IN THE SUPREME COURT OF TEXAS

NO. 09-0039

BIC PEN CORPORATION, PETITIONER,

v.

JANACE M. CARTER, AS NEXT FRIEND OF BRITTANY CARTER, RESPONDENT

ON PETITION FOR REVIEW FROM THE
COURT OF APPEALS FOR THE THIRTEENTH DISTRICT OF TEXAS

Argued March 23, 2010

JUSTICE JOHNSON delivered the opinion of the Court.

JUSTICE GREEN did not participate in the decision.

Six-year-old Brittany Carter was burned when her five-year-old brother accidently set fire to her dress with a BIC lighter. The trial court entered judgment against BIC based on jury findings that the lighter was defectively designed and manufactured and that each of the defects caused Brittany's injuries. The court of appeals affirmed based on the defective design finding and did not reach BIC's other issues. *BIC Pen Corp. v. Carter*, 171 S.W.3d 657, 662 (Tex. App.—Corpus Christi 2005), *rev'd* 251 S.W.3d 500 (Tex. 2008). In a prior appeal we held that the design defect claim was preempted by federal law and remanded the case to the court of appeals. *BIC Pen Corp. v. Carter*, 251 S.W.3d 500, 511 (Tex. 2008). The court of appeals then affirmed the trial court's judgment based on the manufacturing defect finding. ___ S.W.3d ___.

We conclude that no evidence supports the finding that a manufacturing defect caused Brittany's injuries. We reverse and render judgment for BIC.

I. Background

Jonas Carter and his sister Brittany were playing when Jonas accidently set fire to Brittany's dress with a J-26 model BIC lighter (the Subject Lighter). Brittany was badly burned and Janace Carter, Brittany's mother, sued BIC as Brittany's next friend. Janace claimed that Brittany's injuries were the result of manufacturing and design defects in the Subject Lighter. A jury found that both types of defects were producing causes of Brittany's injuries. The trial court rendered judgment against BIC for actual and exemplary damages found by the jury. BIC appealed and the court of appeals affirmed. *BIC Pen*, 171 S.W.3d at 662. The appeals court held, in part, that the design defect claim was not preempted by federal law and the evidence was sufficient to support the finding that a design defect in the lighter was a producing cause of the fire that burned Brittany. *Id.*

We granted BIC's petition for review, held that the design defect claim was preempted by federal law, and remanded the case for the court of appeals to consider the remaining issues. *BIC Pen*, 251 S.W.3d at 511. On remand the court of appeals concluded that Carter's manufacturing defect claim was not preempted by federal law, the jury's finding on that claim was supported by the evidence, the trial court did not err by giving a spoliation instruction, and there was no evidence BIC acted with malice. ___ S.W.3d at ___. The appeals court affirmed the trial court's judgment as to actual damages and reversed and rendered as to exemplary damages. *Id.*

BIC again petitioned for review, asserting that (1) Carter's manufacturing defect claim is preempted by federal law, and (2) Carter did not prove a manufacturing defect caused Brittany's

injuries because there was no evidence (a) that the lighter varied from manufacturing specifications, (b) that the lighter was unreasonably dangerous, or (c) of causation. Carter filed a conditional petition for review, arguing that the court of appeals erred in reversing the award of punitive damages.

We conclude that Carter's manufacturing defect claim is not preempted by federal law. We further conclude, however, that the evidence is legally insufficient to support the finding that a manufacturing defect caused Brittany's injuries.

We first address BIC's assertion that Carter's manufacturing defect claim is preempted.

II. Preemption

A state law that conflicts with federal law is preempted and has no effect. U.S. CONST. art. VI, cl. 2; *Maryland v. Louisiana*, 451 U.S. 725, 747 (1981); *BIC Pen*, 251 S.W.3d at 504. State law may be preempted in three ways: (1) expressly, by a federal law specifically preempting state law; (2) impliedly, by the scope of a federal law or regulation indicating Congress intended the federal law or regulation to exclusively occupy the field; or (3) impliedly, by the state law conflicting with a federal law or regulation to the extent it is impossible to comply with both or by the state law obstructing Congress's objectives as reflected by the federal law. *BIC Pen*, 251 S.W.3d at 504.

