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Article

\*41 CONTRIBUTORY OR COMPARATIVE: WHICH IS THE OPTIMAL NEGLIGENCE RULE?

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Almost immediately after negligence emerged as a distinct tort in the early nineteenth century, the defense of contributory negligence began to develop in conjunction with it. [\[FN1\]](#) The contributory negligence rule is that when a plaintiff's negligence contributes to the occurrence of an accident, the plaintiff cannot recover damages from a defendant who negligently injures him. [\[FN2\]](#) Thus, even a slightly negligent plaintiff could not recover from a negligent defendant if the plaintiff's negligence proximately caused his own injury. The contributory negligence rule originated in the English case of *Butterfield v. Forrester* [\[FN3\]](#) and was eventually adopted by all fifty states and the District of Columbia.

Over time, each of these jurisdictions created exceptions to the contributory negligence rule. [\[FN4\]](#) The three most significant were the safety statute exception, the greater-degree-of-blame exception and the last clear chance doctrine. [\[FN5\]](#) The safety statute exception provided that a plaintiff's contributory negligence did not bar his recovery if the defendant's negligence consisted of the breach of a statute specifically designed to protect a class of persons unable to protect themselves against defendant's \*42 negligence. [\[FN6\]](#) The greater-degree-of-blame exception provided that a plaintiff's contributory negligence did not bar his recovery if the defendant's conduct was "intentional" or "reckless". [\[FN7\]](#) The doctrine of last clear chance provided that a plaintiff's contributory negligence did not bar his recovery if the negligent defendant had the last clear chance to avoid harming the plaintiff. [\[FN8\]](#)

It is significant to note that the three exceptions described above each allowed the plaintiff to recover his entire damages. The exceptions did not invoke the concept of apportioning damages, as does comparative negligence. [\[FN9\]](#) However, two of the exceptions directly or indirectly required comparing the faults of the parties. For instance, was the defendant more at fault than the plaintiff by being "reckless"? Or was the defendant's opportunity to avoid injuring the plaintiff "clear", implying that the defendant was more at fault? Once it was conceded that a comparison of faults is being conducted, the doctrine of comparative negligence was a logical consequence. In effect, the three exceptions to the contributory negligence rule were transition doctrines. These doctrines ameliorated the harsh results of contributory negligence until comparative negligence was enacted. [\[FN10\]](#)

Under comparative negligence, the contributing negligence of the plaintiff does not necessarily bar recovery. Instead, the plaintiff's recovery is reduced in proportion to the amount of negligence attributable to him. [\[FN11\]](#) In the United States, comparative negligence first took root in the state of Georgia. In the 1860s, the Georgia legislature adopted two statutes, based in part on language from cases decided by the Supreme Court of Georgia, which made minor modifications to the contributory negligence rule. The first statute provided for diminution of damages if a plaintiff was injured by negligent railroad operations. [\[FN12\]](#) The second statute provided that a defendant was not relieved from liability in negligence cases if the \*43 plaintiff's negligence may in some way have contributed to the injury. [\[FN13\]](#) The Supreme Court of Georgia used these two statutes to evolve a general comparative negligence system for the state. [\[FN14\]](#)

The first significant instance of comparative negligence legislation enacted in the United States was the second Federal Employers' Liability Act (FELA) [\[FN15\]](#) of 1908. The Act, which is still the law today, provides that an employee of an interstate railroad carrier would not be totally barred by his own negligence from an action against his employer. Instead, the jury would reduce the employee's damages in proportion to the percentage of his own negligence. During the next sixty

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years, only a few states followed the lead of Georgia and FELA by adopting some form of a comparative negligence statute: Mississippi in 1910 [\[FN16\]](#), Nebraska in 1913 [\[FN17\]](#), Wisconsin in 1931 [\[FN18\]](#), South Dakota in 1941 [\[FN19\]](#), Arkansas in 1955 [\[FN20\]](#) and Maine in 1965 [\[FN21\]](#).

