Intellectual Property & Technology Law Journal

Edited by the Technology and Proprietary Rights Group of Weil, Gotshal & Manges LLP

VOLUME 29 • NUMBER 10 • OCTOBER 2017

Wolters Kluwer

Intellectual Property & Technology Law Journal

Intellectual Property & Technology Law Journal (ISSN 1041-3952) (USPS P0000-041) is published monthly by Wolters Kluwer, 76 Ninth Avenue, New York, NY 10011, (212) 771-0600. A one year subscription (12 issues) costs $1,095. For customer service, call 800-234-1660. Purchasing reprints: For customized article reprints, please contact *Wright's Media* at 1-877-652-5295 or go to the *Wright's Media* website at *www.wrightsmedia.com*. Postmaster: Send address changes to **Intellectual Property & Technology Law Journal**, Wolters Kluwer Distribution Center, 7201 McKinney Circle, Frederick, MD 21704. Send submissions and editorial correspondence to Steven A. Meyerowitz, Esq., Meyerowitz Communications Inc., 26910 Grand Central Parkway, # 18R, Floral Park, NY 11005. To subscribe, call 800-638-8437.

FDA Amends Regulations for 505(b)(2) Applications and ANDAs—Part II

By Shana K. Cyr, Li Feng, and Thomas L. Irving

This second part of a two-part article continues a discussion of the U.S. Food and Drug Administration's amendments to the regulations relating to the approval of new drugs. The first part of this article appeared in the September 2017 issue of the *Intellectual Property & Technology Law Journal*.

FDA's Amendments to Its Regulations

Patent Certifications

The amendments provide that a generic drug application must contain an appropriate certification or carve-out statement for each patent listed in the Orange Book, even if the applicant has initiated a patent listing dispute as to that patent. The Federal Drug Administration (FDA) believes that its approach regarding patent certifications strikes an appropriate balance by protecting the patent rights of a holder of a new drug application (NDA) without unnecessarily delaying approval of generic drug applications.

A generic drug applicant is required to amend its patent certification if, at any time before approval, the applicant learns that the previously submitted patent certification is no longer accurate with respect to the pending application or supplement. If an applicant submits an amendment to its application, it must reevaluate whether the paragraph IV certification continues to be accurate.

Shana K. Cyr, Ph.D., (*shana.cyr@finnegan.com*) is a U.S. patent attorney at Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, where she practices all aspects of patent law relating to pharmaceuticals, biologics, diagnostics, and other products regulated by the U.S. Food and Drug Administration. **Li Feng, Ph.D.**, (*li.feng@finnegan.com*) is a U.S. patent attorney at the firm, focusing her practice on patent litigation before U.S. district courts, post-grant proceedings before the U.S. Patent and Trademark Office, patent prosecution, opinions and counseling, and due diligence. **Thomas L. Irving** (*tom.irving@finnegan.com*) is a U.S. patent attorney at the firm, focusing his practice on America Invents Act post-grant proceedings, due diligence, counseling, patent prosecution, and reissue and reexamination.

The amendments clarify the circumstances and time frame in which a generic drug applicant must submit an amended patent certification after an NDA holder has withdrawn the patent and requested removal of the patent from the Orange Book. If the Orange Book reflects that an NDA holder has requested that a patent or patent information be removed from the list and no applicant for an abbreviated new drug application (ANDA) is eligible for 180-day exclusivity based on a paragraph IV certification to that patent, the FDA will remove the patent or patent information. If an ANDA applicant is eligible for 180-day exclusivity based on a paragraph IV certification to that patent, the patent or patent information will remain listed until the 180-day exclusivity based on that patent expires or is extinguished. A 505(b)(2) applicant need not provide or maintain a certification to a patent or patent information that remains listed only for purposes of an ANDA applicant's 180-day exclusivity.

Once the patent or patent information is removed, applicants with pending generic drug applications who have made a certification with respect to the patent must submit an amendment to withdraw the certification. Once that amendment to withdraw the certification is submitted, the ANDA will no longer be considered to contain a paragraph IV certification to the patent. If removal of a patent from the list results in there being no patents listed for the pioneer drug identified in the generic drug application, the applicant must submit an amended certification reflecting that there are no listed patents.

The amendments also clarify the requirements for a generic drug applicant to amend a paragraph IV certification after a judicial finding of patent infringement to reflect statutory changes made by the MMA. If a court enters a final decision from which no appeal has been or can be taken, or signs and enters a settlement order or consent decree in the action that includes a finding that the

patent is infringed, a generic drug applicant who submitted a paragraph IV certification must submit an amendment to change its certification to a paragraph III certification or a carve-out statement, unless the final decision, settlement order, or consent decree also finds the patent invalid. If the final decision finds the patent infringed and invalid, the generic drug applicant need not file an amended certification.

Amendments and Supplements to Generic Drug Applications

A 505(b)(2) applicant may not submit an amendment or a supplement to its application to seek approval of a drug that is different from the drug in the original submission of the 505(b)(2) application. A drug is different if it has been modified to have a different active ingredient, route of administration, or dosage form, or a difference in recipients that requires either a separate clinical study to establish safety or effectiveness or, for topical products, that requires a separate in vivo demonstration of bioequivalence. An applicant may, however, amend a 505(b)(2) application to seek approval of a different strength of a drug.

An ANDA applicant may not submit an amendment to its application to seek approval of a drug referring to a listed drug that is different from the reference listed drug identified in the ANDA. This applies if, at any time before the approval of the ANDA, a different listed drug is approved that is the pharmaceutical equivalent to the product in the ANDA and is designated as a reference listed drug. It also applies if changes are proposed in an amendment to the ANDA such that the proposed product is a pharmaceutical equivalent to a different listed drug from the reference listed drug identified in the ANDA. A change of the reference listed drug must be submitted in a new ANDA. However, notwithstanding the limitation described in this paragraph, an applicant may amend the ANDA to seek approval of a different strength.

Patent Certifications for Application Amendments

The FDA reports that the amendments clarify and augment the patent certification requirements for amendments to generic drug applications to ensure that certain types of changes to the drug product are accompanied by an appropriate patent certification (or recertification) or carve-out statement. The regulations continue to require that a patent certification be amended if, at any time before approval, the applicant learns that the previously submitted patent certification or statement is no longer accurate.

If a generic drug applicant submits an amendment or supplement to its application that includes a paragraph IV certification, it must send notice of that certification, regardless of whether it already has given notice with respect to another such certification.

Generic drug applicants must amend their applications to provide documentation of the date of receipt of the notice by each person provided the notice. The amendment must be submitted to the FDA within 30 days after the last date on which notice was received by the NDA holder or a patent owner. The amendment also must include documentation that the notice was sent on a date that complies with the required time frame.

An amendment to a generic drug application must contain a patent certification or carve-out statement, or a recertification for a previously submitted paragraph IV certification, if approval is sought for any of the following types of amendments:

1. To add a new indication or other condition of use;

2. To add a new strength;

3. To make other than minor changes in product formulation; or

4. To change the physical form or crystalline structure of the active ingredient.

If the amendment to the 505(b)(2) application does not contain a patent certification or statement, the applicant must verify that the proposed change described in the amendment is not one of these four types. The four instances are intended to address concerns that the factual and legal bases of the applicant's opinion that a patent will not be infringed may have changed. These patent certification requirements are intended to facilitate ongoing compliance with the FDCA.

Notice of Paragraph IV Certifications

Timing of Notice

The FDA reports that the amendments clearly delineate the two limitations on the time frame within which notice of a paragraph IV certification can be provided to the NDA holder and each patent owner: (1) the date before which notice may not be given (reflecting the FDA's long-standing practice regarding premature notice); and (2) the date, established by the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA), by which notice must be given to be considered timely. For an original application, a 505(b)(2) applicant must send the notice on or after the date on which the application is filed, and an ANDA applicant must send the notice on or after the date on which it receives a paragraph IV acknowledgment letter (newly defined in the regulations) from the FDA stating that the application is sufficiently complete to permit substantive review. Both 505(b)(2) and ANDA applicants must send their notice not later than 20 days after the date of the postmark (as newly defined in the regulations) on the paragraph IV acknowledgment letter.

The amendments newly define "paragraph IV acknowledgment letter" and "acknowledgment letter" to facilitate implementation of the MMA's requirement for an ANDA applicant to send notice of a paragraph IV certification within 20 days after the date of the postmark on the notice with which the FDA informs the applicant that the application has been filed.[1] The paragraph IV acknowledgment letter contains information on certain regulatory requirements associated with a paragraph IV certification. The FDA concluded that it is unnecessary to distinguish between an acknowledgment letter and a paragraph IV acknowledgment letter for 505(b)(2) applications. If the 505(b)(2) application contains a paragraph IV certification at any time before the application is filed, the filing communication that the FDA sends to NDA applicants also will be the paragraph IV acknowledgment letter for purposes of determining the date by which notice of paragraph IV certification must be sent.

