "Exploit") means the research, development, manufacture, having manufactured, use, having used, sale, offer for sale, importation or other exploitation of a product or service." Collecting terms and simplifying, this means: Janssen agrees to pay royalties for use of any Aduro patent "useful or reasonably necessary" to researching, developing, making, using or selling any Janssen product in the defined class of immunotherapeutic products. The Agreement ties royalties to beneficial use of Aduro patented technology – and not simply to making, using, or selling end products that actually embody Aduro patents. *See, e.g.*, Research and License Agreement between Janssen Biotech, Inc. and Aduro Biotech, Inc., (Form S-1) (Mar. 11, 2015), <https://perma.cc/U9Z7-AFUR>. Another example can be found in License and Collaboration Agreement between Zymeworks, Inc., and Jazz Pharmaceuticals Ireland, Ltd., Inc., Annual Report (Form

royalties are payable even for the sale of items that do not infringe any claim of the licensed patent. An agreement like this imposes contractual liability for downstream activity that is *causally linked* to the use of the patent rights. It means, for example, that an infringer who uses or copies a patented product but goes on to sell a variation on that product that does not itself infringe would be liable for royalties payable on the sale of the non-infringing end product. This license term would also cover cases where an infringer uses a patented machine or process to produce end products that do not infringe the licensed patent.

A term like this represents an agreement by the licensee to pay royalties under a “fruit of the poisonous tree” theory of liability. Liability of this sort is sometimes available in patent law,⁸⁶ but the issue is not free from

10-K) (Mar. 7, 2023) [<https://perma.cc/S92F-ZKBK>], Ex. 10.74 [<https://perma.cc/FPA2-VLRR>] (Zymeworks licensed its proprietary bispecific antibody, called zanidatamab, to Jazz Pharmaceuticals for use in developing therapeutic products; at § 1.79, pp. 9–10, the License grant covers “All [Zymeworks] Patent Rights which . . . are necessary or useful . . . for the research, Development, manufacture or Commercialization of Licensed Antibody or Licensed Products in the Field.”).

⁸⁶ In *Monsanto v. DuPont*, a jury awarded \$ 1 billion in damages for DuPont’s unlicensed use of patented Monsanto soybeans to develop DuPont’s own soybeans, which did not themselves infringe the Monsanto patent. This case report is under seal, but the jury verdict is described at Bernard Chao & Jonathan R. Gray, *A \$1 Billion Parable*, 90 DENV. L. REV. ONLINE 185, 186 (2013), [<https://perma.cc/HXN7-KN4M>]. This is a controversial outcome in some quarters:

Unlike most patent lawsuits that are based on selling infringing products, DuPont never sold its [proprietary variation on the Monsanto soybean] seeds. Here, the accusation of infringement is based on seeds that DuPont developed . . . , and the award is based on the royalties that DuPont would have paid had it negotiated a license ahead of time.

See also Dennis Crouch, *Monsanto Wins \$1b Verdict on RoundUp Ready Seed Patent*, PATENTLY-O (Aug. 8, 2012), [<https://perma.cc/BG3N-8E8Z>].

doubt.⁸⁷ There is support for the view that only products that themselves infringe a patent can give rise to a patent-based remedy— which, of course, eliminates the fruit of the tree damages.⁸⁸ By making this a contract issue, the

⁸⁷See Mark A. Lemley, *The Fruit of the Poisonous Tree in IP Law*, 103 IOWA L. REV. 245, 253–54 (2017) (citation omitted).

[In] contrast to trade secret law, patent law employs the fruit of the poisonous tree doctrine in much more limited and contested ways. Patent infringement is defined largely by the scope of the patent claims and the duration of the patent. Only products or acts that include each and every element of a patent claim or their equivalents are deemed infringing. As a result, courts will not enjoin end products that do not have all the elements of the patent claim, even if they were produced using the patented invention as a template and even if the products were infringing in the lab and only altered to be non-infringing before production. [See *MicroStrategy Inc. v. Bus. Objects, S.A.*, 429 F.3d 1344, 1352 (Fed. Cir. 2005) (no literal infringement where accused product did not contain every element of the claim); *Cross Med. Prods. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1311 (Fed. Cir. 2005) (no direct infringement where accused product did not include each claim limitation).] Indeed, “designing around” a patent by starting with the patented product and then changing it enough to avoid infringement is not only not forbidden, it is actively encouraged.

Id.

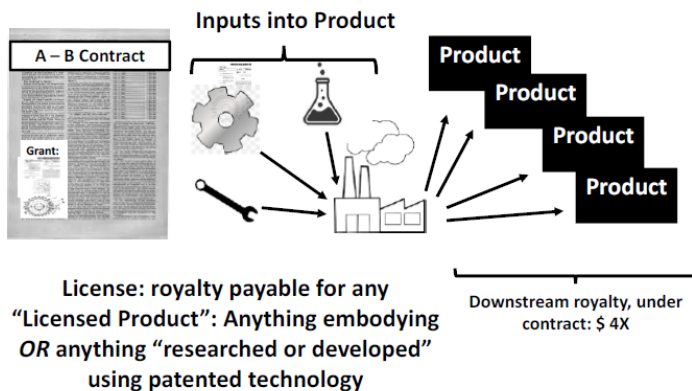
⁸⁸ See *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1556 (Fed. Cir. 1995) (en banc) (H. Nies, J., dissenting). As explained in subsequent commentary:

The dissent by the late Judge Nies takes aim directly at the majority’s central thesis. To paraphrase: it is improper to extend a property right over a set of claimed embodiments into a mechanism of market exclusivity. Unless the patentee is selling something that falls within the claims of the patent, lost profits are beyond question not available. This is because to grant them in such a situation in effect extends the scope of the patent to cover subject matter not within its claims. The patent right, in other words, defines the boundaries of the legally cognizable domain protected against direct harm by the infringer.... What point was Judge Nies trying to make by criticizing the extension of

contemporary licensing format avoids reliance on the shaky case law. This is a subtle type of dyadic patent scope. It is not an agreement that “claim X of patent Y covers 1, 2, and 3.” It is instead an expansion of the *acts* that trigger liability: what you can and can’t do with technology that falls within the literal language of the relevant patent claims. The Patent Act defines patent infringement as “making, using, selling, offering for sale, or importing” any item that falls within the linguistic bounds of one or more patent claims. The contemporary licensing format, in effect, extends this list of infringing acts to include “researching or developing” something with the aid of the claimed technology. The statutory list of infringing acts attaches liability when an end product *embodies* a patented technology. Contemporary licensing extends liability to the use of a patented technology as an *input* into a final product. Using a patented technology to “research or develop” a new product triggers liability—even if that new product itself is not covered by any of the licensed patent claims. The diagram below illustrates the point; notice that the end products do not embody the patented technology, but the technology was used in creating those end products.

the zone of lost profit damages beyond the scope of the patent claims at issue? Was she right that, in effect, allowing compensation for loss of non-covered product sales extends the scope of the patent right to include those non-covered products?

ROBERT P. MERGES AND JOHN F. DUFFY, *PATENT LAW AND POLICY* 855–56 (8th ed. 2021).



This type of term is quite common.⁸⁹ It imposes liability when a patented invention *contributes to* an end product, even if (as required in more classical licensing terms) the end product does not *embody* a claimed invention. Commentators have noted that a “contribute to” term is designed to expand the licensee’s royalty obligation as compared to the statutory default.⁹⁰ Patent misuse logic

⁸⁹ Lemley, *supra* note 56, at 14–15 (calling “contribute to” term by another common name, a “reach-through” term).

[I]f the parties to licensing transactions regularly enter into reach-through royalty agreements, the courts might award reach-through royalties since they would be reasonably expected in transactions of this type. And if courts are likely to award reach-through royalties, parties may well negotiate them rather than going to court.... If courts award damages based on the value of noninfringing downstream products produced using infringing research tools, they are applying a version of the fruit of the poisonous tree doctrine.