In the late 1960s and early 1970s, prodded by criticisms of the fault system, many jurisdictions adopted comparative negligence. [\[FN22\]](#) Currently forty- six jurisdictions apply comparative negligence. However, they have not adopted a uniform comparative negligence doctrine. Comparative negligence systems can be classified as pure or modified. [\[FN23\]](#) Under pure comparative negligence, a plaintiff's negligence will never bar his recovery. The plaintiff will recover some portion of damages even if he is more negligent than the defendant. Under modified comparative negligence, the plaintiff will not recover any compensation if he is more negligent than (and, in some cases, as negligent as) the defendant.

**\*44** An example will clarify the distinction. Assume there are two automobile collisions in which a plaintiff suffers \$100,000 of damage. In the first collision, the plaintiff is 40% at fault and in the second collision the plaintiff is 60% at fault. The first collision would be resolved the same way in a pure or modified comparative negligence jurisdiction. The plaintiff would receive \$60,000--the amount of his damages minus the percentage of his fault. The second collision would be resolved differently depending upon which system of comparative negligence was in effect. In a pure comparative negligence jurisdiction, the plaintiff would recover \$40,000--the amount of his damages minus the percentage of his fault. However, in a modified comparative negligence jurisdiction, the plaintiff would recover nothing because his fault exceeded that of the defendant.

The jurisdictions adopting modified comparative negligence have developed three different forms thereof. The "slight" negligence rule allows a plaintiff to recover if the plaintiff's negligence is slight compared with that of the defendant. Only South Dakota uses this form of modified comparative negligence. [\[FN24\]](#) All the other modified comparative negligence jurisdictions have adopted either the 50% rule or the 49% rule, depending upon the language in the applicable statute or case. If a jurisdiction's operative language allows comparative negligence as long as the plaintiff's negligence is "not greater than" the defendant's negligence, the plaintiff can be up to 50% negligent and still recover damages. However, if a jurisdiction's operative language only allows comparative negligence as long as the plaintiff's negligence is "not as great as" the defendant's negligence, the plaintiff can only be up to 49% negligent in order to recover damages. This seemingly small difference can have tremendous consequences. Probably the most common jury finding of negligence in jurisdictions applying comparative negligence is the finding that each party was 50% negligent. [\[FN25\]](#)

In 1995, Michigan enacted a hybrid comparative negligence statute combining elements of pure and modified comparative negligence. The statute provides that if the plaintiff is more than 50% at fault, he receives only an apportioned share of economic damages and nothing for intangibles such as pain and suffering. [\[FN26\]](#)

Thus, there are currently six different forms of the contributory or comparative negligence rule in effect in the United States. The contributory negligence rule is still followed in the District of Columbia **\*45** and four states. [\[FN27\]](#) Pure comparative negligence is the law in eleven jurisdictions. [\[FN28\]](#) The "slight" comparative negligence rule is the law in South Dakota. The 49% rule is the law in thirteen jurisdictions. [\[FN29\]](#) The 50% rule is the law in twenty jurisdictions. [\[FN30\]](#) Michigan has adopted a hybrid statute combining elements of pure and modified comparative negligence.

Jurisdictions in the United States have adopted a wide array of rules regarding contributory and comparative negligence. However, as a normative matter, which rule is best? To answer this question, it is necessary to examine the purposes of tort law itself. What, exactly, is tort **\*46** law attempting to accomplish and which rule, contributory or some form of comparative negligence, would best help tort law achieve those goals?