For an amendment or supplement, a generic drug applicant must send notice of a paragraph IV certification contained in an amendment (to a 505(b)(2) application that has been filed or an ANDA that has been received for substantive review) or supplement (to an approved application) at the same time that the amendment or supplement is submitted to the FDA.

The FDA reports that it is establishing a date (the first working day after the day the patent is published in the Orange Book) before which an ANDA applicant cannot send valid notice to a newly listed patent. Notice that is sent prematurely is invalid and will not be considered to comply with the FDCA's notice requirement. The FDA intends this approach to promote equity among ANDA applicants seeking eligibility for 180-day exclusivity and to reduce the burden on the industry and the FDA associated with serial submissions and multiple notices of paragraph IV certifications related to a newly issued patent.

With a few exceptions, the notice must be sent on or after the date of filing but not later than 20 days after the date of the postmark on the paragraph IV acknowledgment letter. The 20-day clock begins on the day after the date of the postmark on the paragraph IV acknowledgment letter. If the 20th day falls on a Saturday, Sunday, or federal holiday, then the 20th day will be the next day that is not a Saturday, Sunday, or federal holiday. If notice is sent before the date of filing, it is invalid.

Content of Notice

The FDA reports that the amendments revise the content of a paragraph IV notice to incorporate requirements added by the MMA and to support the efficient enforcement of its regulations. If the applicant alleges that the patent will not be infringed and seeks to preserve the option to later file a civil action for declaratory judgment, then it must include an offer of confidential access to its application for the sole and limited purpose of evaluating infringement of the patent that is the subject of the paragraph IV certification.

Notices must contain a statement that the applicant has received the paragraph IV acknowledgment letter for the ANDA.

Methods of Providing Notice

The amendments expand the acceptable methods of sending a paragraph IV notice beyond registered or certified mail to include designated delivery services. The FDA expects this amendment will reduce the burden on generic drug applicants who currently must submit requests to the FDA

to send notice by alternate delivery methods. In addition to registered or certified mail, with return receipt requested, paragraph IV notices may be sent by a designated delivery service as defined by the amended regulations.

Patent Infringement Litigations

The 45 days as to each required recipient of a paragraph IV notice begins on the day after the date of receipt of the notice. If the 45th day falls on a Saturday, Sunday, or federal holiday, then the 45th day will be the next day that is not a Saturday, Sunday, or federal holiday.

An applicant must submit certain types of information to the FDA, including a copy of any judgment by the court or settlement order or consent decree signed and entered by the court finding a patent invalid, not infringed, or valid and infringed. The generic drug applicant must also notify the FDA in writing within 14 days of any legal action filed within 45 days of receipt of a paragraph IV notice by any recipient.

Approval of Generic Drug Applications

Generally

The FDA reports that the amendments describe, in a more comprehensive manner, the timing of approval of a generic drug application based on the accompanying patent certifications and statements. The status of listed patents must be considered in determining the first possible date on which a generic drug application can be approved. The regulations set forth criteria to determine, for each relevant patent, the date that patent will no longer prevent approval. The first possible date on which the generic drug application can be approved will be calculated for each patent, and the application may be approved on the last applicable date.

A generic drug application generally may be approved immediately if (1) the applicant certifies that required patent information has not been submitted to the FDA, the relevant patent has expired, the relevant patent is invalid, unenforceable, or will not be infringed except as provided and the 45-day period has expired, or there are no relevant patents; or (2) the applicant submits an appropriate statement explaining that a method-of-use patent does not claim an indication or other condition of use for which the applicant is seeking approval, except that if the applicant also submits a paragraph IV certification to the patent, then the generic drug application may be approved as provided. The application may be approved on the date specified if the applicant certifies that the relevant patent will expire on a specified date.

If an NDA holder submits required patent information after the date that a generic drug application was submitted to the FDA, the applicant must comply with the requirements regarding submission of an appropriate patent certification or statement. If the applicant submits an amendment certifying that the relevant patent is invalid, unenforceable, or will not be infringed, and complies with other requirements, the application may be approved immediately upon submission of documentation of receipt of notice of paragraph IV certification. The 45-day period provided for in the Federal Food, Drug, and Cosmetic Act (FDCA) does not apply in these circumstances.

If required information was submitted before the date the generic drug application was submitted to the FDA, the applicant makes a paragraph IV certification, and the patent owner or the exclusive patent licensee brings suit for patent infringement within 45 days of receipt of the notice of certification, the generic drug application may be approved 30 months after the later of the date of the receipt of the notice of certification by any owner of the listed patent or by the NDA holder.

If a generic drug application is submitted for a drug or method of using a drug claimed by a patent and the applicant has a licensing agreement with the patent owner, the applicant must submit a paragraph IV certification as to that patent and a statement that the applicant has been granted a patent license. If the patent owner consents to approval of the application (if otherwise eligible for approval) as of a specific date, the generic drug application must contain a written statement from the patent owner that it has a licensing agreement with the applicant and that it consents to approval of the generic drug application as of a specific date.

The FDA may refuse to approve a 505(b)(2) application for multiple reasons, including that the application failed to contain a patent certification or statement with respect to each listed patent for a drug product approved in an NDA that (1) is pharmaceutically equivalent to the drug product for which the original 505(b)(2) application was

submitted, and (2) was approved before the original 505(b)(2) application was submitted. The amendments require 505(b)(2) applicants to identify one pharmaceutically equivalent drug product approved in an NDA, if one or more is approved before the original 505(b)(2) is submitted, as a listed drug relied on, and comply with applicable regulatory requirements. The FDA intends this provision to help ensure that the 505(b)(2) pathway is not used to circumvent the statutory patent certification obligations that would have applied if the proposed product could have been approved in an ANDA.

30-Month Stay

The FDA reports that the amendments codify the types of court decisions and other actions that will terminate a 30-month stay of approval for a generic drug application. The FDA intends these amendments to avoid unnecessary delays in approval of generic drug applications while upholding the statutory purpose of the stay as allowing time for patent infringement claims to be litigated prior to approval of the potentially infringing product.

The FDA states that the amendments reflect the MMA's limitation on multiple 30-month stays of approval of a generic drug application containing a paragraph IV certification. The amendments clarify that the statutory 30-month stay begins on the later of the date of receipt of notice of paragraph IV certification by any owner of the listed patent or by the NDA holder (or its representative). The FDA states that this revision codifies the FDA's current practice and provides an efficient means of ensuring that each patent owner or NDA holder receives the full 30-month stay.

The amendments codify the MMA's clarifications of the types of federal district and appellate court decisions in patent litigation that will terminate a 30-month stay and lead to approval of a generic drug application that is otherwise eligible for approval. First, if before the expiration of the 30-month period (or the seven and one-half years where applicable), the district court decides that the patent is invalid, unenforceable, or not infringed (including any substantive determination that there is no cause of action for patent infringement or invalidity), the 505(b)(2) application or ANDA may be approved on (1) the date on which the court enters judgment reflecting the decision, or (2) the date of a settlement order or consent decree signed and entered by the court stating that the patent that is the subject of the certification is invalid, unenforceable, or not infringed.

Second, if before the expiration of the 30-month period (or the seven and one-half years where applicable), the district court decides that the patent has been infringed and the judgment is appealed, the generic drug application may be approved on (1) the date on which the mandate is issued by the court of appeals entering judgment that the patent is invalid, unenforceable, or not infringed; or (2) the date of a settlement order or consent decree signed and entered by the court stating that the patent that is the subject of the certification is invalid, unenforceable, or not infringed.

Third, if before the expiration of the 30-month period (or the seven and one-half years where applicable), the district court decides that the patent has been infringed and the judgment is not appealed or affirmed, the application may be approved no earlier than the date specified by the district court in an order under 35 U.S.C. § 271(e)(4)(A).

The amendments also address other scenarios in which a 30-month stay may be terminated, including written consent to approval by the patent owner or exclusive patent licensee, a court order terminating the stay, or a court order of dismissal without a finding of infringement in each pending suit for patent infringement brought within 45 days of receipt of a paragraph IV notice. For example, if before the expiration of the 30-month period (or the seven and one-half years where applicable), the patent owner or the exclusive patent licensee agrees in writing that the generic drug application may be approved any time on or after the date of the consent, approval may be granted on or after that date. If before the expiration of the 30-month period (or the seven and one-half years where applicable), the court enters an order requiring the stay to be terminated, the generic drug application may be approved in accordance with the court order, and if it enters an order of dismissal, with or without prejudice, without a finding of infringement in each pending suit for patent infringement brought within 45 days of receipt of the paragraph IV notice, the application may be approved on or after the date of that order.