Id. Reach-through royalty agreements were part of a controversy over research tool patents in the late 1990s. *See, e.g.,* Kimberlee A. Stafford, *Reach-Through Royalties in Biomedical Research Tool Patent Licensing: Implications of NIH Guidelines on Small Biotechnology Firms*, 9 LEWIS & CLARK L. REV. 699 (2005).

⁹⁰ *See* 1 IVER P. COOPER, BIOTECHNOLOGY AND THE LAW § 10:18 (“It is important to keep in mind that defining a patent or patent application as being included in LICENSED RIGHTS not only includes it in the license grant, but also includes it in the consideration of the definition of LICENSED PRODUCTS, and hence can affect the royalties due.”).

would therefore indicate (fallaciously) that the practice be banned as an “extension of the monopoly.” True to form, several cases have questioned “contribute to” contract terms for enforceability under patent misuse.⁹¹ Perhaps because courts sense the intuitive foolishness of the “extension” notion, none have so far applied misuse to invalidate the term. If, however, a licensee were to explicitly challenge licenses defining the agreement scope as one defined by the material that the patented invention “contributed to,” the court in question should seize the opportunity to reject misuse and instead enforce the term. There are good reasons to do so.

A “contribute to” clause often specifies the outer reach of the license as anything that the licensor’s IP rights “contribute to.” These rights include patented inventions but also related know-how, trade secrets, and the like. A “contribute to” clause reflects the intertwined nature and value of the various types of information and IP rights exchanged in many technology development partnerships. Liability for trade secret infringement is typically assessed when a trade secret contributes to an end product, even

⁹¹ See, e.g., *Viasat, Inc. v. Acacia Communications, Inc.*, No. D077111, 2022 WL 1617118, at *8 (Cal. Ct. App. May 23, 2022) [tagged as non-citable] (interpreting contract requiring payment of royalties for sale of any Licensed Product, defined as any product that “incorporates” any of plaintiff’s patented technology; rejecting defendant’s argument that “incorporation” requires that each end product embody patented technology); *Boyce Thompson Inst. v. MedImmune, Inc.*, No. CIV.A. 07C11217JRS, 2009 WL 1482237, at *9 (Del. Super. Ct. May 19, 2009) (“What is less clear in the Agreement is whether the parties intended that MedImmune’s royalty obligation on net sales of a Licensed Product would be triggered only when the product infringes a Licensed Patent. The Agreement easily could have said that but it did not... While it may be the case, as defendants contend, that [the end product] does not infringe the ’435 patent, it appears uncontroverted, at this stage of the proceedings, that the ’ 435 patent does protect [a cell line used to development the end product] to the extent permitted by law, and that [this cell line] was used in the development of [the end product].”).

though that product does not embody the secret.⁹² A “contribute to” clause extends this treatment to patented inventions, thus eliminating the need to segregate what is patented and what is a trade secret. In this way, the term serves efficiency by demarcating an effective and enforceable boundary that defines the scope of the licensing agreement.⁹³

⁹² See, e.g., *Callaway Golf Co. v. Dunlop Slazenger Grp. Americas, Inc.*, 325 F. Supp. 2d 457, 461 (D. Del. 2004) (“Dunlop asserts that it is ‘well established that use of another’s trade secret in the course of research and development alone is actionable, even if the product produced by the defendant contains modifications or improvements on the original trade secret.’ . . . I do not disagree with that proposition.”). See also LEMLEY, *supra* note 56, at 250 (“Trade secret law is the most expansive in applying the fruit of the poisonous tree doctrine. When the defendant acquires a plaintiff’s secret through improper means or uses or discloses it in violation of a duty to keep it confidential, trade secret [law] will find misappropriation even if the defendant’s final product differs in whole or in part from the plaintiff’s.”).

⁹³ See, e.g., *Viasat, Inc.*, 2022 WL 1617118, at *8 (interpreting contract requiring payment of royalties for sale of any Licensed Product, defined as any product that “incorporates” any of plaintiff’s patented technology; rejecting defendant’s argument that “incorporation” requires that each end product embody patented technology):

[W]e conclude the only reasonable interpretation of the disputed term “incorporate” is that urged by [plaintiff] Viasat. Dictionaries define the word “incorporate” as meaning to “unite or work into something already existent so as to form an indistinguishable whole” . . .

....

[T]his broad, conceptual interpretation is consistent with the rest of the Agreement and the robust royalty obligation it imposes [on end products that “incorporate” licensed patents].

See also *Boyce Thompson Inst.*, 2009 WL 1482237, at *7, *9 (citation omitted, emphasis added):

Whether defendants [MedImmune] owe royalties on net sales of [defendant’s product] depends on whether [that product] is a “Licensed Product” as defined in the [licensing] Agreement. The parties agree, therefore, that [plaintiff] BTI’s breach claim turns on whether [defendant’s product] is “covered” by a valid claim of an issued BTI patent [as required by the Agreement]. According to BTI, “[t]he

B. Regulating Contractual Externalities with the “Void Against Public Policy” Doctrine of Restatement (2d) Contracts § 178

Earlier in this Article, I explained how contract terms can sometimes create significant third-party effects. I mentioned that the classic way to analyze terms like this— to determine if they should be enforced despite the third-party impact – is under the contract doctrine “void as against

Agreement, read in its entirety, shows the parties’ intent was to pay royalties on any product produced using a cell line covered by a BTI patent... Since [defendant’s product] allegedly was developed using [a BTI patented cell line]..., BTI argues that [defendant’s product] must be a “Licensed Product.”....

....

What is less clear in the Agreement is whether the parties intended that MedImmune’s royalty obligation on net sales of a Licensed Product would be triggered only when the product infringes a Licensed Patent. The Agreement easily could have said that but it did not. And while defendants’ argument that the license is necessary only if [sale of its product] infringes a BTI patent intuitively makes sense, and may well ultimately prevail as the correct construction of the Agreement, it is not entirely clear from the Agreement that this was the parties’ intent. BTI granted a license to MedImmune... to utilize [the patented cell line] in the development of marketable “products,” such as “human vaccines.” While it may be the case, as defendants contend, that [its product] does not infringe the [licensed] patent, it appears uncontroverted, at this stage of the proceedings, that the... patent does protect High Five to the extent permitted by law, and that High Five was used in the development of [defendant’s product]. The Court will allow BTI to present extrinsic evidence, if it exists, to support its contention that *patent protection, as opposed to patent infringement, triggers defendants’ royalty obligation.*

public policy.” Now, we consider the idea in a bit more detail.⁹⁴

The Restatement (Second) of Contracts § 178 (1981) reads as follows:

178. When a Term Is Unenforceable on Grounds of Public Policy

(1) A promise or other term of an agreement is unenforceable on grounds of public policy if legislation provides that it is unenforceable or the interest in its enforcement is clearly outweighed in the circumstances by a public policy against the enforcement of such terms.