### I. Rationales for the Tort System

The three principal rationales for tort law are deterrence, compensation and corrective justice. [\[FN31\]](#) Deterrence and compensation are utilitarian justifications. A utilitarian justification focuses on how tort law can be used as a tool to further an independent social or public policy goal. Corrective justice focuses on the vindication of individual moral rights. Corrective justice is not based on effects or consequences, as are deterrence and compensation; instead, corrective justice is based on the idea that an act or a framework is right or wrong "in itself". [\[FN32\]](#)

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According to the deterrence rationale, tort law is designed to prevent accidents by threatening potential wrongdoers with civil liability or the inability to recover damages. Thus, for example, a potential wrongdoer will drive more safely because the potential wrongdoer wants to avoid paying money for harm he might otherwise cause. Deterrence proponents seek to ensure that liability rules and associated defenses, such as contributory or comparative negligence, induce both efficient levels of care and efficient levels of activity. [FN33] For purposes of this article, the issue is whether contributory negligence or some form of comparative negligence is more successful in achieving tort law's deterrence rationale of preventing accidents.

According to the compensation rationale, tort law is designed to compensate victims of tortious injury. Proponents of the compensation rationale often view tort law as a form of insurance. They argue that "accident costs should be borne collectively, not individually, and that the tort system should be evaluated in terms of its capacity to spread risk and provide meaningful, expeditious, and low-cost compensation or insurance to the victims of these activities". [FN34] For purposes of this article, the issue is whether contributory negligence or some form of comparative negligence \*47 is more successful in achieving tort law's compensation rationale of compensating victims of accidents.

According to the corrective justice rationale, the tort system is not designed to deter accidents or compensate victims whose misfortune was not caused by the morally culpable conduct of another moral agent. As opposed to the utilitarian, forward-looking deterrence and compensation rationales, corrective justice focuses on the past and the moral obligation of the tortfeasor to rectify the injury to his victim. In other words, proponents of corrective justice argue that the law obliges "a person whose morally culpable behavior has violated another's autonomy to restore the latter as nearly as possible to his or her pre-injury status." [FN35] For purposes of this article, the issue is whether contributory negligence or some form of comparative negligence is more successful in achieving tort law's corrective justice rationale.

Scholars have debated which of these rationales undergird tort law for decades. [FN36] In fact, philosophical scholars have been debating the relative merits of utilitarian versus Kantian ethical systems for centuries. [FN37] Those issues are beyond the scope of this article. We make no attempt to determine which of the three rationales is most essential to tort law. For purposes of this article, we decline to offer an opinion on the three rationales' relative merits. Our goal, assuming each of the rationales is legitimate, is simply to determine whether contributory or some form of comparative negligence would best achieve each of tort law's rationales. It will become apparent why we need not decide among the rationales.

## II. Corrective Justice

We will begin our analysis by evaluating whether contributory or some form of comparative negligence best achieves corrective justice.

Comparative negligence is superior to contributory negligence in achieving tort law's corrective justice rationale. The essence of corrective justice is that a party who wrongs (injures) another must correct the wrong \*48 to restore the moral balance between them. [FN38] In tort law, when a tortfeasor causes an injury, he cannot literally correct his wrong in the sense of healing the injury; liability is therefore imposed for compensation although it is only a substitute for the prior bodily health and autonomy. [FN39] However, under a contributory negligence rule, tortfeasors may be relieved of the burden of correcting their wrongs. If the victim's negligence contributes in any way to the victim's injury, the tortfeasor does not have to correct his wrong. In this scenario, the injured victim must pay the price of his own negligence in the form of the injuries sustained. On the other hand, the tortfeasor is not made to pay the price for his negligence. This leaves in place a moral imbalance and violates corrective justice. The violation is especially problematic in cases where the victim's negligence is slight in comparison with the tortfeasor's wrong.

Corrective justice has often been discussed in terms of "fairness." [FN40] The late Professor Gary T. Schwartz weighed the relative merits of comparative and contributory negligence based on "fairness" over two decades ago and arrived at the same conclusion:

If this idea of fairness thus calls on tort law to take account of the plaintiff's contributory negligence in ascertaining the liability of a negligent defendant, the question arises of what appropriate form the legal doctrine should assume. As presented, the fairness idea is entirely satisfied by a liability-dividing rule like comparative negligence. Should the idea be carried further, however, so as to disqualify the foolish plaintiff from receiving any recovery from a negligent defendant? The