180-Day Marketing Exclusivity

Subsequent ANDAs cannot be approved during a 180-day period of exclusivity, but any applicable

180-day exclusivity period cannot extend beyond the expiration of the patent on which the 180-day period was based.

The amendments reflect the MMA provisions that modify the types of events that can trigger the start of the 180-day exclusivity period. A first applicant must notify the FDA within 30 days of the date of first commercial marketing of the drug product. If a first applicant does not, then the FDA will deem the date of first commercial marketing to be the date of approval. This may have the effect of shortening the 180-day exclusivity period in a similar manner to the current regulatory consequence for failure to provide prompt notice of first commercial marketing. If the FDA concludes that the first applicant is not actively pursuing approval of its ANDA, the FDA may immediately approve an ANDA of a subsequent applicant if the ANDA is otherwise eligible for approval.

The FDA reports that it is otherwise implementing the 180-day exclusivity provisions of the MMA directly from the statute and will determine whether further rulemaking is necessary in the future.

Conclusion

It remains to be seen whether the FDA's amendments to Parts 314 and 320 of Title 21 of its regulations will reduce litigation or delays in the approval of generic drug applications. It is also unclear whether the amendments have provided transparency or provided business certainty to pharmaceutical companies. While some of the amendments have provided clarity, others have raised additional questions. Pharmaceutical companies that are developing or marketing new drugs should consider how the amendments may affect them and should pay close attention to further guidance from the FDA.

Note

1. Final Rule, 81 Fed. Reg. at 69,591.

The Use of Genetic Evidence to Defend Against Toxic Tort Claims—Part II

By Susan E. Brice and Dr. Whitney V. Christian

This second part of a multi-part article explores genetic data and toxic tort law, and genetic biomarkers. The first part appeared in the September 2017 issue of *Intellectual Property & Technology Law Journal*. The remaining parts of the article will appear in upcoming issues of the *Intellectual Property & Technology Law Journal* with a discussion of genomics and toxicogenomics, epigenetics, and tools for understanding causation at the genomic level.

Genetic Data and Toxic Tort Law

There are two types of genetic data that likely will shape toxic tort litigation in the near future: (1) data on individual genetic susceptibility[33] and (2) genetic evidence, including biomarkers of cause and effect.[34] This article addresses both, but focuses more on the latter.

The generally accepted process by which testifying experts determine specific causation is known as differential diagnosis. "Differential diagnosis, or differential etiology, is a standard scientific technique of identifying the cause of a medical problem by eliminating the likely causes until the most probable one is isolated."[35] In the toxic tort context, an expert performs a differential diagnoses by examining which of two or more etiologies, or causes, might have led to the disease. As recently stated by the U.S. Court of Appeals for the Seventh Circuit, for differential etiology to be "validly conducted, an expert must systematically 'rule in' and 'rule out' potential causes in arriving at her ultimate conclusion."[36] Consequently, alternative causation can be a powerful tool in defending toxic tort cases.

Susan E. Brice (*susan.brice@bryancave.com*) is a partner at Bryan Cave LLP defending toxic tort and environmental cases brought against corporate clients in cases involving complex scientific issues. **Dr. Whitney V. Christian** was formerly a health scientist with Cardno ChemRisk, and is now a senior toxicologist at Medtronic, focusing on genetics, toxicology, and gene-environment interactions and their contribution to the development of human disease.

While the published opinions are scant, litigants for years have employed genetic evidence to demonstrate or suggest alternative causation, such as showing that an inherited genetic defect caused a disease as opposed to a toxic exposure. In *Jones v. NL Industries*, the court allowed expert testimony about the plaintiff's family history to defeat a claim that lead paint caused mental disabilities in children.[37] The defense argued that, based on medical evaluations of the plaintiffs and their families, the plaintiffs' learning disabilities were inherited from their parents as opposed to being related to lead poisoning.[38] The court allowed the testimony, even though the defendants did not offer genetic evidence to support their opinions.

Recent advances in genetic testing make this type of argument even more compelling. In *Deribeaux v. Secretary of Health and Human Services*, the Secretary of Health and Human Services relied on genetic testing to demonstrate that the child's seizures were caused by mutations in her SCN1A gene and not by a vaccine given to the child. The Federal Circuit held that the Secretary "carried her burden and that the SCN1A gene mutation was the sole substantial cause of Deribeaux's seizure disorder and developmental delays."[39]

In *Bowen v. E.I. Dupont de Nemours*, the defendant was permitted to conduct newly available genetic testing on the plaintiff to show that the birth defect at issue was inherited instead of being caused by prenatal exposure to Benlate, a fungicide.[40] The testing showed that the plaintiff had a specific genetic mutation associated with an inherited syndrome, CHARGE, that was known to cause the birth defects at issue. The defense therefore argued that the mutation, as opposed to Benlate, caused the defects. According to the opinion, the genetic testing results were so compelling that they caused one of the plaintiff's experts to switch sides and agree with the defense that the birth defects were related to CHARGE and its associated mutation. The court granted the defendant's motion to exclude the

plaintiff's expert testimony that Benlate caused the defects, finding that the expert could not rule out CHARGE and the mutation as the cause; "there is no evidence of any cause other than the CHD7 mutation."[41] As a result, the court also granted defendant's motion for summary judgment because "without the testimony of those witnesses [the experts] the plaintiffs could not establish that Benlate was a human teratogen or that it was a specific cause of the injuries being complained of by either plaintiff."[42]

Likewise, in *Wintz v. Northrop*, parents brought an action against the manufacturer of photographic developing materials containing bromide and the mother's employer, claiming their infant suffered developmental problems from *in utero* exposure.[43] The infant's bromide levels were elevated and her symptoms were similar to another case where an infant was injured from bromide. The infant underwent genetic testing and it was found that the infant possessed a genetic disorder known as Prader-Willi Syndrome, which is caused by a deletion in paternal genetic material and is not environmentally related.[44] The lower court excluded the testimony of the plaintiff's causation expert, and the Seventh Circuit affirmed. The courts took issue with the expert's qualifications as well as his methodology. The courts were particularly troubled by the fact that the expert, a toxicologist and not a medical doctor, lacked any specific experience with bromide, Prader-Willi Syndrome, or birth defects in general.[45] The exclusion of the expert testimony led to summary judgment for the defendants.

While not a published opinion, a recently resolved case from the Superior Court of Delaware serves as a good example of how expert testimony and genetics are employed in the courtroom today. In that case, *Pallano v. AES Corporation*, residents of Dominican Republic sued coal-fired power plant operators alleging that coal ash waste deposited on beaches caused them to suffer a myriad of personal injuries, including birth defects.[46] According to the court, there were 19 *Daubert* motions filed by the parties in "this hotly and heavily litigated dispute."[47] Some of the *Daubert* motions focused on testimony involving genetic evidence. For example, the plaintiffs moved to exclude a defense expert who opined that a plaintiff's gastrointestinal neurological disease (Hirschsprung's disease) was most likely caused by genetic variation and not environmental factors. The doctor opined that Hirschsprung's disease "follows a multigenic model" (associated with the interaction of variants of several genes) and noted that genetic testing showed that the child plaintiff possessed at least three genetic variations associated with the disease. The court ruled that the defense expert's opinion "passes muster under D.R.E. 702 and *Daubert*."[48]

The defense attacked the plaintiff's medical geneticist. The court "was more than satisfied" that the plaintiff's medical geneticist met the requirements under the rules and *Daubert* as he analyzed each child's "genetic testing results, relevant medical literature, and how each child Plaintiff's individual gene variants relate (or do not relate) to their individual congenital anomalies" and he also analyzed literature relating to "gene-environment interactions in the etiology of birth defects, embryology and organ formation, and human epidemiological and animal studies concerning Coal Ash Waste and its toxic constituents, … and discusses how each of these studies factor into his causation analysis for plaintiffs."[49] After these key *Daubert* motions failed, the matter settled one month later, in April 2016.[50]

