

IP Law and the New Experimental Empiricism

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Christoph Engel & Michael Kurschilgen, *Fairness Ex Ante and Ex Post: An Experimental Test of the German "Bestseller Paragraph,"* available at [SSRN](#).

It is often said that in the late 20th century, the legal academy took an "empirical" turn with the rise of law and economics. But the word "empirical" is not quite right as a characterization of the direction in which law and economics has nudged the legal academic literature.

Much of law and economics, especially in its early years, involved the application of (often very basic) economic theory to an expanding list of legal issues. The aim was to use an abstract form of economics to reform legal doctrine. That work was more theoretical than empirical, but that isn't meant as a criticism – many areas of legal doctrine were so badly theorized that even basic economic interventions yielded up valuable insights.

In the last 20 years we have seen a second stage of the law and economics movement, one that has featured the use of continually more sophisticated economic modeling as a way of analyzing legal questions. Some of this work is a direct outgrowth of the first wave of law and economics – i.e., some second-stage work involves the application of more sophisticated (or at least more complex) economic models to abstract legal problems. Another branch of this work, however, is more truly empirical, in that it directs its analysis not primarily to a stylized legal problem, but to data. This form of work suffers from one endemic limitation – the tendency of researchers to pick questions for which data exists or readily can be gathered. Again, this is not meant as a criticism; it is merely a limitation of this branch of otherwise very valuable legal scholarship.

There is a third type of law and economics work that is largely missing from the law reviews and, until relatively lately, from the legal academy generally. And that is a very old form of empiricism – the experiment. What can the experiment offer that the theoretical and data-driven variants of law and economics cannot? With respect to theoretical work, experiments are a necessary complement and check. A theory can be elegant, brilliant, and align with common sense – and it can nonetheless be wrong. Theoretical work is well suited to constructing hypotheses about how the world works. Experimental work is well suited to either confirming or exploding those hypotheses.

With respect to data-driven work, experiments are again necessary, not least as a stopgap when the search for data proves fruitless. Experiments allow us to gain knowledge about questions for which there is little ready data, and experiments also generate data that can be adapted to help answer different questions.

The experimental vein of law and economics is relatively impoverished. One can see this readily in my own primary field, intellectual property. IP scholars are receptive in general to law and economics thinking – not least because the orthodox justifications in the United States for patent, copyright, and trademark law are all explicitly utilitarian. But much of the law and economics work in IP comes from the early Chicagoan vein – i.e., it involves the application of rational choice theory, at a high level of abstraction, to analyze IP rules. This scholarship has been very useful. It has helped to organize a previously messy field. It has helped us to understand where IP rules conduce to economic efficiency,

and where they do not. But it's long past time that we put some of these economic models to the test.

Some in the IP field are beginning that task. Gregory Mandel has conducted experiments to assess the impact on hindsight bias on several aspects of patent law, including claim construction, enablement, and, perhaps most importantly, the assessment of non-obviousness. [See Gregory N. Mandel, *Patently Non-Obvious: Empirical Demonstration that the Hindsight Bias Renders Patent Decisions Irrational*, 67 OHIO ST. L.J. 1391 (2006), available at SSRN.] Christopher Buccafusco and I have conducted experiments to determine whether IP rights-holders are subject to endowment effects in their licensing transactions. [See Christopher Buccafusco & Christopher Sprigman, *Valuing Intellectual Property: An Experiment*, 96 Cornell L. Rev. 1 (2010), available at [SSRN](#); Christopher Buccafusco & Christopher Sprigman, *The Creativity Effect*, forthcoming, Univ. of Chicago L. Rev., available at [SSRN](#)]. And Stefan Bechtold of ETH Zurich and a team from the Max Planck Institute have explored how endowment effects impact market transactions driven by group decision-making. [See Stefan Bechtold, et al, *The Endowment Effect in Groups With and Without Strategic Incentives*, available at [SSRN](#)].