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contributory negligence idea does not seem to be one of those that presses itself to its logical extremes; when stated as above, in a moderate form, the idea is both intelligible and stable. There is nothing in its logic that would be impaired or compromised were it deployed in support of a liability-reducing rule rather than a liability-denying rule. Moreover, as we have seen, the rule of negligence liability itself has a satisfactory moral basis, one that is based on our disapproval of \*49 antisocial or egotistical conduct. To negate altogether a plaintiff's lawsuit against a negligent defendant would be to allow the fairness idea associated with the contributory negligence defense to extinguish the moral idea that predicates negligence liability. [\[FN41\]](#)

In contrast to contributory negligence, comparative negligence does not relieve a tortfeasor of the burden of correcting his wrong. The tortfeasor's negligence is weighed against the victim's negligence and the tortfeasor must pay the victim for the tortfeasor's negligence. Thus, under a comparative negligence regime, a tortfeasor must correct his wrong.

Professor Stephen R. Perry of the University of Pennsylvania Law School endorsed a two-step model for corrective justice. [\[FN42\]](#) In the first step, all parties with a normatively significant connection to a tortious injury are tied to a rectification procedure. [\[FN43\]](#) It is Perry's second step that is relevant for our purposes. Among the parties tied to the rectification procedure, how should the loss be allocated?

(A)mong those persons who have a normatively significant connection with a given loss, it is morally preferable that it be borne by whoever acted faultily in producing it. If no one was at fault, then for reasons already considered the loss remains with the person who suffered the injury. If more than one person was at fault-the victim might be one of these-then the loss is proportionally shared among them. [\[FN44\]](#)

Thus, in designing his theory of corrective justice, Perry explicitly describes, and endorses, comparative negligence.

Comparative negligence is superior to contributory negligence in achieving tort law's corrective justice rationale because the contributory negligence rule allows a tortfeasor to escape the burden of correcting his \*50 wrong. The comparative negligence rule forces the tortfeasor to correct his wrong in the sense that he must compensate the victim for his share of negligence. Similarly, a victim must pay for his share of his own negligence.

Pure comparative negligence is superior to modified comparative negligence in achieving tort law's corrective justice rationale for the same reason comparative negligence is superior to contributory negligence. Recall the essence of corrective justice is that a party who wrongs (injures) another must correct the wrong to restore the moral balance between them. Pursuant to modified comparative negligence, tortfeasors may be relieved of the burden of correcting their wrongs. If a tortfeasor is less negligent than the plaintiff (or even equally negligent in 49% of jurisdictions), the tortfeasor does not have to correct his wrong. Thus, modified comparative negligence can leave in place a moral imbalance. The imbalances will not be as serious as those permitted under a contributory negligence rule. However, a pure comparative negligence regime is superior in that it requires a tortfeasor to correct every wrong.

Professor Schwartz, again using "fairness" language, raises another issue. Modified comparative negligence, by using what Schwartz calls a "break-point," treats similarly situated litigants in a very different manner:

one becomes very uncomfortable with the fairness implications of (the) "break-point" feature-the feature that allows the entire liability to turn on a slight difference in the assessed negligence of the parties. To distinguish in an all-or-nothing way between the party, whether plaintiff or defendant, who is deemed forty-five percent negligent and the party who is deemed fifty-five percent negligent is substantially unfair-especially when the relevant judgments are imprecisely and unpredictably rendered after the event by an ad hoc lay jury. [\[FN45\]](#)

Thus, pure comparative negligence is preferable to modified comparative negligence from a corrective justice standpoint.

### III. Compensation

Unquestionably, comparative negligence is superior to contributory negligence in achieving tort law's compensation goal. Comparative \*51 negligence allows injured victims to receive compensation in cases where contributory negligence would deny such compensation. In any case where an injured plaintiff is at all negligent and that negligence is a cause of his injury,

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the plaintiff can receive compensation from a negligent defendant also causing the plaintiff's injury under comparative, but not contributory, negligence. On the other hand, there is no case in which contributory negligence would afford compensation to an injured victim who would be denied compensation by comparative negligence.