⁹⁴ I am not the first to propose the Restatement standard as the key source of guidance regarding enforceability of IP licenses. See Karen Sandrik, *Empowering Inventors*, 30 HARV. J.L. & TECH. 147, 154 (2017) (calling for analysis of patent licensing under traditional contracts principles, rather than as a suspicious practice usually designed to somehow “extend” the reach of a patent: “Not all private agreements are ones that society does or should want to enforce; yet, importantly, the law must be transparent when this divergence is necessary. The application of the public policy defense in contract law is illustrative.”); Raymond T. Nimmer, *Breaking Barriers: The Relation Between Contract and Intellectual Property Law*, 13 BERKELEY TECH. L.J. 827, 879 (1998) (“[T]he balancing test proposed here [citing Rest. 2d. § 178] requires that the countervailing interest in non-enforcement clearly outweigh the interest in enforcement that generates from the common base of contract law. This recognizes the acceptance of the fundamental policy that, in general, contracts govern the relationship of parties according to their own terms.”). See also Thomas F. Cotter, *Four Questionable Rationales for the Patent Misuse Doctrine*, 12 MINN. J.L. SCI. & TECH. 457, 471 (2011) (commenting on the *Morton Salt* case: “Morton may have used the leverage of its patent to sell some quantity of unpatented salt, but it never stood a realistic chance of monopolizing the market for salt tablets. The right way to phrase the ‘scope’ question today, then, is to ask whether allowing the patentee to impose condition Y threatens too many negative consequences in comparison with the positive, where the positive includes the marginal increase, if any, in the perceived value of patent rights and the resulting inducement to invent and disclose.”).

- (2) In weighing the interest in the enforcement of a term, account is taken of
 - (a) the parties' justified expectations,
 - (b) any forfeiture that would result if enforcement were denied, and
 - (c) any special public interest in the enforcement of the particular term.

- (3) In weighing a public policy against enforcement of a term, account is taken of
 - (a) the strength of that policy as manifested by legislation or judicial decisions,
 - (b) the likelihood that a refusal to enforce the term will further that policy,
 - (c) the seriousness of any misconduct involved and the extent to which it was deliberate, and
 - (d) the directness of the connection between that misconduct and the term.

Current patent doctrine, including misuse, the prohibition on no-challenge clauses, and the rule against post-patent royalties, embody a public policy of concern that contracts may enhance the economic power of a patent grant. Supreme Court cases such as *Morton Salt*, *Lear v. Adkins*, and *Brulotte v. Thys* emphasize that patent contracts create a risk of societal harm so great that the transactional benefits of the related contract terms hardly deserve mention. The more balanced approach of Restatement § 178 is a roadmap to a better way.

Under § 178, various terms that current law typically finds impermissible would be open for re-examination. A contract tying an unpatented input or component to patent rights would be unenforceable only if “the interest in its enforcement is clearly outweighed in the circumstances by a public policy against. . . enforcement.” (§ 178(1)). The “interest in its enforcement”— which current doctrine mostly ignores— could be substantial. A tie-in for the purpose of metering the licensee’s usage intensity can be beneficial,

maximizing the patent owner's profit while lowering costs for low-intensity users. And because courts are admonished to look at the questionable term in light of its effect "in the circumstances," contextual evidence regarding the patent owner's market share in the market for the tied commodity must also be considered.

Section 178(2)(b) provides useful guidance as well: "In weighing the interest in the enforcement of a term, account is taken of . . . (b) any forfeiture that would result if enforcement were denied". Part II of this Article can be placed in evidence on the issue of "forfeiture." Cases such as *Lear* prevent contracting parties from bargaining over the right to challenge patent validity. So, the threat of patent invalidation will always hover over any licensing agreement. A patent licensor that chooses to disclose valuable patent-associated information could find itself suffering a considerable forfeiture as a consequence. This is especially so if the patent owner/licensor must disclose valuable information early in the contractual relationship, expecting that it will benefit in later years in the form of healthy royalty payments.⁹⁵

⁹⁵ The early disclosure is a form of reliance "expenditure", which is relevant to contract enforceability according to RESTATEMENT (SECOND) OF CONTRACTS § 178 cmt. e (AM. L. INST. 1981).

The interest in favor of enforcement becomes much stronger after the promisee [the patent owner, recipient of the promise to buy commodity inputs from the licensor, not challenge validity of the licensor's patent, etc.] has relied substantially on those expectations as by preparation or performance. The court will then take into account any enrichment of the promisor and any forfeiture by the promisee if he should lose his right to the agreed exchange after he has relied substantially on those expectations.

In earlier eras, forfeiture was considered a serious matter, even as against enforcement of public policies that impact social welfare. In a case involving a buyer of goods sold by a cartel (trust) at inflated prices, the Supreme Court held that the buyer could not renege on the purchase agreement, even though all purchases from the trust in some sense

It is true that an important factor pointing toward non-enforcement under § 178(3) is “the strength of th[e relevant] policy [against enforcement] as manifested by legislation or judicial decisions” (§ 178(3)(a)). While the Patent Act is largely silent regarding patent misuse and associated doctrine, there are ample “judicial decisions” that support the non-enforceability of terms in patent contracts. And the leading ones, moreover, are more than ordinary cases: they are straight out of the Supreme Court. Not to be trifled with.

Even so, as we have seen, various aspects of the hostility tradition have been rolled back over time. The presumption that patents confer market power, central to *Morton Salt* and its kindred, was overturned by the Supreme Court in *Illinois Tool* in 2007. The strongest form of the misuse principle, which at one time threatened to swallow whole the contributory infringement doctrine in patent law, was softened and limited by §271(d) of the Patent Act of 1952 and an amendment in 1988.⁹⁶ And recent case law

furthered the trust’s anticompetitive purpose, which of course violated the antitrust laws:

Whenever a party knows that he is buying from an illegal trust, and still more, when he buys at a price that he thinks unreasonable, but is compelled to pay in order to get the goods he needs, he knows that he is doing an act in furtherance of the unlawful purpose of the trust, which always is to get the most it can for its wares. But that knowledge makes no difference [in an action to compel the buyer to pay the purchase price], because the policy of not furthering the purposes of the trust is ***less important than the policy of preventing people from getting other people’s property for nothing when they purport to be buying it.***

Continental Wall Paper Co. v. Louis Voight & Sons Co., 212 U.S. 227, 270–71 (1909) (emphasis added).

⁹⁶ The Supreme Court had held in 1944, consistent with its “extension of the patent grant” concept, that the assertion of a traditional contributory infringement claim could constitute misuse of a patent. *Mercoid Corp.*

v. Mid-Continent Inv. Co., 320 U.S. 661, 670 (1944); *Mercoird Corp. v. Minneapolis-Honeywell Regulator Co.*, 320 U.S. 680 (1944). This is because contributory infringement permits a finding of infringement liability even though the infringer is making, selling, etc., an item that does not meet every element of a patent claim. The doctrine evolved in equitable fashion to prevent a clever infringer from removing one part of a claimed invention, selling the not-quite-infringing item, and instructing or expecting the end user to supply the missing part. See *Wallace v. Holmes*, 29 F. Cas. 74, 80 (C.C.D. Conn. 1871) (sale of oil lamp burner without chimney did not directly infringe combination claim to burner plus chimney, but it was contributory infringement: “The defendants have not, perhaps, made an actual pre-arrangement with any particular person to supply the chimney to be added to the burner [made and sold by defendant]; but, every sale they make is a proposal to the purchaser to do this, and his purchase is a consent with the defendants that he will do it, or cause it to be done. The defendants are, therefore, active parties to the whole infringement, consenting and acting to that end, manufacturing and selling for that purpose.”). The end user in this scenario directly infringes, but the clever seller of the item does not; without a contributory infringement doctrine, this seller would escape liability. This was classic dyadic thinking. Courts emphasized the intent of the seller to exploit the patent owner’s invention while skirting the edge of legal liability. But where the dyadic focus emphasizes the closing of an opportunistic loophole, the hostility tradition, expressed in the 1944 cases, saw something else: another way to “extend the grant” of an issued patent. Contributory infringement assigns liability to one who sells a not-quite- infringing item (the infringement is completed when the buyer fills in the missing piece). The item sold is not strictly within the terms of any patent claim, so therefore, the *Mercoird* Court reasoned, successfully asserting liability for such sale in effect extends the reach of a patent claim. Liability expands by rendering more items infringing. This can be conceptualized as removing one of the required elements in a patent claim. In the *Wallace v. Holmes* case, for instance, the Court’s 1944 approach would refuse to find infringement for sale of the lamp burners because this in effect eliminates the “chimney” element of the patent owner’s claim to a “burner plus chimney.” The 1952 Act quietly reversed the logic of 1944 by providing, in § 271(d) that “No patent owner otherwise entitled to relief for . . . contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having done one or more of the following: (1) derived revenue from acts which if

shows an awareness of the conceptual weakness of some of the older cases,⁹⁷ along with a reluctance to apply the non-enforcement policy expansively.⁹⁸