In some cases, courts have excluded expert testimony simply for neglecting to consider genetics as an alternative cause. These courts view the expert's failure to "rule in" genetics as a potential cause as a misapplication of the differential diagnosis methodology and therefore fatal to the expert's opinion.[51] In *Palmer v. Asarco*, the northern district of Oklahoma excluded expert testimony that exposure to lead caused the plaintiff's learning disabilities and IQ loss. The court reasoned that the doctor failed to "consider factors such as genetics, parental intelligence and psychosocial settings" and thus did not perform a proper differential diagnosis.[52] Likewise, in *Lofgren v. Motorola*, for example, the court excluded an expert's attempt to tie trichloroethylene exposure to brain cancer.[53] The court held: "There are a number of inherited or genetic syndromes that may contribute to the development of brain tumors. Dr. Kilburn apparently did not consider any genetic components or attempt to discuss or evaluate how they may have caused or contributed to the plaintiff's concern. Dr. Kilburn's elimination from consideration alternative risk or confounding factors does not appear to be in step with mainstream scientific thought on proper methodology for arriving at causation opinion. Dr. Kilburn's testimony is, therefore, for the above reasons inadmissible."[54]

Genetic Biomarkers

In more recent years, plaintiffs and defendants alike have begun to explore the next level of genetic evidence—biomarkers of cause and effect.[55] Biomarkers in general are defined as: (1) a chemical, (2) its metabolite, or (3) the product of an interaction between a chemical and some target molecule or cell that is measured in the human body.[56]

A genetic biomarker of effect represents an interaction between a chemical and a target molecule in the human body. In other words, the biomarker comes in the form of a genetic fingerprint, or to use a more simple analogy, a trail of breadcrumbs. A geneticist looking in the right place can see the breadcrumbs and know that a specific chemical exposure *could* have caused a mutation associated with the initiation of a disease process. The "could" caveat is explained in more detail hereinafter.

The courts are becoming accustomed to the introduction of biomarkers into evidence. In *Cord v. City of Los Angeles*, plaintiffs in California claimed that benzene and other chemicals emanating from a landfill near a high school caused lymphatic cancer.[57] To rebut the plaintiffs' claim that Mr. Cord experienced "chronic exposure to benzene and other volatile compounds during his years of employment at the high school," the court allowed the testimony of the City's expert, who argued that

> [b]iomarker [testing] can be performed utilizing blood, urine or fat samples … Such biomarkers can test for 180,000 different chemicals, including the chemicals to which plaintiffs claim Mr. Cord was exposed resulting in his cancer … because no such test were performed on Mr. Cord, "it is impossible to determine to a medical certainty" whether Mr. Cord's exposure, absorption or toxicity to benzene or other chemicals exceeded normal and expected levels. In other words, existing tests were available to measure whether Mr. Cord in fact had excessive exposure to benzene and other chemicals but plaintiffs' experts did not use them.[58]

The appellate court found that this rebuttal opinion was properly considered in the granting of summary judgment for the defense.[59]

Chromosomal aberrations and specific gene mutations exemplify two different types of genetic biomarkers of effect.[60] A good example of a biomarker of effect associated with chemical exposure can be found in how benzo(a)pyrene impacts the p53 tumor suppressor gene. If this gene is not functioning properly, tumor suppression is hindered and a person is more likely to develop tumors. Researchers have discovered that exposure to benzo(a)pyrene (a chemical contained in cigarette smoke) can produce DNA adducts. DNA adducts can occur when carcinogens chemically bind to the nucleotides (the G, C, T or A) in the DNA sequence of our cells. These abnormal adducts then mechanically interfere with the DNA replication process and lead to mutations that can cause cancer.

It has been determined that DNA adducts created by benzo(a)pyrene (benzo(a)pyrene bonded to DNA) can result in specific mutations within the p53 tumor suppressor gene that are linked to smoke-induced lung cancer.[61] Consequently, the presence of benzo(a)pyrene-DNA adducts at certain locations within the p53 tumor suppressor gene in a lung cancer patient suggests that the patient's lung cancer *could* have been caused by benzo(a)pyrene. In other words, the adducts allow an expert performing a differential diagnosis to "rule in" benzo(a)pyrene as a possible cause. The absence of adducts, however, can largely rule out benzo(a)pyrene as the cause.

The reason for this disparity in proof lies in the intricacy of the human biological process. As was noted at the beginning, "[m]ost common complex diseases are believed to be the result of the combined effect of genes, environmental factors and their interactions."[62] Therefore, a geneticist's investigation into cause and effect must take into account the reality that humans are exposed to thousands of chemicals and other substances each day in what they eat, what they drink, which medicines they take, the composition of the air they breathe and the surroundings they encounter.[63] While the science of biomarkers is rapidly developing, in most cases, there still remains a lack of specificity to prove that *one cause*, such as a single chemical exposure as opposed to a number of factors, created the genetic biomarker and was a substantial factor in bringing about the disease.

It is easier, though, to prove the negative. If it is well known that benzo(a)pyrene causes lung cancer through one pathway and evidence of that pathway is absent in the plaintiff, then it is unlikely that

the benzo(a)pyrene caused the plaintiff's disease. If multiple known pathways exist, however, the ability to rule out benzo(a)pyrene as the cause becomes more difficult. As a result, the efficacy of the studies supporting the pathogenesis of the disease and of the chemical-to-disease connection is of paramount importance.

While published decisions are scant, courts have entertained the absence of a known pathway to find for the defense. In *Tompkin v. Philip Morris USA*, the defendant argued that asbestos, as opposed to smoking, caused the plaintiff's lung cancer.[64] The defense expert opined that the decedent lacked mutations in the p53 and Ki-ras genes known to be caused by smoking, and thus his cancer likely stemmed from asbestos.[65] The jury ultimately found that the cancer was caused by asbestos, a win for the defense. The decision was affirmed on appeal in which the U.S. Court of Appeals for the Sixth Circuit noted that the trial court had stated that the genetic testimony was particularly "devastating" to plaintiff's case.[66]

In *Milward v. Acuity Specialty Products Group, Inc.*, the initial case turned on general causation, whether benzene could cause the unique type of acute myelogenous leukemia (AML) contracted by the plaintiff.[67] The parties agreed that benzene could cause chromosomal aberrations that lead to certain forms of AML, but benzene had not been linked to the characteristic genetic alteration (t(15;17)translocation) almost always found in this plaintiff's type of AML.[68] The expert attempted to opine that because benzene is known to cause some chromosomal damage, it probably also causes the (t(15;17)translocation) linked to the AML contracted by the plaintiff. The court held that the expert's "general extrapolation" was unjustified and not a "reliable scientific conclusion," therefore excluding the opinion.[69] On appeal, the U.S. Court of Appeals for the First Circuit reversed. The court did not disagree with the merits of the court's criticism of the opinion, but rather opined that the lower court went too far and that the "alleged flaws identified by the court go to the weight of Dr. Smith's opinion, not its admissibility. There is an important difference between what is *unreliable* support and what a trier of fact may conclude is *insufficient* support for an expert's conclusion."[70]

In *Henricksen v. ConocoPhillips Co.*, the court excluded the plaintiff's causation experts, in part, because they failed to consider adequately the possibility of an alternative cause, *de novo* AML (AML that is unrelated to chemical exposure).[71] Science distinguishes between *de novo* AML and secondary AML (AML caused by an external stimulus, including benzene exposure).[72] According to the court, the majority of adult AML cases (80-90 percent) were *de novo.* In secondary AML cases, 90 percent showed chromosomal aberrations and typically were preceded by myelodysplatic syndrome. Mr. Hendricksen had neither.[73] Because Mr. Hendricksen's presentation was much more closely aligned with *de novo* AML, it was improper methodology for plaintiff's causation experts not to rule in *de novo* AML as a potential cause then to rule out *de novo* AML as the cause.[74] Accordingly, the court excluded the experts and granted summary judgment to the defendants.

* * *

This article will continue in the *Intellectual Property & Technology Law Journal* with a discussion of genomics and toxicogenomics, epigenetics, and tools for understanding causation at the genomic level.