A. Federal Standards

In 1972, the Consumer Product Safety Act (CPSA) created the Consumer Product Safety Commission (CPSC). The CPSC is an independent regulatory body charged with (1) protecting the public against unreasonable risks of injury associated with consumer products, (2) developing safety standards for consumer products, and (3) promoting research and investigation into the cause and

prevention of injuries. 15 U.S.C. §§ 2051(b)(1), (b)(2), (b)(4), 2053(a); *BIC Pen*, 251 S.W.3d at 503. As relevant to this matter, the CPSC analyzed costs and benefits to the public of requiring disposable lighters to be child resistant. It then adopted regulations requiring disposable lighters to be child resistant as to children under five years of age and standards for certifying lighters as child resistant. *BIC Pen*, 251 S.W.3d at 503; 16 C.F.R. § 1210.1. The CPSC does not impose design requirements on manufacturers. Rather, the child-resistance requirements are performance based so the burden is on manufacturers to design lighters that comply with the performance standards. *BIC Pen*, 251 S.W.3d at 504 (citing Safety Standard for Cigarette Lighters, 58 Fed. Reg. 37,580-81 (July 12, 1993) (codified at 16 C.F.R. pt. 1210)). Before a lighter may be distributed, the manufacturer must submit a detailed description of the lighter and its child resistant features to the CPSC and the lighter must be certified. 16 C.F.R. § 1210.15.

In order for a lighter such as BIC's J-26 to be certified as child resistant, CPSC requires that tests be performed to determine the extent to which children under five years of age can operate the lighter. At least eighty-five percent of the children who are tested must be unable to operate it. *BIC Pen*, 251 S.W.3d at 504; 16 C.F.R. § 1210.4(h)(1).

The CPSC regulations require a specific testing protocol to be followed for a lighter to be certified as child resistant. Before testing is begun, measurements are taken to ensure that all operating components on which child resistance is dependent are within designed tolerances. 16 C.F.R. § 1210.4(c)(4). The test protocol then begins with a panel of one hundred children ages forty-two to fifty-one months being divided into six groups of fifteen to seventeen children. The children on each panel must consist of three age groups: forty-two to forty-four months, forty-five to forty-

eight months, and forty-nine to fifity-one months, with approximately thirty, forty, and thirty percent of the children to be of the respective age groups. *See id.* § 1210.4. Each group uses one of six surrogate lighters that look like actual lighters, but emit signals rather than flames when operated. *Id.* Each child is given two five-minute attempts to operate the lighter being tested. If no more than ten of the children on the first test panel operate the lighter, the lighter is certified as child resistant and no further testing is necessary. *Id.* § 1210.4 (h)(1). If more than ten children on the first panel operate the lighter, however, another panel of 100 children is tested. *Id.* If no more than thirty of the 200 children on the two panels operate the lighter, it is certified as child resistant and no further testing is required. *Id.* § 1210.4(h)(2).

B. The J-26 Lighter

To operate a J-26 lighter, the user must press a shield over the sparkwheel and rotate the sparkwheel to generate a spark while pressing a fork near the sparkwheel to release fuel. In 1995, BIC reported to the CPSC that testing had been conducted on the J-26 and ninety percent of the children tested could not operate the surrogate lighters. The report set out specifications for the J-26's five components[1] that collectively resulted in the lighter being child-resistant: (1) the distance that the shield over the sparkwheel must be pushed down, (2) the force required to move the shield; (3) the distance the fork must move to release butane; (4) the force required to depress the fork; and (5) the force required to produce a spark by rotating the sparkwheel. Carter's manufacturing defect

[1] The report could be read to list six components. The parties reference five components and we will use their representations.

claim was that two components of the Subject Lighter, the shield force and the fork force, deviated from specifications BIC furnished to the CPSC.