We now have a new and very interesting IP experiment, conducted by Christoph Engel and Michael Kurschilgen of the Max Planck Institute. Engel and Kurschilgen are interested in an unusual provision of the German copyright law, the so-called "bestseller paragraph," under which the transferor (whether by license or sale) of a creative work has a legally enforceable right to an "appropriate" bonus in the event that the work turns out to be very valuable. Here's the language of the provision, translated from German:

If the owner of a copyright has granted a license such that the fee, in the light of the entire relationship between the parties, is grossly disproportionate with regard to the proceeds from the work, the buyer is obliged to agree, upon the author's request, to a change in the contract such that the seller receives an additional remuneration, reflecting what is her appropriate share under the given circumstances.

What is the effect of this provision on the behavior of parties to copyright transactions? Economic theory suggests that because buyers can expect to make lower profits when the law contains the bonus provision, versus a law without one, that they should offer less in the initial transaction. And, relatedly, sellers should be willing to accept less, because they know that in the event that a work proves very valuable, they can anticipate some additional payment ex post the deal. But that's where economic theory runs out. It suggests that deal prices will be lower, but it does not tell us whether the buyer's maximum bid and the seller's minimum ask will diverge or converge. And this piece of information is, of course, key, because if bid and ask prices *diverge* there will be fewer transactions and lower gains from trade, compared to a legal regime without the bonus provision. On the other hand, if buyer and seller valuations *converge*, then we'll enjoy a more efficient market, with more deals generating more social surplus. So which is it?

Not unexpectedly, no one has yet sought an answer. That's probably because the German copyright law's bonus provision is usually justified not in terms of economic efficiency, but "fairness" – i.e., that justice demands that author/transferors should have a right to additional compensation if the work they have transferred turns out to have unanticipated value. That has always seemed to me an odd view of justice, and one which does not fit with our (or the Germans') views on the "fairness" of transactions generally. If I sell my house and two years later the city decides to build a lovely public park, in my neighborhood, then the value of my former house may rise substantially but no one contends that I'm due a bonus payment from the lucky buyer. The deal is the deal.

So why the German exception for authors? It is sometimes said that the ultimate market value of creative works is particularly difficult to predict, and so fairness requires some form of ex post adjustment to authors' compensation when a deal proves particularly rich. The same justification is

often advanced for an analogous provision in U.S. copyright law that permits authors have licensed their rights to terminate that license after 35 years and re-capture those rights. But that explanation cannot suffice standing alone, because it is equally an argument for ex post adjustment in favor of *buyers* when deals prove (as they often do) to be valueless, and yet we never see provisions that are not one-sided in favor of sellers.

A much more important justification observes that sellers often face much more competition than buyers – there are, or at least have been traditionally, many more creators than there are publishers – and so publishers enjoy a degree of oligopsony power that forces prices down below a competitive level. This is a better justification than the first, but it's still quite weak. If the effect of provisions like the German bestseller clause and the American termination of transfers clause is to force deal prices down – which almost surely happens by some small increment – then the effect of the provisions is to beggar all authors for the purpose of enriching a few fortunate enough to have produced works of enduring value. These successful authors are least likely to be the ones in need of aid. In short, the “fairness” justification for these provisions is less than overwhelming – at least as a matter of abstract economic theorizing.

But abstract theorizing sometimes fails to uncover the truth. Which leads us back to Engel and Kurschilgen, who have designed a clever experiment to test whether the German bonus provision can be justified on either efficiency or fairness grounds. They designed two experimental conditions, which they tested with subjects recruited from the University of Bonn. The first was a baseline condition wherein subjects were randomly assigned to act either as a buyer or a seller. The subjects were each given an initial endowment of 500 “Talers,” or notional monetary units. The subjects were told that they would be transacting over an unnamed commodity. The commodity did not have a certain value, but merely a probabilistic one – there was a 25% chance that it was worth 1700 Talers, but a 75% chance that it was worth only 100 Talers. With this information in hand, the subjects participated in 8 rounds of a four-stage game.

In the first stage of the experiment, buyers were given the opportunity to make an offer to purchase the commodity, based only on their knowledge of the probabilities attending the commodity's value. In the second stage, the seller is given the choice of accepting or rejecting the buyer's offer. If the seller rejects, then both buyer and seller keep their initial 500 Talers. If the seller accepts, then the buyer's offer price is transferred to the seller. In the third stage, a random device determines the value of the commodity – either 100 Talers (75%) or 1700 Talers (25%). The fourth stage is where the experiment gets interesting – in this final stage, each of the parties learn the value of the commodity, and *each is given a chance to reduce the other party's earnings*.