Notes

33. Research has shown that some individuals are more genetically susceptible to disease, including disease caused by environmental exposures. As a result, plaintiffs in toxic tort litigation have attempted to use evidence of genetic susceptibility to prove they are more at risk than the average person to contracting a particular ailment due to chemical exposure. So far, these efforts have not been fruitful in large measure because the plaintiffs who have tried have been unable to show that they possess and/or are expressing the genetic variant that makes them susceptible. *See, e.g.,* Hall v. Baxter Healthcare Corp., 947 F. Supp. 1387, 1456 (D. Or. 1996) (rejecting introduction of evidence of genetic susceptibility to silicone because the breast implant plaintiffs had failed to show that they carried the specific genes allegedly conferring susceptibility); Pohl v. NGK Metals Corp., 2003 WL 25871522 (Pa. Com. Pl. July 9, 2003 (Philadelphia)) (order denying class action when evidence demonstrated that in order to develop Chronic Berryllium Disease, plaintiffs must have a genetic predisposition to beryllium sensitization and that none of the named plaintiffs tested positive for beryllium sensitization). However, even if a plaintiff

demonstrates susceptibility, there is a question whether the law would recognize the injury. In some states, such as Illinois, courts protect manufacturers from liability when a plaintiff suffers from an "idiosyncratic" reaction to a product. *See* Presbrey v. Gillette Co., 105 Ill. App. 3d 1082, 1091, 435 N.E.2d 513, 520 (2d Dist. 1982) ("[t]he unusual susceptibility of the consumer is generally recognized as a complete defense where the manufacturer did not know and had no reason to know that a very few users of his product might be injured."); Bear v. Power Air, Inc., 230 Ill. App. 3d 403, 595 N.E.2d 77 (1st Dist. 1992) (building owner not liable for eye injury resulting from dust generated during installation of new air conditioning equipment because conduct was not in and of itself inherently dangerous, but became hazardous only to person with employee's sensitive eye condition.) This concept, which is somewhat at odds with the "eggshell plaintiff" doctrine, is exemplified in the Food Allergen Labeling and Consumer Protection Act of 2004 (Public Law 108-282), which requires only that food labels warn about eight major allergens.

34. Gary E. Marchant, "Genetic Data in Toxic Tort Litigation," *J. of L. & Policy*, (2006).
35. Clausen v. M/V New Carissa, 339 F.3d 1049, 1057 (9th Cir. 2003) (*quoting* Stedman's Medical Dictionary 474 (26th Ed. 1995)); *Higgins*, 794 F.3d at 705 (explaining that "differential etiology" is the proper term for "causation-determination methodology").
36. *Higgins*, 794 F.3d at 705; *Clausen*, 339 F.3d at 1058 ("[a]fter the expert rules in all of the potential hypotheses … he or she must then engage in a process of elimination, eliminating hypotheses on the basis of a continuing examination of the evidence so as to reach a conclusion as to the most likely cause of the findings in that particular case"); *see also Reference Manual on Scientific Evidence* (3rd Ed.) at 617 ("[e]liminating other known and competing causes increases the probability that a given individual's disease was caused by exposure to the agent.")
37. Staff Report, *Federal jury accepts paint manufacturer's gene defense*, (Aug. 6, 2006) *http://www.picayuneitem.com/2006/08/federal-jury-accepts-paint-manufacturers-gene-defense* (discussing *Jones v. NL Industries*).
38. Sheila Byrd, *Gene Defense in Lead Paint Case Rankles* (July 13, 2006), *http://www.washingtonpost.com/wp-dyn/content/article/2006/07/13/AR2006071301205_pf.html.*
39. Deribeaux v. Secretary of Health and Human Services, 717 F.3d 1363, 1368 (Fed. Cir. 2013); *see also* Myers v. United States, 2014 WL 611398, *47-49 (S.D. Ca. Nov. 20, 2014) (bench trial order finding that plaintiff's alopecia was more likely than not the result of genetics as opposed to thallium exposure).
40. Bowen v. E.I. Dupont de Nemours, No. Civ.A. 97C-06-194 CH, 2005 WL 1952859 (Del. Super. June 23, 2005).
41. *Id*. at *11.
42. *Id*. at *6.
43. Wintz v. Northrop Corp., 110 F.3d 508 (7th Cir. 1997).
44. *Id*. at 511.
45. *Id*. at 513-14.
46. Pallano v. AES Corp., 2016 WL 930545, *1 (Del. Super. March 10, 2016) (trial court order noting that Defendants challenged seven of Plaintiff's causation experts and plaintiffs have challenged six of Defendants' causation experts).
47. Pallano v. AES Corp., 2015 WL 7776612, at *1 (Del. Super. Nov. 24, 2015) (trial court order).
48. Pallano v. AES Corp, 2015 WL 9008641, *2-3 (December 11, 2015).
49. *Pallano v. AES Corp*, 2016 WL 930545, *2 (March 10, 2016).
50. *http://www.bloomberg.com/news/articles/2016-04-04/aes-settles-suit-over-coal-ash-dumping-in-dominican-republic.*
51. *C.f.*, Tumlinson v. Advanced Micro Devices, No. 08C-07-106 FSS, 2013 WL 7084888 (Del. Super. October 15, 2013) (in a case alleging that exposure to multiple chemicals at semiconductor plant caused birth defects, court struck epidemiologist's opinion for failure to apply adequately differential diagnosis to support her opinion; epidemiologist did not show that there was only one possible cause of the birth defects and epidemiologist did not explain her rejection of other possible causes, such as mother's obesity and the fact that, though rare, the birth defects did occur in the population at large without evidence of causation.").
52. Palmer v. Asarco Inc., 2007 WL 2298422,*9 (N.D. Okla. Aug. 6, 2007); *see* Brown v. Burlington N. Santa Fe Ry. Co., 2013 WL 1729046, at *10 (C.D. Ill. Apr. 22, 2013), *aff'd*, 765 F.3d 765 (7th Cir. 2014) (excluding doctor that admitted that "there is a genetic predisposition to CTD [carpal tunnel syndrome], yet the doctor failed to 'rule in' Brown's [family] history [of CTD].")
53. Lofgren v. Motorola, No. CV 93-05521, 1998 WL 299925 (Ariz. Super. Ct. June 1, 1998).
54. *Id*. at 33; Nat'l Bank of Commerce v. Dow Chemical Co., 965 F.Supp. 1490 (E.D. Ark. 1996) (in a case alleging that *in utero* exposure to pesticide caused birth defects, the court excluded the plaintiff's expert who lacked specialty in genetics or teratology and attempted to rule out genetics as a cause based solely on anecdotal family history).
55. Biomarkers largely fall into one of three classification groups: (1) biomarkers of exposure, (2) biomarkers of effects, and (3) biomarkers of susceptibility. F Gil and A Pla, "Biomarkers as biological indicators of xenobiotic exposure," 21 *J Appl Toxicol*. (2001). For example,

a biomarker of exposure to lead can be determined by looking at the amount of lead in a person's blood or urine; a biomarker of effect can be depressed Δ-aminolevulinic acid dehydratase (ALAD) activity, the presence of coproporphyrinogen III in urine, or the accumulation of protoporphyrin XI and zinc protoporphyrin in red blood cells; and a biomarker of susceptibility, can be specific ALAD polymorphisms or a lack of allelic variation in expression (*e.g.*, ALAD1 homozygotes). T SAKAI, "Biomarkers of lead exposure," 38 *Ind Health.* (2000).

56. World Health Organization, Environmental Health Criteria 237, "Principles for Evaluating Health Risks in Children Associated with Exposure to Chemicals," published under UNEP-ILO-WHO, Geneva. (2006).
57. Cord v. City of Los Angeles, No. EC032513, 2004 WL 2189182 (Sept. 30, 2004).
58. *Id.* at *9.
59. *Id.* at *1.
60. Testing exists to examine both types. Examples of testing for chromosomal aberrations include karyotyping, extended banding, fluorescence in situ hybridization or chromosomal microarray analysis to determine whether whole chromosome or chromosome fragments have been deleted, duplicated, inverted, translocated or otherwise rearranged. Genetic mutations can be identified by analyzing the DNA sequence of specific genes. This can be done through DNA microarray analysis, Sanger sequencing, shotgun sequencing, as well as next-generation sequencing, which includes highly accurate techniques such as polony sequencing, SOLiD sequencing, and SMRT sequencing. These tests look at the order of the nucleotides within cells' DNA in comparison to control, or "normal", DNA.
61. MF Denissenko, et al., "Preferential formation of benzo [a] pyrene adducts at lung cancer mutational hotspots in P53," *274 Science* (1996).
62. H. Aschard, et al., "Challenges and opportunities in genome-wide environmental interaction (GWEI) studies," 131 *Hum Genet.* (2012).
63. It is estimated that humans are exposed to 1–3 million discrete chemicals in a lifetime. J.R. Idle, et al., "Metabolomics," 6 *Cell Metab*. (2007).
64. Tompkin v. Philip Morris USA, Inc., 362 F.3d 882 (6th Cir. 2004).
65. *Id.* at 890 n.5.
66. *Id.* at 894.
67. Milward v. Acuity Specialty Products Group, Inc., 664 F.Supp.2d 137, 146-147 (D. Mass. 2009), *rev'd* 639 F.3d 11 (1st Dist. 2011).
68. *Id.* at 146-147.
69. *Id.* at 147.
70. Milward v. Acuity Specialty Products Group, Inc., 639 F.3d 11, 22 (1st Cir. 2011).
71. Henricksen v. ConocoPhillips Co., 605 F.Supp.2d 1142 (E.D. Wash. 2009).
72. *Id.* at 1149-50.
73. *Id.*
74. *Id.* at 1163.