This weakening of the policy favoring patent challenges and misuse defenses would also factor into the § 178 analysis— in particular, § 178(3): “In weighing a public policy against enforcement of a term, account is taken of . . . (c) the seriousness of any misconduct involved and the extent to which it was deliberate. . . .” We take “misconduct” to mean unacceptable or improper behavior: a deviation from well-established norms. The Supreme Court, between 1940 and 1970, tried to pin this label on various licensing arrangements that had, for the most part, been perfectly acceptable for years. The label never made sense, and now it is coming unstuck at a rapid clip. It should not be counted as misconduct that contracting parties want to take patent

performed by another without his consent would constitute contributory infringement of the patent; (2) licensed or authorized another to perform acts which if performed without his consent would constitute contributory infringement of the patent; [or] (3) sought to enforce his patent rights against infringement or contributory infringement.” The safe harbor from allegations of misuse was extended in 1988 to include “(4) refus[ing] to license or use any rights to the patent; or (5) condition[ing] the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.” Pub. L. No. 100-703, Title II, § 201, 102 Stat. 4676 (1988).

⁹⁷ See *Kimble v. Marvel Entertainment, L.L.C.*, 576 U.S. 446 (2015) (re-affirming *Brulotte* on strict *stare decisis* grounds; noting the many criticisms of *Brulotte*; suggesting ways for contracting parties to structure payments after patent termination that nevertheless are legal).

⁹⁸ *Minerva Surgical, Inc. v. Hologic, Inc.*, 141 S.Ct. 2298 (2021) (upholding assignor estoppel – kin to licensee estoppel in preventing a patent assignor from later challenging validity – except in cases where the invention as assigned was materially changed in the prosecution of a patent, and the validity of the highly-amended version of the patent was at stake).

validity off the table between themselves or that they should include bilateral obligations to purchase items in connection with a patented item, and so on. I tried to say in Part II something about the “plus” side of various licensing arrangements: the reasons why patent licensing ought to get out of the proverbial legal doghouse and why licensing is beneficial economically. What of the “minus” side of licensing terms that largely built that doghouse? To me, they are not so bad. Because they are merely contractual, they do not innately violate the limits of an initial patent grant (see Part I). And because they only rarely cause serious harm to third parties, they are in no way instances of misconduct. They will, in fact, often be desirable on net under the § 178 approach. More plus, and less minus, make a strong affirmative case. When properly understood in a dyadic context, many licensing terms disfavored under the hostility tradition should be enforced.

C. *Public Notice and Corrective Justice*

The Federal Circuit has long identified clear notice as the paramount policy concern regarding the scope of patent claims.⁹⁹ Notice issues were at the core of that court’s concerted attack on the doctrine of equivalents between 1995 and 2001.¹⁰⁰ Though the Supreme Court rejected the Federal Circuit’s attempt to abolish equivalents, the Big Court acknowledged the legitimacy of the Federal Circuit’s attention to notice. “There can be no denying that the

⁹⁹ See, e.g., *Infinity Computer Products, Inc. v. Oki Data Americas, Inc.*, 987 F.3d 1053, 1060 (Fed. Cir. 2021) (“The public-notice function of a patent and its prosecution history requires that we hold patentees to what they declare during prosecution.”).

¹⁰⁰ See *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997) (“Petitioner, which was found to have infringed upon respondent’s patent under the doctrine of equivalents, invites us to speak the death of that doctrine. We decline that invitation... We therefore will endeavor to clarify the proper scope of the doctrine.”).

doctrine of equivalents, when applied broadly, conflicts with the definitional and public-notice functions of the statutory claiming requirement,” the Court wrote in 1977.¹⁰¹ To limit the conflict, the Court reiterated the “all elements” requirement under the doctrine: a patent claim including three elements will only be infringed by a similar three-element device, even though one of the infringer’s elements might only be the equivalent of a claimed element, rather than a literally infringing one.¹⁰² Put differently, the doctrine ought to be extended to embodiments that, though radically different from the claimed invention, happen to perform the same function as that invention. The role of the doctrine is much narrower: it exists to prevent an infringer from getting away with a near-miss copycat of the patented invention. It is, as a result, very much the exception and not the rule.¹⁰³

It’s hard to take issue with notice. Notice is good; notice is the law’s friend. Even so, patent law is not a one-policy set of rules; it is not set up to maximize third-party notice at the expense of all else. The best evidence is the eighteen-month secrecy period after a patent application is filed. Competitors have no notice that a patent is brewing. Only when the application is published, or in rare cases issued, at or around eighteen months after filing, do third parties receive notice. Their inconvenience matters less, in the eyes of the law, than the benefit to an inventor of

¹⁰¹ *Id.* at 29.

¹⁰² *Id.*

¹⁰³

We have emphasized, moreover, that the doctrine of equivalents is ‘the exception, however, not the rule,’ and not merely ‘the second prong of every infringement charge, regularly available to extend protection beyond the scope of the claims.’ *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991). Patent infringement is principally determined by examining whether the accused subject matter falls within the scope of the claims.

See Eli Lilly & Co. v. Hospira, Inc., 933 F.3d 1320, 1330 (Fed. Cir. 2019).

maintaining confidentiality until the ultimate shape of the patent comes into reasonable focus— after eighteen months post-filing, as the Patent Act sees it. Whether this is the ideal “quiet period” or not, the point here is simply that notice is suppressed in favor of other policies during this initial period. Certain other aspects of patent law are to like effect, favoring, for example, the expansion of already-granted patent claims through the device of a “broadening patent reissue,” a major deviation from general principles of notice.¹⁰⁴

In sum, notice is not the only policy that matters in patent law. The statute balances the benefits of notice against its costs in certain situations. In the next section, I argue that this spirit of balance should be carried into patent scope determinations in the context of patent contracts. There, the concerns of the dyad and the law that shapes interactions within it may also be seen at times to outweigh

¹⁰⁴ Two features of broadening reissues do make concessions to the importance of notice. First, a patent owner must file a broadening reissue within two years of the initial patent grant. 35 U.S.C. § 251. This prevents a patent owner from taking advantage of a long period of third-party reliance on the scope of a patent; issuance of a broadened patent long after its initial grant might encourage patent owners to wrongfully ensnare unknowing infringers. The manifest unfairness of post-issuance claim expansion even within the two-year limit is also counterbalanced by the court’s statutory power to provide equitable relief to competitors of the patentee able to show investments in reliance on the narrower, pre-expansion patent scope. *See* 35 U.S.C. § 251. A typical remedy in this situation is to permit a now-infringing seller of goods (i.e., one who infringes the broadened claims, but did not infringe the original claims) to earn back its reliance- based investment. Only when that investment has been recouped will such an infringer be enjoined from further infringement of the patentee’s now-expanded claim(s). *See* 35 USC § 252 (“[T]he court may also provide for the continued practice of any process patented by the reissue that is practiced, or for the practice of which substantial preparation was made, before the grant of the reissue, to the extent and under such terms as the court deems equitable for the protection of investments made or business commenced before the grant of the reissue.”).

the usually persuasive demands of maximalist third-party notice.