In BIC's previous appeal, we noted that the savings clause in the CPSA allows state-law tort claims so long as they do not conflict with applicable federal regulations. *BIC Pen*, 251 S.W.3d 506. On that basis, we held Carter's design defect claim was preempted because the design of the J-26 was properly certified according to federal protocol, and state law imposing a higher common-law standard for child resistance would conflict with the federal regulations. *Id.* at 509. BIC asserts that Carter's manufacturing defect claim is similarly preempted because the imposition of manufacturing defect liability based on a product that complies with federal manufacturing requirements would impose a more strict standard than federal law.

C. Do Carter's Claims Impose a Higher Requirement

BIC argues that Carter's manufacturing defect claim effectively imposes a higher child-resistant standard than the CPSC standard because (1) the CPSC standard applies only to children under age five while Jonas was over age five and (2) the CPSC standards do not apply to children such as Jonas who are five years old or older, even if they suffer developmental delays. We disagree with the argument.

Carter's manufacturing defect claim is not based on whether the lighter would be child resistant as to older children in general, or even older children with developmental delays. Her claim is that BIC failed to manufacture the lighter to the specifications BIC submitted to the CPSC, the resulting manufacturing defect lessened the force required to operate the Subject Lighter, and the lighter was unreasonably dangerous because the defect reduced the force required to operate the

lighter. Thus, her claim that Jonas would not have been able to light the Subject lighter if BIC had manufactured it according to the specifications submitted to the CPSC does not add to the federal requirements for child resistant status.

BIC also asserts that the jury charge allowed the jury to decide—contrary to federal law—that no child of any age should be able to operate a lighter. BIC points to Carter's counsel's arguments during trial such as "if the cigarette lighter is supposed to be child-resistant, how was he able to use it," and claims that the jury was allowed to impose liability "merely because a 62-month old child was able to operate the Subject Lighter." BIC's argument has traction. However, we believe the argument does not implicate preemption; rather, it is directed toward the evidence and the jury instruction defining "unreasonably dangerous product" to which BIC did not object.

BIC also submits that the court of appeals held that the jury was entitled to assume the lighter deviated from BIC's internal specifications, which were more strict than specifications it submitted to the CPSC and, based on that assumption, the jury could have concluded that deviations from BIC's internal specifications resulted in a manufacturing defect. BIC asserts this conflicts with federal law by holding BIC liable for failing to meet internal goals that exceeded specifications it submitted to the CPSC. We do not agree.

The court of appeals held that "there was sufficient evidence adduced for the jury to have concluded that the 1995 [CPSC-submitted] specifications applied and that the Subject Lighter deviated from those specifications." ___ S.W.3d at ___. Although the court went on to discuss whether BIC failed to comply with its internal manufacturing specifications, the court noted that evidence of BIC's failure to comply with its internal specifications was an alternative basis for the

jury to have found liability. Carter's claim is not preempted simply because the court of appeals found an alternative ground for liability, and we need not determine whether a claim based solely on BIC's failure to comply with its internal specifications would be preempted.

BIC next asserts that in order for Carter's claim not to have been preempted, she was required to prove that the lighter failed to meet BIC's specifications to the extent it would not pass the eighty-five percent CPSC child testing protocol. BIC argues that imposing liability without such a showing would allow recovery for a variance from manufacturing specifications even if the lighter exceeded the performance-based CPSC mandated testing. This argument also fails. Under the court's charge, Carter was required to prove that a manufacturing variance was of such degree that it was a "defect" as defined in the jury charge, not that the lighter was child resistant. "Defect" was defined as "dangerous to an extent beyond that which would be contemplated by the ordinary user of the product with the ordinary knowledge common to the community as to the product's characteristics."

Finally, BIC claims that Carter's use of data regarding one particular surrogate lighter (surrogate 5) that was used by sixteen children in the J-26 testing is inconsistent with federal standards that require testing of 100 children. BIC asserts that to the extent Carter's claim is supported by this data, it obstructs the federal objectives and is preempted. But Carter presented the surrogate 5 data to demonstrate the effect of low force requirements on the ability of children to operate the J-26. A state law claim is preempted under the obstruction of federal objectives aspect of preemption analysis when state law imposes duties that conflict with the federal regulatory scheme. *BIC Pen*, 251 S.W.3d at 509. Carter's use of the surrogate 5 data was not an attempt to

impose a duty inconsistent with the federal regulatory scheme, and her use of the data does not form a basis for holding the manufacturing defect claim was preempted.