Why is this? Because the experimenters wanted to build into the experiment a way for the parties to indicate that they perceived the results of the transaction as “unfair.” Punishment in the experiment is costly – it costs a party 3 Talers for each 1 Taler by which they wish to reduce their counterparty's earnings. But by giving the parties the power to engage in costly punishment, the experimenters hoped to discover whether the presence of some mechanism – analogous to the German bestseller provision – whereby “unfair” deals can be adjusted ex-post, reduced the rate at which the parties engaged in costly punishment, and thus – by implication – reduced the amount of ex post perceived unfairness.

The second experimental condition built in that ex post adjustment procedure. The experimenters did so by introducing a third player – the “umpire.” The umpire was paid a fixed fee to judge the fairness of transactions, and to adjust unfair transactions ex post. If the value of the commodity in a particular transaction is judged to be 1700 Taler, such that a buyer who paid much less stands to realize a substantial windfall, the possibility of punishment is delayed. First, the umpire makes a secret re-allocation of the value of the commodity between buyer and seller. Then, the buyer is encouraged to

make a new offer, which the seller can either accept or reject. If the second offer is rejected, the umpire's allocation is revealed, and that allocation becomes effective. The parties are then given the opportunity to engage in the same costly punishment as in the first condition.

So, the results. As economic theory predicts, the price at which deals are struck declines by a statistically significant amount in the second condition (104 Talers) versus the baseline (129 Talers) – that is, the presence of a proxy for the German bestseller provision leads to substantially lower deal prices. The number of deals stayed about the same – 98 of 128 rounds resulted in deals in the baseline condition, versus 106 of 128 in the second, or “treatment,” condition. Importantly, bid and ask prices *converged* in the treatment condition (seller's ask price declined more than buyers' bids), suggesting that the presence of the ex post “fairness” mechanism generated a more efficient market by making low offer prices more acceptable to sellers. This is an important finding that economic theory alone could not have generated.

The experiment tells us not only about buyers and sellers, but about umpires – i.e., judges. A large portion of the umpires, who had the same information as the buyers and sellers, appear to have been motivated primarily by ex-post egalitarianism – i.e., they split the profits more or less evenly between buyers and sellers. Surprisingly, they did this even though from an ex ante perspective such a result clearly favors sellers (because only buyers, ex ante, faced the prospect of a real loss).

Finally, the experiment shows that ex post discontent is reduced when a mechanism exists to remedy “unfair” transactions. Angry buyers used punishment more frequently in the baseline condition (21% of the time) vs. in the treatment condition (12%), and they spent more on punishment (10 Taler per round vs. 7 in the treatment condition). Sellers made very little use of punishment in either condition. So the result of the treatment was to reduce buyers' ex post perceptions of unfairness, while not affecting sellers, who did not perceive unfairness in the first place. This is deeply counterintuitive. It is the *sellers* who are presumed, in the fairness justification for the German bestseller provision and the analogous American termination provisions, to be the victims of unfairness when transactions prove to be much richer than initially anticipated. But in this experiment, it's the buyers, not the sellers, who manifest significant feelings of unfairness, and these feelings are reduced by ex post mechanisms *designed to transfer value to sellers when deals prove particularly rich*.

Why? Because anticipating all of this, buyers in the treatment condition lowered their offers. Because they had accounted for the possibility of value transfer in advance, they discounted what they were willing to pay ex ante. And this, in the buyers' perspective, was fair.

These are fascinating findings. It is important to emphasize, however, that this one experiment is not a basis for changing policy. The experiment is too stylized, and the data too limited. But that is not to slight what's been accomplished here. We have now a very valuable and surprising set of findings, accomplished via a methodologically careful and replicable study. It's time for others to jump in. This study should be run again, and run in variations – perhaps an American academic would like to run a version which more closely models the termination provision of U.S. copyright law? And in a few years, we might have results that can begin to shape a more sensible and scientific copyright policy.

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