1. Dyadic Patent Scope for Ex-Licensee Infringement Cases

A fair number of patent infringement cases grow out of licensing deals. In some cases, a licensee who learns about a new technology from a patent owner/licensor goes on to introduce a competing product. A subset of these former licensee cases features close calls on patent infringement: the former licensee uses a design that skirts the fringes of the patent owner's claims. Though not all former licensees have behaved culpably—opportunistically terminating a license after learning a technology, then employing a design that cleverly dodges the relevant patent claims—there is more than a whiff of opportunism in some cases. My thought is that courts ought to be on the lookout for this.

When a patent owner has been wronged by a former licensee, courts can and should employ the doctrine of equivalents to expand the bounds of infringement liability. The origins of this doctrine are, after all, quasi-equitable; it was used traditionally to punish and prevent “piracy” and “stealing” to guard against outright “appropriation” of patented technology by a close competitor.¹⁰⁵ Though

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[C]ourts have also recognized that to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing. Such a limitation would leave room for—indeed encourage—the unscrupulous copyist to make unimportant and insubstantial changes and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim, and hence outside the reach of law. One who seeks to pirate an invention, like one who seeks to pirate a copyrighted book or play, may be expected to introduce minor variations to conceal and shelter the piracy. Outright and forthright duplication is a dull and

very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form. It would deprive him of the benefit of his invention.... The doctrine of equivalents evolved in response to this experience. The essence of the doctrine is that one may not practice a fraud on a patent. Originating almost a century ago..., it has been consistently applied by this Court and the lower federal courts, and continues today ready and available for utilization when the proper circumstances for its application arise. "To temper unsparing logic and prevent an infringer from stealing the benefit of the invention" [Royal Typewriter Co. v. Remington Rand, 168 F.2d 691, 692 (2d Cir. 1948) (L. Hand, J.)] a patentee may invoke this doctrine to proceed against the producer of a device "if it performs substantially the same function in substantially the same way to obtain the same result." *Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30 [1929].

Graver Tank & Mfg. Co. v. Linde Air Prod. Co., 339 U.S. 605, 607–08 (1950). Before 1870 or so, when patents lacked formal claims and their coverage was determined by assessing their gist instead of their boundaries, all patent cases used the language of equivalents to address the issue of infringement. Yet even so, courts from early days spoke of some infringing designs as attempts to evade or avoid the coverage of a patent. In a later case, he also terms this as an "evasion of the patent." See *Earle v. Sawyer*, 8 F. Cas. 254 (C.C.D. Mass. 1825) (No. 4247) (Story, J.) ("[T]he defendant had made and used a machine . . . in substance like the plaintiff's, though with some slight variations of form, so as to cover up the evasion of the patent."). On the older style and terminology used in equivalents cases, see, e.g., *Blanchard v. Reeves*, 3 F. Cas. 638, 640 (C.C.E.D. Pa. 1850) (No. 1515):

The substitution of the ratchet-wheel for the belt and screw [in plaintiff Blanchard's celebrated pattern-tracing lathe], is but a change of equivalents to suit the changed motions of the tram and cutter-wheel. Such a change in the subordinate agents or devices, affecting the motions of the model and guide only in the figure of their path, or the relative lines of their movements, in no case changes the principle, essence, substance, or character of the machine. We can not shut our eyes to the fact that the defendants have pirated the invention of the complainant in all its essential partsThe defendants have (not in this case only) exhibited singular ingenuity and skill in endeavoring to evade complainant's patent, which possibly might have been better, or at least more profitably employed.

former licensees were never singled out in the application of the doctrine, the case reports show a significant number of infringement cases where a former licensee is sued for infringement under an equivalent theory.¹⁰⁶ As mentioned, this cannot be taken as proof that all former licensees have appropriated an idea and cleverly avoided liability with a design that falls outside the linguistic bounds of the patentee's claims.¹⁰⁷ But the cases do suggest the *possibility*

In a perhaps related vein, judges seem more disposed to label close commercial rivals as evaders of their competitors' patent claims, as compared to accused infringers who were not rivals with the patent owner (e.g., were from an industry unrelated to that of the patent owner). See Daryl Lim, *Judging Equivalents*, SANTA CLARA HIGH TECH. L.J. 223, 230 (2020) (empirical study of 316 federal patent cases between 2009 and 2018: "[T]he accused infringer, who was not a rival, was significantly more likely [in the cases studied] to prevail against a patentee [i.e., to not be found to infringe under the doctrine of equivalents] than if the parties were rivals (75.0% versus 54.5%). This is consistent with the view that the doctrine's purpose is to protect the patentee from copyists, and not innovators."). Note that according to this study, even infringers who were rivals had more than an even chance to beat a patent owner's assertion of infringement by equivalents: only 45.5% of rival infringers were found liable in doctrine of equivalents cases.

¹⁰⁶ See, e.g., *Neev v. Alcon LenSx, Inc.*, No. SACV1500624JVSJCGX, 2017 WL 6886670, at *7 (C.D. Cal. June 30, 2017), *aff'd sub nom. Neev v. Alcon Lensx Inc.*, 774 F. App'x 680 (Fed. Cir. 2019) (permitting plaintiff and co-plaintiff Lawrence Livermore Lab to argue infringement under doctrine of equivalents against former licensee/defendant; rejecting defendant's argument that plaintiff had waived its equivalents theory in written pleadings); *Virkler v. Herbert Enterprises, Inc.*, 403 F. Supp. 2d 1141 (M.D. Fla. 2005) (former licensee made minor alteration in patent owner's product and tried to compete with her; held, former licensee's device infringed patent under doctrine of equivalents).

¹⁰⁷ Especially devious (or perhaps just lucky) former licensees will introduce products that compete with those of a former patent owner/licensor, but that infringe only claims that the patent owner

that opportunistic ex-licensees learn not just the patent owner's invention but also perhaps some effective ways to avoid literally infringing the patent's claims. When true, this is the sort of issue that is captured by my notion of "interparty fairness." And it is precisely the sort of issue that private law doctrine has been dealing with since it first emerged.

a. **Equivalents and Prosecution History Estoppel in Ex-Patent-Licensee Cases: Say Hello to the "Virkler Doctrine"**

My proposal is simple: *if* the facts show evidence of ex-licensee culpability, courts should turn to the equitable spirit behind the doctrine of equivalents when determining infringement liability. They should consider the special access the licensee had when assessing infringement. This should not be the only relevant factor, of course. Liability might well not follow when former licensees develop new technology that falls well clear of any claims in the formerly licensed patents. But in a close case, the privileged access given to a former licensee, if coupled with evidence that the access was abused, should count toward liability.

One wrinkle in my proposal concerns a counter-doctrine that limits the application of the doctrine of equivalents. Under conventional estoppel principles, a patentee who narrowed his or her patent claims during patent prosecution is foreclosed from later trying to reclaim the surrendered claim scope by invoking the doctrine of equivalents. This is one of many doctrines aimed at giving third parties— who might rely on patent prosecution history to discern the boundaries of a claim— clear notice regarding

amended at some point in patent prosecution. Under rules explained just below in the text, amending a claim usually means surrendering rights over any equivalents to that claim.

patent scope.¹⁰⁸ But the Supreme Court has cautioned that not all amendments to patent claims give rise to estoppel; sometimes, an amendment does not foreclose a later assertion of infringement by equivalents. In an important 2002 case, the Court said that claims narrowed down during prosecution might still be supplemented by the doctrine of equivalents.¹⁰⁹ This is so when a claim that was amended is later sought to be expanded to cover equivalents that were not in existence and not foreseen at the time of the amendment. It is also so when a claim was amended for reasons unrelated to the later assertion of infringement under the doctrine of equivalents— a so-called “tangential” amendment.¹¹⁰

¹⁰⁸ On the tradeoff navigated in doctrine of equivalents cases, between third party notice and interparty fairness, see Donald S. Chisum, *The Scope of Protection for Patents After the Supreme Court's Warner-Jenkinson Decision: The Fair Protection-Certainty Conundrum*, 14 SANTA CLARA COMPUTER & HIGH TECH. L.J. 1, 6 (1998) (summarizing the issues, in an article written after the Supreme Court doctrine of equivalents case of Warner Jenkinson Co., Inc. v. Hilton Davis Chemical Co., 520 U.S. 17 (1997)).