We conclude that Carter's manufacturing defect claim was not preempted and next address BIC's challenge to the jury's finding that there was a manufacturing defect in the Subject Lighter.

III. Manufacturing Defect

A manufacturing defect exists "when a product deviates, in its construction or quality, from the specifications or planned output in a manner that renders it unreasonably dangerous." *Id.* (quoting *Cooper Tire & Rubber Co. v. Mendez*, 204 S.W.3d 797, 800 (Tex. 2006)). First, BIC claims that Carter did not present any evidence of a deviation from manufacturing specifications. We disagree.

In 1995, BIC submitted specifications for child resistant features of the J-26 to the CPSC. Two years later it made design modifications to the lighter and submitted new specifications. BIC asserted in the court of appeals that the 1997 specifications, and not the 1995 specifications, applied to the Subject Lighter and the results of the Subject Lighter's tests could not support a finding that it was outside manufacturing specifications. The court of appeals held that there was sufficient evidence for the jury to have concluded that the 1995 specifications applied, and BIC does not challenge that holding here. *See* ___ S.W.3d ___. Rather, BIC asserts that the testing methods to determine compliance with the CPSC specifications in 1997 were different from the testing methods used in 1995, and the specifications BIC submitted to the CPSC did not set out the testing protocol. BIC claims that (1) when it performed the post-accident testing of the Subject Lighter it used 1997 testing methods so those test results were invalid to measure compliance with the 1995

specifications; and (2) the specifications it submitted to the CPSC were expressed as approximate ranges and even the post-accident testing showed that the subject lighter "approximately" complied with specifications. But BIC fails to address Carter's evidence to the contrary.

After Carter filed suit, BIC twice tested and measured the child-resistant features of the Subject Lighter. The specifications submitted to the CPSC in 1995 and the results from BIC's post-accident tests of the Subject Lighter's fork force and sparkwheel force were as follows:

	1995 Specifications	Post-accident Test 1	Post-accident Test 2
Fork Force	.4-.6 kg[2]	.353 kg	.349 kg
Sparkwheel Force	1.0-1.7 kg	.975 kg (Average)	.962 kg (Average)

In regard to the fork force testing, Carter presented evidence that the testing protocol BIC used in the post-accident test was actually used as early as 1994 when the 1995 specifications were developed. As for the sparkwheel force testing, Carter presented expert testimony that the post-accident measurements of the sparkwheel rotation force were consistent with the 1995 testing protocol, and the measurements were not within specifications. And with regard to BIC's assertion that the lighter showed "approximate" compliance with the specifications, Carter presented expert testimony that rounding measurements to meet specifications in the manner BIC described was unreasonable, even if the specifications themselves were designated as approximate. BIC does not challenge Carter's evidence or her expert's conclusions.

[2] One kilogram equals 2.2 pounds, or 35.3 ounces.

We conclude that Carter presented legally sufficient evidence that the subject lighter did not meet manufacturing specifications.

IV. Causation

BIC claims that even if the Subject Lighter deviated from specifications, Carter failed to prove that the deviation was a producing cause of Brittany's injuries. We agree.

The jury charge asked whether there was a manufacturing defect in the Subject Lighter "that was a producing cause of the occurrence in question." "Producing cause" was defined as "an efficient, exciting or contributing cause that, in a natural sequence, produced the occurrence."[3] A producing cause must be a cause-in-fact; that is, it must be a substantial factor in bringing about the injury, and a cause without which the injury would not have happened. *See Union Pump Co. v. Allbritton*, 898 S.W.2d 773, 775 (Tex. 1995) (noting that producing cause must be a cause-in-fact which "means that the defendant's act or omission was a substantial factor in bringing about the injury which would not otherwise have occurred").