Similarly, pure comparative negligence is superior to modified comparative negligence in achieving tort law's compensation goal. Pure comparative negligence allows injured victims to receive compensation in cases where modified comparative negligence would deny such compensation. In any case an injured plaintiff is 51% or more negligent (50% or more in some jurisdictions) and that negligence is a cause of his injury, the plaintiff can receive compensation from a negligent defendant also causing the plaintiff's injury under pure comparative, but not modified comparative, negligence. On the other hand, there is no case in which modified comparative negligence would afford compensation to an injured victim who would be denied compensation by pure comparative negligence. Thus, pure comparative negligence is superior to modified comparative negligence from a compensation standpoint.

#### IV. Deterrence

In the last several decades, law and economics scholars have debated the relative efficiency of contributory and comparative negligence rules in producing optimal behavior. Deterring accidents is the most important factor in this analysis. The initial orthodox view was that contributory negligence was efficient, but comparative negligence was not. Law and economics scholars relied on two separate, but related, arguments in support of this conclusion. First, if liability costs are divided, neither party may have a sufficiently strong incentive to take precautionary measures. This results in increased accidents. Second, if liability costs are divided, both parties may take duplicative precautionary measures. Although accidents may be averted, they could have been prevented in a more efficient manner.

In 1970, in his seminal work *The Costs of Accidents*, Professor Guido Calabresi offered an example of how the division of liability costs can result in inefficient precautionary incentives. [FN46] Professor Calabresi \*52 assumed an accident involving two activities cost \$80 each time it occurred. He further assumed that the accident could be prevented by a \$60 safety device. If either party bore the entire cost of the accident, that party would install the \$60 device and prevent the accident. However, if liability costs were divided, neither party would spend over \$40 to avoid the accident. Professor Calabresi concluded such a division would result, in the absence of bargaining between the parties, in neither party taking the necessary precautionary measure, thus increasing accidents.

Professor Richard A. Posner presented the other alleged inefficiency of comparative negligence. In his groundbreaking *Economic Analysis of Law*, Professor Posner posited a \$1,000 accident that could be prevented by the defendant at a cost of \$50 and by the plaintiff at a cost of \$100. [FN47] Professor Posner argued that if either party bore the entire cost of liability, that party would pay to prevent the accident. However, if liability costs were divided between the two parties, both of them would invest the money to prevent the accident, resulting in a \$100 inefficiency. Professor Posner also acknowledged the possibility that neither party would make the investment:

or they might invest nothing (either party, knowing that the other party had an incentive to prevent the accident, might, in reliance thereon, make no attempt to prevent it himself), resulting in an avoidable cost of \$950. [FN48]

The informal analyses by Professors Calabresi and Posner were supported by a formal economic analysis in 1973. The first scholar to formally compare the efficiency of contributory and comparative negligence, Professor John Prather Brown, also concluded that contributory negligence was efficient but comparative negligence was not. [FN49] In a more recent article focusing on products liability, Professor George L. Priest argued that the trend from contributory to comparative negligence reduced tort law's deterrent effect. [FN50]

\*53 In the mid-1980's, the efficiency of comparative negligence began to gain support among law and economics scholars. In 1986, Professors Robert D. Cooter and Thomas S. Ulen argued that Professor Brown's conception of comparative negligence was flawed and it caused him to erroneously conclude that comparative negligence was always inefficient. [FN51] Professors Cooter and Ulen argued that, in the absence of perfect information regarding the legal standard of care and the amount of precaution that each person takes, parties tend to exceed the legal standard of care in order to allow courts a margin for error in determining fault. [FN52] This tendency is accentuated in instances where one party will bear the entire cost of liability.