¹⁰⁹ There are some cases, however, where the [claim] amendment cannot reasonably be viewed as surrendering a particular equivalent. The equivalent may have been unforeseeable at the time of the [patent] application; the rationale underlying the amendment may bear no more than a tangential relation to the equivalent in question; or there may be some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question. In those cases the patentee can overcome the presumption that prosecution history estoppel bars a finding of equivalence.

Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 740–41 (2002).

¹¹⁰

Bio-Rad argues that the tangentiality exception to prosecution history estoppel allows it to assert and prevail under the doctrine of equivalents. In Bio-Rad's view, the reason for narrowing the claims

In addition, the Supreme Court in *Festo* included a third exception to the application of prosecution history estoppel. Courts so far have not found any application for this open-ended (“some other reason,” in the Court’s words) third exception. But in my view, it is a natural fit for ex-licensee cases. The doctrine of equivalents ought not to be automatically limited by prosecution history estoppel when an ex-licensee opportunistically seizes on a claim amendment to prevent the licensee’s minor alteration of a patented design from being found an equivalent. Though in explicit form, this would be a novel addition to current doctrine, it might simply grant formal recognition to a practice that, judging from the case law, seems to be fairly common. Some courts have been wary about applying formalistic defenses such as prosecution history estoppel to foreclose infringement liability on the part of a former licensee. Judges seem aware of the potential that former licensees will profit from special access to patented technology. Courts have tried to maintain the right of a patent owner to expand his or her claims equitably in the face of an opportunistic ex-licensee. Because an ex-licensee may disguise misappropriation behind technical arguments of non-infringement, courts must be on the lookout. In the

was “peripheral, or not directly relevant to the alleged equivalent.”... ([Q]uoting *Festo II*, [on remand from Supreme Court, *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 344 F.3d 1359, 1369 (Fed. Cir. 2003)]. Bio-Rad contends that the patentees amended the claims to make clear that the carrier fluid and the microchannel wall should be chemically distinct, which bears no more than a tangential relation to the alleged equivalent—microchannel walls containing a nominal amount of fluorine that is not chemically distinct from the carrier fluid. We agree with Bio-Rad. The prosecution history of the ‘083 patent establishes that the objectively apparent reason for adding the “non-fluorinated microchannels” limitation was no more than tangentially related to the equivalent at issue.

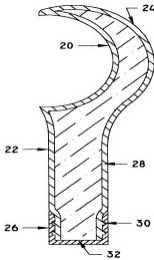
See, e.g., Bio-Rad Laboratories, Inc. v. 10X Genomics Inc., 967 F.3d 1353, 1365 (Fed. Cir. 2020).

special context of patent infringement liability for ex-licensees, inter-party fairness demands nothing less.

An illustrative case – so typical it might supply the name for a “be on the lookout for misappropriation and sharp dealing by former licensees” doctrine¹¹¹ – centers around the modest invention of a Florida resident named Ms. Helen Virkler.¹¹² Ms. Virkler conceived not of a better mousetrap but of a better ice cream scoop. Hers was designed with a wide, hollow handle that can be filled with tap water from the kitchen sink. Even lukewarm water will keep the scoop warmer than the ice cream to be served, making it scoop more easily and avoiding a frustrating struggle with ice cream sticking to the scoop. Ms. Virkler found a business partner in the Cleveland area named William J. Herbert, who agreed to help her produce and market her scoop in exchange for the modest compensation of a 1% royalty on sales.¹¹³ Before very long, Mr. Herbert had developed a slight variation on the patented Virkler design – one that (quite intentionally) avoided one limitation written into the

¹¹¹ The “*Virkler* doctrine.” Has a nice ring to it.

¹¹² See Virkler, 403 F. Supp. 2d at 1143. Ms. Virkler’s invention, from her U.S. Patent 5,837,296, sink tap opening at 32:



U.S. Patent No. 5,837,296 (filed Dec. 11, 1996) (issued Nov. 19, 1998).

¹¹³ The licensing agreement favored Herbert and his corporate alter ego, Herbert Enterprises, Inc., in other ways as well. Minimum royalties were fairly modest: \$1000, \$5000, and \$10,000 in the first three years of the ten-year license agreement. See License Agreement Between Lois M. Virkler and Herbert Enterprises at 1, § 3, Virkler, 403 F. Supp. 2d at 1145, No. 6:04CV01652 (Sept. 20, 2005). The Agreement was also to be interpreted under Ohio law, the law of the licensee’s forum. And so on.

plaintiff's sole patent claim.¹¹⁴ Virkler's claim called for an opening in the ice cream scoop handle that was between four and eight inches in circumference to allow the scoop to be filled with water from an average-sized water tap. Herbert's design had a smaller opening, less than four inches in circumference, but still wide enough to be filled from a household water tap. Because of statements Ms. Virkler made to the Patent Office during the prosecution of her patent application (which she handled without a patent lawyer), Herbert said that a court must bar application of the doctrine of equivalents— so Herbert's design would not infringe the sole claim in the Virkler patent. The court was having none of it, however. In a passage that applies patent doctrine in service of the noble cause of preventing misappropriation, the court said Ms. Virkler's prosecution argument had not surrendered coverage of hollow-handled ice cream scoops with circumferences slightly under four

¹¹⁴ Herbert's letter to Virkler on the subject of his modified scoop, and why its sales did not fall under the royalty obligations of the License Agreement, artfully combines legal avoidance with an unctuous, yet self-centered tone. In explaining why Herbert was selling scoops that were not marked with Virkler's patent number (which notice is required if Virkler wanted to seek patent damages), Herbert wrote:

My patent attorney advised that I could not use your patent number on my product (believe me I surely wanted to). Since my product water opening is less in diameter than your claim, then he thought it would be illegal for me to use your patent number . . . I will send you [one of my] scoop[s], video-tape demo, and a commercial update after the holidays. I'm up to my ears in getting scoops made. The first customer (Williams Sonoma) that we approached loved the scoop and ordered 15,000 of them for a March delivery. They are going to feature it as "tool of the month[“] in their catalogue.[]

In other words: thanks for the great idea, I'm doing great with it, sorry about those royalties you were promised. In light of this, it is poignant to read of Ms. Virkler's appeal to Mr. Herbert's "integrity" at an early stage of the dispute: "Ms. Virkler wrote to Mr. Herbert to express her hope that he would send her the \$5000 minimum royalty payment and that he would 'do what [his] integrity tells [him] is right.'" Virkler, 403 F. Supp. 2d at 1146.

inches.¹¹⁵ So Herbert, the former licensee, lost the case and was enjoined from selling his infringing ice cream scoop.

There are other cases, however, where courts perhaps should have, but did not, inquire into whether “the *Virkler* doctrine” might apply. One involved an improved wind-resistant umbrella, which included a sturdy umbrella shaft and a strong locking latch for keeping the umbrella in the raised position under wind stress.¹¹⁶ Windbrella, maker of the umbrella and patent owner on its design, agreed to manufacture umbrellas for sale by Taylor Made Golf

¹¹⁵ The court said:

Applying an objective test, a competitor skilled in the art would see that Ms. Virkler’s emphasis on the dimensions was for the purpose of explaining that the handle needed to fit over a kitchen faucet. In other words, the dimensions are important not because of what the specific dimensions are but because of the purpose that the dimensions serve— fitting over a faucet. Ms. Virkler made clear that the reason she had described her patent with those dimensions was so that a faucet would fit into the handle. She also included a provision in her application, which was included verbatim in the text of [her] Patent itself, which states in part that “[a] skilled artisan will be able to produce the intended invention with the most efficient dimensions of any of the embodiments contained within this description Accordingly, the reader is requested to determine the scope of the invention by the appended claims and their legal equivalents, and not by the examples which may have been given.”... This statement would not lead a competitor to reasonably believe that Ms. Virkler had clearly and unmistakably surrendered handles with circumferences of less than four inches that fit over a faucet.... Thus, Ms. Virkler is not barred by prosecution history estoppel from arguing that the Herbert scoop infringes [her] Patent under the doctrine of equivalents.