The court of appeals noted that "the jury may determine causation based on circumstantial evidence." ___ S.W.3d at ___ (citing *Ford Motor Co. v. Ridgeway*, 135 S.W.3d 598, 601 (Tex. 2004)). Although we do not disagree generally with that statement, we disagree with how the court of appeals applied it in this case. The court of appeals' opinion was to the effect that the evidence at trial showed Jonas was playing with the Subject Lighter when he accidently caught Brittany's dress on fire; the Subject Lighter did not meet BIC's child-resistance specifications; and "[a]

[3] After the case was tried we held that "producing cause" should be defined as "a substantial factor in bringing about an injury, and without which the injury would not have occurred." *Ford Motor Co. v. Ledesma*, 242 S.W.3d 32, 46 (Tex. 2007).

reasonable finder of fact could infer from the circumstances of the case that the Subject Lighter's defect was a substantial cause of Brittany's injuries and that such injuries would not have occurred if the Subject Lighter complied with BIC's specifications." *Id.* However, evidence that components of a product deviated from manufacturing specifications, an accident occurred, and the deficient parts were involved in the accident is insufficient evidence to support a causation finding. *See Ledesma*, 242 S.W.3d at 41-42 (noting that the requirement of causation is separate from the requirement that the product deviated from specifications); *Mack Trucks v. Tamez*, 206 S.W.3d 572, 580-81 (Tex. 2006) (holding plaintiffs failed to present evidence of causation in a products liability case where, even assuming a fuel and battery system were defectively designed, there was no evidence a fire started because of the defects); *Volkswagon of Am., Inc. v. Ramirez*, 159 S.W.3d 897, 911 (Tex. 2004). Rather, there must have been some evidence that the fire that burned Brittany started because of the specific manufacturing defects and that absent those defects Brittany's injuries would not have occurred.

Expert testimony is generally required in manufacturing defect cases to prove that the specific defect caused the accident. *Ledesma*, 242 S.W.3d at 42 & n.23; *see Mack Trucks*, 206 S.W.3d at 583 ("Proof other than expert testimony will constitute some evidence of causation only when a layperson's general experience and common understanding would enable the layperson to determine from the evidence, with reasonable probability, the causal relationship between the event and the condition."). The reason is demonstrated by the facts of this case. The J-26 lighter had five child-resistant design features. The deviations from specifications for the Fork Force and Sparkwheel Force—two of the five features—were measured in small quantities. The 1995 minimum

specification for Fork Force was .4 kg and BIC's two post-accident tests of the Subject Lighter yielded readings of .353 kg and .349 kg. Thus, the test differences between the Subject Lighter and the minimum 1995 specification were .047 kg (1.6 ounces) and .051 kg (1.8 ounces). The 1995 minimum Sparkwheel Force specification was 1.0 kg. BIC's two post-accident tests of the Sparkwheel Force yielded readings of .975 kg and .962 kg. The differences between the two Subject Lighter test results and the minimum specification were .025 kg (.88 ounces) and .038 kg (1.34 ounces). In light of the five features that combined to make the lighter child resistant, the impact of the small deviations in two of those features on how the Subject Lighter would have functioned in the hands of a child such as Jonas is not an issue within a lay juror's general experience and common understanding. Therefore, we look to see if there is expert testimony to support the causation finding.

As previously noted, BIC submitted specifications to the CPSC regarding five characteristics of the J-26 that as a whole established compliance with the CPSC's child-resistance requirements. The characteristics were shield force, shield movement, fork force, fork movement, and sparkwheel force. There is no evidence that a lighter's failure to meet any particular one or more of the characteristics by some factor would negate the lighter's compliance with the CPSC requirements. The relationship between the five characteristics was not quantified and there was no determination of which characteristic was the most or least important with regard to those requirements.

BIC's two post-accident measurements of the Subject Lighter's Sparkwheel Force showed an average of .0315 kg (1.1 ounces) below the minimum specification. The post-accident measurements of the Fork Force showed an average of .049 kg (1.7 ounces) below the minimum.

Carter asserts that because the J-26 relied on force to provide child resistance the jury could have concluded that the deviations posed a significantly increased risk to a user of the lighter. But she does not point to evidence that would have guided the jury in determining what impact the small deviations would have had, either independently or when considered in conjunction with the other features. And as previously noted, the impact of the small deviations in two of the five factors designed to affect the Subject Lighter's operability is beyond a lay juror's general experience and common understanding.