Making the Most of Expert Witnesses in Advertising Cases—Part I

By August T. Horvath

This first part of a two-part article on typical expert issues that occur in false-advertising cases considers the power of the expert witness, the types of experts in advertising cases, and how to select an expert witness. The second part of this article, which will appear in an upcoming issue of the *Intellectual Property & Technology Law Journal*, will explain the work of the expert, expert depositions, and examining and cross-examining experts at a trial or hearing.

Why Expertise Is Like a Super Power

> Today I made an appearance downtown.
>
> I am an expert witness, because I say I am. And I said, Gentlemen, and I use that word loosely, I will testify for you. I'm a gun for hire. I'm a saint, I'm a liar. Because there are no facts, there is no truth. Just data to be manipulated.
>
> I can get you any result you like. What's it worth to you? Because there is no wrong, there is no right, and I sleep very well at night. No shame, no solution, no remorse, no retribution. Just people selling t-shirts. Just an opportunity to participate in the pathetic little circus.
>
> And winning, winning, winning.
>
> —Satan, in "The Garden of Allah" by Don Henley, 1995

Experts have a privileged role in the American legal system. They can say things in court that are not permitted of any fact witness or of the advocates for the parties. Potentially, they carry the most respect and credibility of anyone in the courtroom apart from the judge. Often, they can testify directly as to issues pivotal to the litigation, whereas fact witnesses have to deposit threads of information to be woven into an argument by lawyers. In selecting and handling an expert, it is critical to remember the power they can wield.

How did such a creature as an expert witness come to exist? In the British-American tradition, the first recorded use of an expert witness was in 1782, when an engineer testified in a case in England about the silting-up of a harbor. Today, in the United States, the role of expert witness is created and governed by the 700-series rules of the Federal Rules of Evidence and by analogous state procedures. Rule 701 actually pertains to lay witnesses, forbidding them from testifying as to their opinion or specialized knowledge, and preserving these as the exclusive domain of the expert. Rule 702 provides that "a witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case." Rule 703 clarifies the facts or data referenced in Rule 702(b), providing that they may be presented by the expert even if they are otherwise inadmissible if "experts in the particular field would reasonably rely on" them. Rule 704 provides that an expert witness may even testify as to the "ultimate issue" in a case, except for the mental state of a criminal defendant.

Originally, and theoretically still, the purpose of an expert witness is not to advance the interests of one party or the other, but to "help the trier of fact

August T. Horvath is a false-advertising and antitrust partner at Kelley Drye & Warren LLP. He may be contacted at *ahorvath@kelleydrye.com*.

to understand the evidence or to determine a fact in issue." A party may source the expert and pay the bills, but the expert supposedly works for the judge and jury. Even today, when the independence of expert witnesses can seem quaint, the best experts treat the judge and jurors as their clients in their courtroom demeanor.

The implications of the federal rules give the expert witness several specific super-powers. Foremost is their unique ability to express an opinion rather than mere facts. Because of Rule 703, an expert can rely for those opinions on hearsay and other admissible evidence that the attorneys otherwise would be scratching their heads over how to get before the jury. An expert also can engage in "what if…" speculation about hypothetical facts. Finally, and less formally, because of the technical nature of much of the subject matter, the presentation of expert witness testimony by direct examination can be very obviously prepared and rehearsed. With fact witnesses, the system maintains the fiction that witnesses drop into court unprepared to share their recollections. Expert presentations are choreographed affairs with slides and other visual aids. The narrative of how the expert performed a study and what the conclusions were can make a refreshing play-within-the-play of the greater trial for the jury, which often wakes up and pays increased attention.

This article focuses on typical expert issues that occur in false-advertising cases, whether competitor Lanham Act suits or consumer class actions in court, government enforcement by the Federal Trade Commission or state attorneys general, or self-regulatory challenges before the National Advertising Division.

The Two (or Three) Types of Experts in Advertising Cases

The Survey Expert: What Did the Ad Say?

Although literal advertising claims are everywhere in the marketplace, a large proportion of advertising disputes challenge claims that are, to at least some degree, only implied. No matter what legal, enforcement or self-regulatory forum the challenge occurs in, consumer survey research evidence will be useful, if not necessary, for both sides' arguments about whether the advertisement conveys a false impression. The survey expert will be retained to conduct a survey in which one or more advertisements, or relevant portions of them, are shown to respondents representative of consumers who are then questioned, in any of several ways, on what message is communicated by the advertisement. Optionally, depending on the needs of the litigation, respondents also may be asked whether they would *believe* the representation they have identified and whether, if they believe it, it would be material to their purchasing decision.

Some, but not all, survey experts additionally bring substantive marketing expertise to the table. These experts often teach and conduct research in business schools and are familiar with social-science theories in the fields of persuasion and consumer behavior. For many cases, these credentials and experience are a distinct added value. Researchers with marketing and consumer expertise can opine beyond the narrow results of the survey as to how consumers process information and typical practices in marketing and advertising. Broad knowledge of marketing psychology can even help respond to the adversary's survey criticisms, because the expert can opine that consumers (respondents) would not plausibly respond to alleged survey flaws in the ways contended by critics of the study. There are limits, though, to the scope of expert marketing testimony.

The Substantiation Expert: Is the Ad True?

Many advertising cases are over as soon as the argument over what the advertisement communicates is resolved. Challengers often contend that the advertisement communicates a message that is obviously false or cannot possibly be true. In other cases, especially challenges to literal claims whose meaning is not disputed, the central contest in the case is whether the claim communicated by the advertisement is true, false, or has an unknown truth status. (Note, by the way, that "misleading" is not a truth-status category like "true" or "false;" it is a shorthand for "implies a false claim," as opposed to literally false.)

To review some basic advertising law, in government enforcement actions and self-regulatory challenges, the ultimate burden is on the advertiser to substantiate its claims. If the claim is false or if its true/false status is unknown, the advertiser is in the wrong. It is the advertiser, then, that must come up

with evidence of the claim's truthfulness, although the other side may strengthen its case or refute the advertiser's substantiation with evidence of its own that the claim is false or at least unsubstantiated. In private litigation challenges, the plaintiff has the ultimate burden of disproving the advertising claim, and if the true/false status of the claim is not resolved by a preponderance of the evidence either way, the advertiser is not liable. So the plaintiff will need evidence that the claim is false, and again, the advertiser may retort with its own evidence.

Of the experts used in an advertising case, substantiation experts are the most diverse because the means necessary to confirm or disprove an advertising claim are almost infinitely varied. Sometimes the appropriate method is very close to that of a consumer perception survey, such as when the advertising claim is made about consumer preferences, money saved, or some other attribute that is measured by self-reporting from consumers. Other claims require highly technical testing with specialized apparatus. Others may require sensory testing of human subjects. Some appropriate substantiation tests are creative and downright funky. In almost all cases, an expert witness will be needed to satisfy the requirements of the court or other forum that the evidence presented, whether for or against the claim, is competent and reliable.

The Damages Expert: What Did the False Ad Cost Consumers?

Damages experts are the most pervasive in all litigation. They generally are not needed in self-regulatory challenges and used to be rare in government enforcement cases when these actions were primarily about injunctive relief, but in recent years, as the Federal Trade Commission has more often sought Section 13(b) equitable monetary relief and state Attorneys General also have been looking for restitution, expert evidence is needed to quantify and dispute these proposed awards. In class action cases, the damages expert must get involved in the case early, since the U.S. Supreme Court held in *Comcast v. Behrend*[1] that class plaintiffs must demonstrate a viable model for estimating class damages at the class certification stage.

There are a few standard models for estimating damages, depending on the facts of the case. Traditionally, especially in Lanham Act cases, economists are retained to probe the parties' revenue and profitability data looking for either an increase in the advertiser's profits associated with the advertising claim (either through greater sales or increased prices), or a drop in the challenging competitor's revenues reflecting sales diverted because of the false advertising. Recently in class actions, more creative techniques involving other kinds of social science experts have been employed. Variations on the technique of choice-based conjoint analysis, which attempts to deconstruct the prices consumers will pay for a product into the product's various attributes, alone or in combination with other economic or statistical models, currently are in vogue for class-action damages estimation. Unlike the traditional economic regressions used in competitor-on-competitor cases and many other kinds of litigations, these conjoint-based techniques are not as standardized, and we are in the midst of a dialogue between courts and the expert community on which research designs satisfy *Comcast* and subsequent authority. In the class-action context it is especially important to retain an expert who is up-to-date on this dialogue.