Id. at 1149. It should be noted that the language in the Virkler patent stating that working examples ought not limit her claim scope is absolutely standard; boilerplate like this is often given little weight. Here, though, the court chose to take it seriously, and to good effect.

¹¹⁶ Windbrella Prod. v. Taylor Made Golf Co., 414 F. Supp. 2d 305, 319 (S.D.N.Y. 2006), opinion supplemented on reconsideration sub nom. Windbrella Prod. Corp. v. Taylor Made Golf Co., No. 05 CIV. 5626 (SAS), 2006 WL 931698 (S.D.N.Y. Apr. 10, 2006).

Company under its famous Adidas brand. When Taylor Made entered the market with a competing umbrella, Windbrella sued its former licensee for patent infringement. Taylor Made defended on grounds of non-infringement. Windbrella's design, as reflected in its patent claims, includes a conventional moving handle that slides up and down the tubular umbrella shaft. On the handle is a button, which activates a "ring shaped latch" inside the tubular umbrella shaft. When the button is pushed, the latch moves inside the tubular shaft to displace the spring-loaded pins that project inwardly from the handle into the shaft and that keep the handle in place in the open umbrella position. The push-button latch releases the handle, in other words, and allows it to slide down the shaft to close the umbrella. Taylor Made, the former Windbrella licensee, included a latch that is slightly less than a "ring," but its U-shaped latch did the same thing as the Windbrella latch. Though the court left open the possibility that the Taylor Made design might be found to literally infringe the claim—since Taylor Made's U-shaped latch compresses into something very close to a ring when activated—it held as a matter of law that Windbrella's claim amendment precluded application of the doctrine of equivalents. The court in *Windbrella* took pains to point out that any other holding with respect to equivalents would undermine the "public notice" function of patent claims.¹¹⁷ But in so doing, it echoed a common refrain in IP cases: courts are more concerned with protecting the public against

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The public notice function also counsels against allowing Windbrella to assert the doctrine of equivalents... The Federal Circuit has stressed the importance of the public notice function of a patent and its prosecution history. This function would not be well-served by the acceptance of unsupported post-hoc interpretations used to reduce the impact of narrowing [claim] amendments and the doctrine of prosecution history estoppel.

Windbrella, 414 F. Supp. 2d 305 at 319 (footnote omitted).

even slightly ambiguous IP rights than they are with protecting an IP licensor from an opportunistic licensee.

Ex-licensee infringement cases present opportunities for courts to sniff around for signs of misappropriation, with the *Virkler* doctrine available as one tool to address any wrong done to a patent owner.¹¹⁸ In one case, for example, a patented concrete block design, which allowed various shaped blocks to be stacked into retaining walls, found new competition at the hands of an ex-licensee.¹¹⁹ The two interlock mechanisms differed slightly: the patentee used a ridge on the block top and a notch on the bottom, while the ex-licensee used wedge-shaped projections on the top and matching slots on the bottom. True, this is a nontrivial difference. Yet the court, in finding non-infringement under

¹¹⁸ To repeat: my argument here is that in a close infringement case, ex-licensee status should prompt the court to look carefully for signs of misappropriation. This does not mean that every ex-licensee should be found liable for patent infringement, literally or by equivalents; nor that courts should ignore prosecution history estoppel in every former licensee case where infringement by equivalents is asserted. In *SFP Works, L.L.C. v. Buffalo Armory L.L.C.*, for example, the patent owner/licensor alleged infringement by an ex-licensee of a patent on rapid superheating of steel during manufacture. 221 F. Supp. 3d 923, 929 (E.D. Mich. 2016). In response to an examiner rejection during prosecution, the patent owner had amended its claim by including a specific time limitation in one superheating phase: the heating was to occur, after amendment, “within 5 seconds.” Though the ex-licensee began using a process identical to the patentee’s— except the superheating phase took place in 5.6 seconds. Unfortunately for the patent owner, no amount of equitable sympathy (even if warranted) could overcome the similarity between these facts and a recent Supreme Court decision applying prosecution history estoppel in a case involving a claim amendment that included a numerical range. *See Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 32 (1997) (accused infringer operated process at pH of 5.0; no equivalents argument permitted where “the phrase ‘at a pH from approximately 6.0 to 9.0’ was added to the claim” by amendment).

¹¹⁹ *Allan Block Corp. v. E. Dillon & Co.*, 509 F. Supp. 2d 795 (D. Minn. 2007), *aff’d*, 287 F. App’x 109 (Fed. Cir. 2008).

the doctrine of equivalents, never stopped to at least consider whether the close relationship of the parties was in part responsible for the ex-licensee's entry into the field with a generally similar design. Other courts sometimes show more solicitude for IP owner/licensors,¹²⁰ yet, even so, the law of infringement lacks systematic attention to potential contractual abuses. What I have called the *Virkler* doctrine is simply an attempt to remedy that.

b. Meta-Notice: Policing Opportunism
Ex Post

It might seem the height of fairness to stress, as the Federal Circuit does, the desirability of clear third-party notice, particularly with respect to the scope of patent claims.¹²¹ But cases such as *Virkler* suggest that there is

¹²⁰ See *Nautilus, Inc. v. ICON Health & Fitness, Inc.*, 304 F. Supp. 3d 552, 567 (W.D. Tex. 2018), amended, No. SA-16-CV-00080-RCL, 2018 WL 2107729 (W.D. Tex. May 7, 2018), and *aff'd*, 754 F. App'x 292 (5th Cir. 2019) (finding breach of contract by licensee who stopped paying royalties to the patent owner after the owner's U.S. patent expired; enforcing contract provision that required royalty payment so long as licensee manufactured products that infringed any of the patent owner's international patents, including its not-yet-expired Chinese patent); *Simmons v. Cook*, 701 F. Supp. 2d 965, 987 (S.D. Ohio 2010) (ex-licensee/defendant developed exercise equipment to compete with patent owner/licensor; design changes in defendant's machine brought it outside the literal scope of the licensor's claims, and the doctrine of equivalents was unavailable for those claims due to amendments during prosecution; but court found that plaintiff might have a trademark infringement cause of action for invoking plaintiff patent owner's trademarked brand in promoting its competing equipment).

¹²¹ For an excellent account of the importance of notice, and the costs of notice "failure", see Peter S. Menell & Michael J. Meurer, *Notice Failure and Notice Externalities*, 5 J. LEGAL ANALYSIS 1 (2013). For practical ideas on how to improve notice in the patent system, see John R. Thomas, *Noticing Patents*, 24 COLUM. SCI. & TECH. L. REV. 299, 346-47 (2023) ("Automated notice could be sent out [by the USPTO] whenever an examiner cites a particular patent or other prior art, for example, or

more to the operation of corrective justice than providing clear notice. The ex-licensee infringement cases I talked about earlier involve dyadic partners taking advantage of objective claim boundaries. These infringers use their knowledge of the field, learned in many cases from the patent owner, to design around the patent owner's claims. In these cases, the notice function of patent claims becomes a convenient cover. Claim language provides a safe harbor for the ex-licensee's re-design, no matter how intensively that re-design was informed by knowledge of the patent owner's technology, i.e., knowledge shared within the contractual dyad. These are what might be described as cases of *notice abuse*. As equity exists to police such abuses, it is apparent that patent cases involving notice abuse invite the application of the equitable doctrine of equivalents (DOE).