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Because the comparative negligence rule gives moderate incentives for precaution to both injurers and victims, the rule minimizes the total amount of excessive precaution when the parties are "symmetrically situated," i.e., when efficiency requires both parties to take similar amounts of precaution. [FN53] Thus, the authors concluded that, in certain circumstances, comparative negligence can be efficient.

In a 1991 article, Professor Daniel Orr argued that the view contributory negligence was more efficient in optimizing behavior was based on the assumption that unilaterally taken precautions are fully effective, a proposition he disputes. [FN54] Professor Orr argued that the use of game theory demonstrates that a move from contributory to comparative negligence has two beneficial effects: it strengthens the incentives for precaution and diminishes the likelihood of excess expenditure thereon. [FN55] In other words, Professor Orr argued that the original orthodox law and economics view concerning contributory and comparative negligence was exactly backwards. By 1986, Professor Posner had altered his view of contributory and comparative negligence. In the third edition of *Economic Analysis of Law*, he states, "comparative negligence has the same effects on safety as contributory negligence." [FN56]

A recent survey of legal and economic scholars revealed that scholarly opinion on the deterrent effect of contributory versus comparative negligence is divided. In taking a survey of scholarly opinion, Professors John C. Moorhouse, Andrew P. Morriss, and Robert Whaples asked legal \*54 and economic scholars to evaluate a series of statements. [FN57] One of the statements was, "Contributory negligence is more efficient at producing optimal behavior than comparative negligence". Scholars were asked to rate their opinion on a five-point scale from strongly disagree to strongly agree. Thirty-nine percent of respondents disagreed with the statement, while 25% of respondents agreed with it, and 37% of respondents were neutral. [FN58] Thus, there does not appear to be a scholarly consensus on the deterrent effect of one rule versus the other.

One striking aspect of the theoretical debate is the lack of empirical data marshaled as evidence to support the positions. The occasional attempt to use empirical data does so to test a previously-constructed theoretical model of incentives. [FN59] In this article, we make no attempt to join this theoretical debate. Instead, we focus on empirical data from jurisdictions applying the various rules. [FN60] As stated above, according to the deterrence rationale, tort law is designed to prevent accidents by threatening potential wrongdoers with civil liability or the inability to recover. If negligence rules shape the behavior of potential tortfeasors and if one negligence rule is assumed to have a greater deterrent effect, then citizens of jurisdictions applying that rule should have lower accident rates than citizens of jurisdictions adopting the other rule. The issue is whether contributory or comparative negligence is more successful in achieving tort law's deterrence rationale of preventing accidents. It will be shown below that in the case of automobile accidents, [FN61] there is no difference between \*55 the two rules that would indicate either has a greater deterrent effect than the other.

To analyze any potential deterrent effect of one rule versus another, we used data collected by the Insurance Research Council (IRC) in a compilation called *Trends in Auto Injury Claims*, 2000 Edition. [FN62] This compilation provides data for annual bodily injury claims, frequencies and property damage claims frequencies for the years 1980 through 1998. [FN63] It is assumed that these claims' rates reflect the risk-taking behavior of each jurisdiction's citizens and that any differences in the deterrent effects of contributory and comparative negligence rules would be reflected in the claims' frequencies. [FN64] Automobile accident claims' frequencies for bodily injury and property damage were used as indicators of the underlying behavior of each jurisdiction's population.

Only four states and the District of Columbia, all of which currently have the contributory negligence rule, adhered to that rule in 1998, the most recent year for which data were available. Because of this small sample size relative to the number of comparative negligence jurisdictions, we decided to look at statistics from 1980 as well. Although the pool of contributory negligence jurisdictions has been shrinking through the years, by looking back to 1980 we were able to increase the sample size to fourteen. [FN65] The jurisdictions assigned to the contributory group negligence group are listed in the table below. [FN66]

\*56 Table 1--Contributory Negligence Jurisdictions

Number	Jurisdictions	Year Changed to Comparative Negligence
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1	New Mexico	1981
2	Illinois	1981
3	Iowa	1982
4	Missouri	1983
5	Indiana	1983
6	Kentucky	1984
7	Arizona	1984
8	Delaware	1984
9	South Carolina	1991
10	Alabama*	N/A
11	District of Columbia*	N/A
12	Virginia*	N/A
13	North Carolina*	N/A
14	Maryland*	N/A