Carter asserts that she circumstantially proved the impact of decreased force measurements through evidence of BIC's certification test of the J-26. BIC tested six surrogate lighters and overall only ten percent of the 100 children tested were able to operate the lighters. However, six of the sixteen children (37.5%) who were tested with surrogate 5 were able to operate it, and surrogate 5 had the lowest sparkwheel rotational force of all six surrogates—1.04 kg. This, Carter argues, illustrates the impact of low force measurements. However, this testing failed to demonstrate a causal link between lower sparkwheel force and an increased ability of children to operate the lighter. *See Merrell Dow Pharms., Inc. v. Havner*, 953 S.W.2d 706, 718 (Tex. 1997) (noting that studies showing an association between two matters or facts do not necessarily show a causal relationship between them). Other evidence showed that the number of children who could successfully operate the other five surrogate lighters did not decrease as the sparkwheel force of the other surrogates increased. For example, no children were able to operate surrogate 6 which had the second lowest sparkwheel rotational force of 1.13 kg while one child was able to operate the surrogate lighter with the highest sparkwheel rotational force of 1.49 kg.

Carter asserts that although the test results of the other surrogates do not show a correlation between sparkwheel rotational force and child resistance, such a correlation is not negated because other differences in the child-resistant characteristics also impacted the number of children who could operate the other surrogates. This argument, however, supports BIC's claim that all five child-resistance characteristics worked together to make its lighters compliant with the CPSC requirements. Additionally, in a 1997 test on the redesigned J-26 lighter, only four out of 100 children under the age of five years could operate the surrogate lighters. Although the lighter had been redesigned, it still used a sparkwheel that required rotation in order to generate sparks and the sparkwheel force (measured in the same manner as the force of surrogate 5) for at least one of the 1997 surrogates was less than the sparkwheel force of surrogate 5. The highest number of children who operated one particular surrogate in testing of the redesigned lighter was two.

Even more important than the statistics referenced above is the fact that even a lighter that meets CPSC child-resistant specifications is not intended to be completely inoperable by children, whether they are under or over five years of age. The specifications contemplate that some children less than five years old will be able to operate a lighter certified as child resistant. *See* 16 C.F.R. § 1210.3(a) (providing that a lighter subject to the CPSC requirements "shall be resistant to successful operation by at least 85 percent of the child-test panel"); Safety Standard for Cigarette Lighters, 58 Fed. Reg. 37,557, 37,578 (July 12, 1993) ("A lighter that no child under 5 could operate would likely be very difficult for adults to operate as well. In order for child-resistant lighters to address the risk of injury most effectively, adults must be willing to use them."). Because the lighter is designed so that when it is manufactured to specifications, it still can be operated by some children

even younger than five years of age, Carter had the burden to prove that Jonas probably would not have operated the lighter but for the manufacturing defects, regardless of his age and physical and mental condition. We next address whether she did so.

The witnesses at trial identified several human factors that impacted whether a child could successfully operate the lighters: dexterity, strength, motivation, hand size, and instruction the child received. Some of the J-26 lighter features that BIC identified as contributing to the lighter being child resistant were cognitive based—meaning a user would have to overcome a series of steps to operate the lighter. The cognitive-based characteristics required a user to depress the guard over the sparkwheel, rotate the sparkwheel in the correct direction, and depress the fork. The characteristics of the Subject Lighter that did not meet specifications—Sparkwheel force and Fork force—were not cognitive based, but were force based.

There was evidence that when Jonas was eight years and nine months old he was evaluated at Baylor College of Medicine. He had a normal physical evaluation and "visual perceptual/fine motor tasks at an 8 y/o level; [and] gross motor skills at appropriate age level." A year after the Baylor evaluation Jonas was evaluated by Dr. Mark Blotkey, a board certified child psychiatrist.