How to Select an Expert Witness

Key Qualifications

The expert witness's key asset, both for informing the court and for advancing the interests of the client, is *credibility*. Social psychologists have analyzed a person's credibility as consisting of two components, *knowledge* and *trustworthiness*.[2] Knowledge, or expertise, is the witness's ability to speak truthfully and accurately about the subject of testimony, and derives from the witness's education, experience, credentials, and investigation of the subject at hand. Trustworthiness is the likelihood that the witness will testify without bias, and derives from the witness's independence, freedom from apparent self-interest, and personal integrity. These elements of credibility are applicable to anyone who speaks in a courtroom, but most fact witnesses and attorneys are clearly partisan and have to strive for as many knowledge points as possible while displaying enough integrity to salvage some trustworthiness. Expert witnesses have the opportunity to score high on both dimensions.

Expertise starts with the expert witness's "knowledge, skill, experience, training, or education," as Rule 702 puts it. The relevant training can range

from graduate degrees from prestigious universities to hands-on, real-world experience. Courts are flexible in this regard, but also deferential to professional standards. To qualify as an expert in "general automotive knowledge," as Marisa Tomei's character did in *My Cousin Vinny* (1992), working for years in a garage may suffice. For other fields, the self-taught approach would not work unless experts in the field considered it a reasonable way to gain expertise. Credentials such as faculty appointments, publications, honors and awards contribute to an expert's perceived expertise. Sometimes, judges read jurors an introduction to the expert witness summarizing the qualifications, which can greatly impress the jury.

The other aspect of expertise is the investigation that the expert witness has done to prepare to speak to the facts and issues of the particular case, but this comes into play after the expert is selected.

Trustworthiness is established in part by the expert witness's separation from the party and its affiliates. Although expert witnesses are sometimes drawn from or closely related to the party, this should be done only when they are the most knowledgeable witness available with the understanding that a penalty will be paid in perceived independence. Adversaries can be expected to probe an expert witness's history of prior consulting and litigation work for the party and attorneys, the rate being paid for the expert's services, and any other issues that could contribute to the perception that the expert's objectivity is compromised. Often, however, these attacks are less effective than the opposing attorney hopes. Judges and juries tend to be skeptical of the idea that a credentialed, respected professional witness of apparent personal integrity can be influenced so easily.

The personality and demeanor of the expert witness, and especially the ability to convey both knowledge and integrity, is the final essential ingredient. Again, these are important for any witness, but with experts, the party gets to shop, whereas with fact witnesses it is limited to the pool of people with personal knowledge of the issues. There are many ways for an expert to be able to connect with judges and jurors. They may be approachable or aloof, formal or casual, a gray eminence or a new hot-shot. Interviewing the expert witness to learn if he or she has a style that works is crucial.

Finally, the expert witness should honestly and fully agree with the position he or she is being asked to support, and if possible, with the rest of the client's litigation position. An expert who has to be persuaded of the position, or who comes only partly on board and has to skirt certain topics, is a mine field. There *are* expert witnesses who will adopt almost any position for the sake of a gig. These experts generally cannot deliver that position with conviction. It is far better to locate an expert whose support of your position is sincere. If no such qualified expert can be found, expert witness selection may not be your biggest problem.

Levels of Litigation Experience

Expert witnesses can be divided roughly into three different experience levels. From least to most experienced, they are the amateur, the dilettante, and the professional. Note that these terms denote their experience in participation in legal proceedings; as far as experience in their area of expertise is concerned, they should almost always be professionals! Each of these litigation experience levels comes with its own advantages and disadvantages. Painting with a very broad brush, here are profiles of the three levels.

The amateur has never appeared in a litigation. The amateur expert witness often is found in areas of expertise that seldom arise in litigation, so that there is no community of repeat expert witnesses. Several years ago, for example, I was defending an antitrust case alleging bid-rigging at certain auctions, and had to locate an economic expert on auction processes who would testify that the process of our particular auction did not promote bid-rigging. My witness was a professor from a small college who had never testified before. Amateur expert witnesses usually are high-maintenance. They need to be taught many things, and either come with no backup personnel or backup personnel as inexperienced as they are, such as graduate assistance from their colleges. Even after extensive training, they may be prone to mistakes when testifying. But they have several advantages. Being new to the litigation process and not in it for steady money, they may show genuine commitment and infectious enthusiasm. Even their mistakes and nervousness may endear them to the judge or jury when contrasted with more polished experts. They are unsullied by past litigation positions or by the

perceived taint of being a gun-for-hire. A good amateur, used well, can be as effective as any expert witness, even though the uncertainty around their performance can stress their counsel and clients. More to the point, in some obscure fields, they are the only game in town.

At the other extreme, the professional expert witness derives regular income from testifying and has appeared in dozens or hundreds of cases. Often the pro has founded or works at a research consulting firm specializing in litigation, with a trained staff for backup and to supply ancillary capabilities such as graphic aids. This enables the expert witness to work very efficiently, although the number of people and hours that the consulting firm can throw at an expert process can run up bills quickly. From a full-time professional witness, counsel (*i.e.*, the witness's client) can expect full, sustained attention, fast work, polished written work product, and comfort and familiarity with the litigation process. Often the expert and backup staff have learned enough law over the course of legal engagements that they know the exact parameters set up by courts for valid expert evidence and can even quote legal authority in their expert reports, although this is not always advisable. On the other hand, a long history of involvement in litigation is not always optically a good thing. Juries, in particular, may distrust a professional witness, and in a long history of reports and testimony on similar topics, there may be a prior inconsistent conclusion or a stinging rebuke of the expert's work by a previous court that the adversary can use to undermine credibility.

The dilettante has worked in litigation occasionally, from once to several times before. Dilettantes have a primary professional occupation and testify occasionally when asked, when time permits, and to pick up some extra income. They combine, in diluted form, the strengths and weaknesses of both the amateur and professional witness. Generally, these witnesses have enough of a track record and are secure enough in the deposition and testifying process to keep counsel's Xanax consumption in check. Having day jobs, however, they may not be as available or responsive as professionals. In an era where university students complain that they rarely see their professors and that graduate assistants teach all of their courses, it sometimes seems to attorneys that they have hired the last professor in America who holds lecture sacrosanct and refuses to cut a class to appear at trial. Finally, the dilettante expert has an effective defense against the charge often leveled at professionals, of being a hired gun whose livelihood depends on enthusiastically adopting any position the client desires.

★ ★ ★

The second part of this article will appear in an upcoming issue of the *Intellectual Property & Technology Law Journal*.

Notes

1. Comcast v. Behrend, 133 S.Ct. 1426 (2013).
2. *See, e.g.*, K.S. Bordens & I.A. Horowitz, Social Psychology (2d ed. 2012) at 195.

IPR Estoppel: District Courts Are Questioning the Reasoning of *Shaw* but Are Compelled to Follow It

By Jonathan R. Bowser

Challenging the validity of a patent in an *inter partes* review (IPR) or post-grant review (PGR) does not come without risk. If the petitioner is unsuccessful in proving that the challenged claims of a patent are unpatentable, the petitioner is estopped from challenging those claims on any ground of challenge that the petitioner "raised or reasonably could have raised during" the instituted IPR or PGR.[1] Different estoppel standards have developed in the Patent Trial and Appeal Board (PTAB) and the district courts after the U.S. Court of Appeals for the Federal Circuit's decision in *Shaw Industries Group, Inc. v. Automated Creel Systems, Inc.*[2]

Federal Circuit's Reasoning in *Shaw*

In *Shaw*, the Federal Circuit held that an IPR petitioner was not estopped from raising a ground of challenge at the district court or in a later IPR proceeding when that ground of challenge was presented in an IPR petition but was denied institution as being "redundant" to the grounds of challenge that the PTAB instituted for review. The panel of the Federal Circuit reasoned that the petitioner could "not raise—nor could it have reasonably raised—the [non-instituted] ground *during* the IPR," because "[an] IPR does not begin until it is instituted."[3]

Consistent with the reasoning in *Shaw*, the PTAB and district courts similarly have denied estoppel claims for grounds of challenge that were presented to the PTAB in an IPR petition but were denied institution.[4]

Jonathan R. Bowser is counsel at Buchanan Ingersoll & Rooney PC, focusing his practice on intellectual property law, with a special emphasis on *inter partes* matters before the Patent Trial and Appeal Board, in federal courts, and before the U.S. International Trade Commission. He may be reached at *jon.bowser@bipc.com*.