\*Current contributory negligence jurisdictions

The table below provides descriptive statistics for each sample: sample 1 (CONTRIB), composed of the contributory negligence jurisdictions; and sample 2 (COMPAR), composed of the comparative negligence jurisdictions. The numbers presented are claims per 100 insured vehicles. CF\_BI is claims frequency for bodily injury and CF\_PD is claims frequency for property damage.

\*57 Table 2--Data Analysis

	Group	Number of Jurisdictions Used	Mean Claims Freq
1998			
CF_BI	CONTRIB	5	1.3328
	COMPAR	42	1.0576
CF_PD	CONTRIB	5	4.2580
	COMPAR	42	3.9760
1980			
CF_BI	CONTRIB	14	0.9180

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COMPAR		33	0.7453
CF_PD	CONTRIB	14	4.6260
COMPAR		33	4.6832

We cannot determine anything conclusive about the relationship between the contributory and comparative negligence jurisdictions simply by comparing raw data obtained from a few samples. What we want to do instead is use inferential statistical procedures to show that the samples are representative of the populations involved, and that any differences between the samples can or cannot be extrapolated to actual population differences. [\[FN67\]](#) The hypothesis tested can be based on prior observations or on a theory, and the sample observations are used to determine the likelihood that a particular hypothesis is true. [\[FN68\]](#)

The method relies on the construction of two mutually exclusive and exhaustive hypotheses. One is called the null hypothesis,  $H_0$ , and the other is the alternative hypothesis, designated  $H_1$ . The null hypothesis is that \*58 there is no difference between groups on the chosen parameters, while the alternative hypothesis is that a difference does exist. [\[FN69\]](#) Inferential statistics will tell us if a significant difference exists between the samples, where "significant" means that it can be concluded that they come from different populations. [\[FN70\]](#)

Let us suppose, for the sake of argument, that we believe that either the contributory negligence rule or the comparative negligence rule has a superior deterrence effect on insured drivers. Our alternative hypothesis ( $H_1$ ), then, is that a statistically significant difference exists between mean claims frequencies in contributory and comparative negligence jurisdictions. Our null hypothesis ( $H_0$ ) is that no difference exists.

We looked at several statistical tests commonly used to test hypotheses of this type and selected a nonparametric [\[FN71\]](#) test called the Mann-Whitney U test. [\[FN72\]](#) This test accomplishes all that other tests could with this data set, and is the simplest both to use and understand. [\[FN73\]](#)

Statistical tests analyze the data sets and calculate numbers that are used to determine the significance level of any differences between the raw data sets. The significance level indicates how likely it is that any differences are due to chance versus the examined variable (in our case, the type of negligence rule involved). Generally, the null hypothesis, that no difference exists between the samples, is rejected if there is less than a five percent likelihood, or  $p < 0.05$ , that the difference is only due to chance, and a 95% degree of certainty that the difference between populations does reliably exist. [\[FN74\]](#)

\*59 For the 1998 bodily injury claims data, we found that the likelihood that any difference between the samples is due to chance is more than 20%. [\[FN75\]](#) For the 1998 property damage data, this likelihood is more than 80%. [\[FN76\]](#) Therefore, for the 1998 data, we were unable to find any statistical evidence of a difference in mean claims frequencies for either bodily injury or property damage.