Although the Baylor evaluation rated Jonas's visual perceptual/fine motor tasks at an eight year old level, Dr. Blotkey testified that a child with developmental delay characteristics such as Jonas exhibited would have fine motor skill problems. But there was no evidence regarding, for example, Jonas's physical strength or the size of his hands or whether, once he overcame the cognitive-based features of the lighter he would not have been able to turn the sparkwheel or depress the fork had those forces met specifications. Dr. Blotkey testified that Jonas would have been

functioning below his age level at the time of the accident, but he did not explain what that meant in terms of his physical ability to turn the sparkwheel and depress the fork. That is, he did not explain whether either a .0315 kg increased force required to operate the sparkwheel or a .049 kg increased fork force, or both, probably would have prevented Jonas from operating the lighter.

Carter argues that even though Jonas was over the age of five at the time of the fire, his developmental delays would have made him unable to light the lighter if it had been manufactured to specifications. But she did not present evidence regarding what impact Jonas's developmental delays had on his ability to operate the Subject Lighter in its condition. Evidence regarding the effect of the specific manufacturing deviations discovered in the Subject Lighter was necessary to show that but for those deviations, Jonas probably would not have been able to operate the lighter. The Baylor report, Dr. Blotkey's testimony, and other evidence introduced at trial reflected on Jonas's abilities to overcome the cognitive-based characteristics of the lighter. But there was no evidence to show that Jonas's abilities related to the force-based features of the lighter—turning the sparkwheel and depressing the fork—would probably have prevented him from operating the lighter if it had met manufacturing specifications.

Carter also asserts that there is evidence of causation based on this Court's holding in *Havner*, 953 S.W.2d 706. The issue in *Havner* was whether a woman's use of a drug while she was pregnant caused her baby's birth defects. *Id.* at 708. We concluded that properly designed and executed epidemiological studies may support causation in certain types of toxic tort cases if the studies show that there is more than a "doubling of the risk" of the particular injury after exposure to the particular substance. *Id.* at 716-17. Carter argues that the principle behind *Havner*—increased

relative risk may be evidence of causation—should be applied in this case. She references BIC's CPSC certification tests and maintains they illustrate that low force levels in lighters such as the J-26 can quadruple risk. We disagree with her position.

In toxic tort cases, causation is often discussed in terms of general and specific causation. *Id.* at 714. General causation involves whether the substance at issue is capable of causing the injury at issue while specific causation involves whether the substance at issue in fact caused the particular injury at issue. *Id.* While testing can be done in some toxic tort cases to determine specific causation, direct experimentation cannot be done in many instances. *Id.* at 715. Recognizing that in such a situation there is no precise fit between science and legal burdens of proof, we concluded that epidemiological studies showing a doubling of the risk after exposure to a substance may be evidence of causation. *Id.* at 717. We explained, for example, that if the number of people who take a drug and contract a disease is more than double the number of people who contracted the disease but did not take the drug, then it may be statistically more likely than not that a given individual's disease was caused by the drug. *Id.* at 717.

The nature of the injury-causing activities and testing that would have to be done to show causation in this case are not similar to, nor do they pose the practical difficulties posed by, those we considered in *Havner*. In this case, testing of J-26 lighters posed no unreasonable risk of injury to the test subjects as would have been the case if testing of the drug on humans had been performed under the facts of *Havner*. The difference in the situations is shown by the CPSC certification protocols. In such instances, tests are done with surrogate lighters that do not pose a risk of harm to the participating children. And testing was also performed on the Subject Lighter itself that posed

no risk of injury. Thus we decline to adopt a *Havner*-type analysis as to causation in this case where manufacturing defects are the basis for the liability claim.

Because our determination that there was no evidence of causation is dispositive of the appeal, we do not address BIC's contention that there was no evidence the Subject Lighter was unreasonably dangerous.

V. Conclusion

The facts of this case are unfortunate. Nevertheless, we must apply established legal principles in reviewing the parties' positions. In applying those principles, we conclude there is legally insufficient evidence to support the finding that manufacturing defects in BIC's Subject Lighter were a cause-in-fact of Brittany's injuries. We reverse the court of appeals' judgment and render judgment for BIC.

_____

Phil Johnson
Justice

OPINION DELIVERED: June 17, 2011