Extension of Estoppel Ruling in *Shaw*

However, some district courts arguably have extended the rationale in *Shaw* when addressing the scope of estoppel for grounds of challenge that "reasonably could have [been] raised" during an instituted IPR. In *Intellectual Ventures I v. Toshiba Corp.*,[5] and *Verinata Health, Inc.* v. *Ariosa Diagnostics, Inc.*,[6] district courts held that, based on the rationale in *Shaw*, the defendants were not estopped from raising grounds of challenge based on publicly available prior art that the defendants could have presented in IPR petitions but did not do so. In *Intellectual Ventures*, the court criticized the reasoning in *Shaw* but indicated that it was compelled to follow *Shaw* despite its reservations.[7]

The extension of estoppel to grounds of challenge that were not presented in an IPR petition goes beyond the Federal Circuit's discussion of estoppel in *Shaw*. In *Shaw*, the Federal Circuit's decision addressed whether a petitioner would be estopped from raising grounds of challenge that were denied institution by the PTAB.[8] Shaw had petitioned for a writ of mandamus to compel the PTAB to institute the non-instituted ground of challenge. Shaw argued that "it may be estopped from arguing the [non-instituted] ground in any future proceedings."[9] In rejecting Shaw's mandamus petition, the Federal Circuit explained that Shaw would not be estopped from raising the non-instituted ground in another proceeding, because Shaw could not raise the non-instituted ground "*during* the IPR" since the PTAB denied institution for that ground.[10] Thus, in *Shaw*, the Federal Circuit did not consider the issue of whether a petitioner should be estopped from raising grounds of challenge that the petitioner chose not to present in its IPR petition. The decisions in *Intellectual Ventures* and *Verinata* have thus extended the rationale in *Shaw* to preclude the application of estoppel to

grounds of challenge that the petitioner could have presented in an IPR petition but did not do so.

Recent District Court Criticism of *Shaw*

In *Douglas Dynamics, LLC v. Meyer Products LLC*, the court extended estoppel under Section 315(e)(2) to grounds of challenge that the defendant could have presented in its IPR petition but chose not to do so, in addition to instituted grounds of challenge that the PTAB held were insufficient to prove the challenged claims unpatentable.[11] In doing so, the court criticized the Federal Circuit's reasoning in *Shaw*, arguing that "*Shaw*'s narrow view of § 315(e) estoppel undermines the purported efficiency of IPR, especially if it were applied to allow post-IPR assertion of non-petitioned grounds."[12] The court explained that limiting estoppel to only those grounds of challenge that were denied institution by the PTAB was contrary to Section 315(e) and "the legislative history, which clearly suggests that Congress intended IPR to serve as a complete substitute for litigating validity in the district court."[13] The court reasoned that:

> [a] patent infringement defendant does not have to take the IPR option; it can get a full hearing of its validity challenge in district court. If the defendant pursues the IPR option, it cannot expect to hold a second-string invalidity case in reserve in case the IPR does not go defendant's way. In many patent cases, particularly those involving well-developed arts, there is an abundance of prior art with which to make out an arguable invalidity case, so it would be easy to have a secondary set of invalidity contentions ready to go. The court will interpret the estoppel provision in § 315(e)(2) to preclude this defense strategy.[14]

Accordingly, the court in *Douglas Dynamics* held that the defendant was estopped from raising invalidity grounds that it could have presented in its IPR petition but chose not to do so.[15] The court explained that it "will apply § 315(e)(2) estoppel to grounds not asserted in the IPR petition, so long as they are based on prior art that could have been found by a skilled searcher's diligent search."[16] Thus, the court held that the defendant was estopped from asserting (1) the instituted grounds of challenge that the defendant unsuccessfully raised "during" the IPR, and (2) the grounds of challenge that the defendant could have presented in the IPR petition based on publicly available prior art but chose not to do so.[17] The court held that the defendant was not estopped from asserting grounds of challenge that the defendant asserted in its IPR petition but that were denied institution, explaining that "until *Shaw* is limited or reconsidered, this court will not apply § 315(e)(2) estoppel to non-instituted grounds."[18]

In *Douglas Dynamics*, the court also disagreed with "*Shaw*'s interpretation of the term 'during' in § 315(e)."[19] The court explained that "*Shaw* does not satisfactorily reconcile the narrow interpretation of 'during' with the broader language 'reasonably could have raised.' What are the grounds that the petitioner 'reasonably could have raised' if the petitioner is limited to raising them after review is instituted, when the opportunity to assert new grounds is exceedingly limited? The more reasonable interpretation is that 'during that *inter partes* review' includes not only the instituted review itself but also the petition process."[20]

Conclusion

The court's decision in *Douglas Dynamics* is contrary to the decisions in *Intellectual Ventures* and *Verinata*, where the defendants were not estopped from asserting invalidity contentions that they could have asserted in the corresponding IPR petitions. The Federal Circuit likely will need to clarify the scope of estoppel under Section 315(e)(2) to address the inconsistencies developing in the district courts. Until that time, petitioners before the PTAB may wish to consider presenting multiple grounds of challenge in one or more petitions to preserve the ability to later pursue any grounds of institution that may be denied institution. Under *Shaw*, district courts have consistently precluded the application of estoppel to non-instituted grounds of challenge that are presented in an IPR petition. However, as demonstrated by the aforementioned cases, there is a wide variance between district courts' interpretation of the scope of "reasonably could have [been] raised" estoppel for grounds of challenge that are not presented in an IPR petition. The court's decision in *Douglas Dynamics* may be an outlier, but it would be imprudent to assume that it is.

Notes

1. *See* 35 U.S.C. §§ 315(e)(1)-(2), and 325(e)(1)-(2). Estoppel also extends to the petitioner's real party-in-interest and any privies of the petitioner.
2. Shaw Indus. Group, Inc. v. Automated Creel Systems, Inc., 817 F.3d 1293, 1300 (Fed. Cir. 2016).
3. *Id*. (*citing* In re Cuozzo Speed Techs., LLC, 793 F.3d 1268, 1272 (Fed. Cir. 2015)); *see also* HP Inc. v. MPHJ Tech. Invs., LLC, 817 F.3d 1339, 1347 (Fed. Cir. 2016) (*citing* the *Shaw* decision, the Federal Circuit held that "the noninstituted grounds do not become a part of the IPR. Accordingly, the noninstituted grounds were not raised and, as review was denied, could not be raised in the IPR.").
4. *See, e.g.,* Apotex Inc. v. Wyeth LLC, IPR2016-00873, Paper 8 at 8-9 (PTAB Sept. 16, 2015) (holding that estoppel under 35 U.S.C. § 315(e)(1) does not apply to grounds of challenge that were denied institution); Depomed, Inc. v. Purdue Pharma L.P., No. 13-571, Mem. Op. Dkt. 238 at 15-16 (NJD Nov. 4, 2016) (Bongiovanni, MJ) (holding that the defendant was not estopped from challenging the validity of claims 11 and 12 before the district court because the PTAB denied institution for the grounds of challenge asserted against claims 11 and 12 in IPR petitions).
5. Intellectual Ventures I LLC v. Toshiba Corp., 1-12-cv-00453, 2016 WL 7341713 at *12-13 (D. Del. Dec. 19, 2016) (Robinson, DJ).
6. Verinata Health, Inc. v. Ariosa Diagnostics, Inc., 12-cv-05501-SI, 2017 WL 235048 at *4 (N.D. Cal. Jan. 19, 2017 (Illston, DJ).
7. *Intellectual Ventures*, 2016 WL 7341713 at *13 ("Although extending [*Shaw*'s] logic to prior art references that were never presented to the PTAB at all (despite their public nature) confounds the very purpose of this parallel administrative proceeding, the court cannot divine a reasoned way around the Federal Circuit's interpretation in *Shaw*.").
8. *Shaw*, 817 F.3d at 1300.
9. *Id*. at 1299.
10. *Id*. at 1300 (emphasis original).
11. Douglas Dynamics, LLC v. Meyer Prods. LLC, 14-cv-886-jdp, 2017 WL 1382556 at *4-*5 (W.D. Wisc. Apr. 18, 2017) (Peterson, DJ).
12. *Id*. at *4.
13. *Id*. (*citing* SAS Inst., Inc. v. ComplementSoft, LLC, 825 F.3d 1341, 1354 (Fed. Cir. 2016) (Newman, J., dissenting).
14. *Id*. at *4.
15. *Id*.
16. *Id*. at *5.
17. *Id*.
18. *Id*.
19. *Id*., n.2.
20. *Id*.

Wolters Kluwer

Wolters Kluwer
Intellectual Property & Technology Law Journal
Distribution Center
7201 McKinney Circle
Frederick, MD 21704

October/10041448-0100