Before diving into the DOE, let me note the rap against it. The DOE, many say, is shaky, flaky, and unpredictable. It is shaky because it is at odds with the historical trend toward tighter precision of patent claims. It is flaky because it is rooted in an era when inventors routinely claimed "whatever in this three page specification might be a patentable invention"—a far cry from the contemporary "metes and bounds" orientation of the American "peripheral claiming" practice. And unpredictable because—well, just look at the name. "Equivalents." What is equivalent to what, and according to whom, seems like a classically open-ended inquiry. And, for the coup de grace, the DOE is described as "equitable," a label sure to inspire an image of subjective justice, as in the famous "Chancellor's foote" trope.

Despite some admitted variability—endemic to the type of law it is—equity, in fact, follows broadly predictable

whenever a published application or issued patent contains an identified key word. This step would allow patent owners and technology implementers to track the patent landscape on a real-time basis." (citation omitted)).

contours. It's just that these contours operate more at the ex-post stage, after a transaction. In particular, equity is meant to intercede regularly whenever one party takes undue and unfair advantage of the other so as to seriously harm the other's interests.¹²² Equity polices opportunism, in other words. The open-ended nature of opportunism necessitates an open-ended body of law to deal with its many faces.¹²³ When opportunism takes the form I have described, notice abuse, equity serves the ends of corrective justice by

¹²² The flexibility to reach the many forms of opportunism that arise gives equity substantive focus that transcends specific formal requirements. This is true even of the concept of notice in equity, which often plays a role in determining issues such as good faith and innocent receipt.

[A]ny attempt to invest the equitable conception of notice with artificiality or technicality is contrary to the fundamental spirit of equity, which looks at the substance rather than the form, and which, in the accomplishment of its ultimate purpose to do justice, brushes aside all matters of form or technicality except when controlled by statutory requirements.

See Joseph R. Long, *Notice in Equity*, 34 HARV. L. REV. 137, 139 (1920).

¹²³ Henry Smith stated:

To prevent opportunism, the law could attempt to anticipate every type of evasion ex ante. But announcing a clear list of ex ante rules enables evaders to exploit their knowledge of where the bright line is. Plugging nine out of ten holes is sometimes no better than plugging none... [E]quity as meta-law enables a more targeted and ex post intervention against opportunism that leaves less room for sophisticated actors to take advantage of the rules or the legal system overall. Even ex post, the law need not define opportunism directly. As we will see, it employs proxies and presumptions that are aimed at opportunism. The idea is to impose enough of a cost ex post on a somewhat hard-to-predict set of actors who are highly likely to be engaged in opportunism – and to send them a message. If successful, such a system can obtain more benefit in preventing rent seeking and the chilling effect of opportunists on other people's behavior than it imposes costs in chilling legitimate behavior and destabilizing expectations.

See Henry E. Smith, *Equity As Meta-Law*, 130 YALE L.J. 1050, 1080–81 (2021).

correcting the abuse. The *Virkler* doctrine, in short. The DOE is applied so as to prevent an ex-licensee from skirting the edge of a formal patent claim while misappropriating the essence of the patent owner's licensed technology.

Insofar as the DOE may generate some uncertainty about the edge line of a patent claim, it can be said to undermine slightly the notice function of patent claims. As mentioned, the additional uncertainty may be well worth the cost if the beneficial power to address opportunism prevents many instances of its occurrence. To the extent this is true, equity might serve as a kind of meta-notice. Take undue advantage of your contract partner, equity seems to say, and you will be called to account. You won't get away with clever, opportunistic schemes, even ones obscured by strict adherence to the dictates of formal notice. The would-be opportunist is on notice, generally speaking, that its actions will be scrutinized for their motive and impact. No specific act is prohibited in advance, but there is broad notice that whatever acts are detected in support of opportunism they will be observed, and they will draw condemnation. This is not notice in the sense of the Federal Circuit's policy toward claim interpretation. But it is "meta-notice," and it too has its uses.

V. CONCLUSION

A. *Learning to Love Licensing Transactions*

One way to summarize what I have to say is this: the law of patent contracting should begin with an understanding of the transactional role of patents. It should see patent issues the way parties to patent contracts see them. This more "dyadic" understanding of patent law supports various proposals made in recent years to fix discrete problems in the law of patent contracting. More importantly, it assimilates these proposals into a more coherent and

comprehensive understanding of what the law of patent contracts is all about. This, in turn, points the way to other reforms, not to mention other research questions.

The tradition of hostility toward IP licensing in the Supreme Court dates from the 1940s to the 1960s. The thinking behind this concerted attack on license contracts was never all that convincing. Still, as explained, this area was swept along with the general (and generally beneficial) wave of federalization that characterized the era. Whatever the thinking was— primarily a concern with contractual “extensions” of federal IP grants— it has little relevance now. Today, patent contracts are central to a number of highly innovative industry sectors. The ability to transfer highly complex technical knowledge through patent licensing agreements enables specialization: small research-oriented firms can transfer complex inputs while operating free of immediate control by large companies. These specialist firms contribute to diverse industry structures in which large firms mix with medium-sized and small ones. This variegated structure enables ongoing competition from multiple, rivalrous sources of innovation— historically, a good bet to generate productive innovations.

***B. Good Contracts Make Good Neighbors:
Dyads and Social Welfare***

Finally, a last word about corrective justice in the domain of IP rights: As I mentioned earlier in this paper, the IP field has been centered on maximizing social welfare for a great many years. Which, as I also said, makes sense: the emergence of IP involves a fascinating transformation from a series of individual tort-like duties to a generalized property right. At the point of transformation, when all bilateral duties are bundled together into an omnidirectional property right, public institutions such as courts become available to bring the power of the state to bear on violators

of the property right. The state confers a public right (“good against the world”) in pursuit of public policies (e.g., social welfare maximization).

To insist now on a movement back from the societal level to the dyadic level might appear to represent a reversal of the initial logic behind IP as property. But I do not see it that way. For me, it is more like the closing of a circle. IP rights are public rights granted by the state. One function they play in their owner’s hands is to help structure various private orderings. The very force of their public-backed nature makes them powerful tools in this regard. When IP rights are pulled into a dyadic setting, they should be understood in their dyadic role as much as possible. Once past the very public moment of patent validity, a patent may have a dyadic existence separate from its purely public one. Parties can agree to treat the patent as valid between themselves or for a term beyond the statutory measure. The exchange function of the patent makes it worthwhile for society to enforce this dyadic form of validity.

Likewise, because a patent can play such an important role in anchoring economic exchange (particularly when it involves complex technical information), the law has need for a more dyadic understanding of the patent scope. Parties should be able to agree that a licensee must pay royalties for the “input value” of a patented invention, even when the licensee’s end product does not infringe the patent owner’s claim scope. Also, when appropriate, the equitable Doctrine of Equivalents ought to be applied liberally when a court becomes convinced that an ex-licensee has appropriated the essence of a licensed technology. Even the infringement doctrine can and should be deployed to combat contractual opportunism, which is a central concern of equity and an important aspect of dyadic justice.

Even though the private law dyad is a distinct entity, there is nevertheless societal good in the advancement of effective private law interactions. Private law purists might

chafe at the idea of a socially optimal body of private law. Still, at least in a loose sense, there are many benefits to carving out various spheres where party autonomy and private planning are paramount. To the extent that the fruits of inventive research are maximized when shared within dyadic arrangements, contract relations may be a necessary feature of an effective innovation system. If private ordering based on publicly backed property rights is an effective way to both reward and divide up innovative effort, then perhaps IP law can only be fully appreciated when the dyadic element is added to the conversation. That is, at any rate, what I have been trying to do in these few (ha!) pages.