We next performed the Mann-Whitney U test on the 1980 data. For the bodily injury claims frequencies, the likelihood that any difference between the samples is due to chance is more than 5%. [\[FN77\]](#) For the property damage claims frequencies, we found that the likelihood that any difference between the samples is due to chance is 69%. [\[FN78\]](#)

In summary, we have conducted statistical tests to find evidence of a superior deterrent effect attributable to one negligence rule as compared to the other. We compared claims frequencies data from contributory and comparative jurisdictions, using two years, 1980 and 1998. There is no evidence of any differences between the two groups in either year. We therefore conclude that any deterrent effect caused by a contributory negligence rule is no different than that created by a comparative rule. [\[FN79\]](#)

## V. Conclusion

In the jurisdictions in the United States there are multiple rules regarding contributory and comparative negligence. To determine which rule is superior, it is necessary to determine what tort law is attempting to \*60 accomplish. There are three



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principal rationales for the tort system: corrective justice, compensation and deterrence.

Pure comparative negligence is the rule that best achieves the goals of tort law. Pure comparative negligence is superior from a corrective justice perspective because it requires tortfeasors to correct their wrongs in all cases. Modified comparative negligence and, especially, contributory negligence relieve tortfeasors of the burden of correcting their wrongs. Pure comparative negligence is superior from a compensation perspective because it affords compensation to the most injured victims. Modified comparative negligence and, especially, contributory negligence deny compensation to injured victims. Finally, the deterrence rationale does not appear to favor either the contributory or comparative negligence rule. [\[FN80\]](#) Contrary to the claims of some law and economics scholars, contributory negligence does not appear to deter accidents any more than does comparative negligence. Therefore, pure comparative negligence is the superior rule. [\[FN81\]](#)

#### Appendix

The Mann-Whitney U test was selected for this study because it was determined that we needed a nonparametric statistical test. A parametric test, such as a t test, relies on certain assumptions about the data sets involved, such as that they are normally distributed. A normal distribution, when graphed, forms a regular bell curve, with most of the data points falling in the middle and fewer and fewer toward the extremes. [\[FN82\]](#) In our case, one sample population was not normally distributed; thus, we had to use a nonparametric test.

\*61 The Mann-Whitney U test examines the distributions of the data sets involved in order to determine if they come from the same population or not. As we can see from the following explanation, it is simple to apply.

#### The Mann-Whitney U-Test:

Designate the size of the data set in the smaller sample as  $n_1$  and that of the larger sample as  $n_2$ . [\[FN83\]](#)

1. "List the observations from the smallest to the largest in such a way that the two samples may be easily compared." [\[FN84\]](#)
2. "For each observation in one sample...count the number of observations in the other sample that are lower in value....Count 1/2 for each tied observation." The sum of these counts = C. "The Mann-Whitney statistic  $U_s$  is the greater of the two quantities C and  $(n_1 n_2 - C)$ ...." [\[FN85\]](#)

For the 1980 data,  $n_1 = 14$  and  $n_2 = 33$ ; for the 1998 data,  $n_1 = 5$  and  $n_2 = 42$ . By convention, the Z value is derived from the Mann-Whitney U when  $n_2 > 20$ , and is used to test the significance of U. [\[FN86\]](#) The following formula is used to calculate Z, where 12 is a constant:

<<EQUATION>> [\[FN87\]](#)

Once the Z value is determined, a significance value (p) is assigned using a table. [\[FN88\]](#)

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[\[FN1\]](#). Kenneth S. Abraham, *The Form and Functions of Tort Law* 137 (1997).

[\[FN2\]](#). Victor E. Schwartz, *Comparative Negligence* 5 (3d ed. 1994).

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[FN3]. 103 Eng. Rep. 926 (K.B. 1809).

[FN4]. Schwartz, *supra* note 2, at 6 (citing Fleming James, Jr., *Contributory Negligence*, 62 Yale L.J. 691 (1953); Thomas F. Lambert, *The Common Law is Never Finished (Comparative Negligence on the March)*, 32 ATLA L.J. 741 (1968); Robert A. Leflar, *The Declining Defense of Contributory Negligence*, 1 Ark. L. Rev. 1 (1946); Charles L. B. Lowndes, *Contributory Negligence*, 22 Geo. L.J. 674 (1934)).

[FN5]. Abraham, *supra* note 1, at 139-40; Schwartz, *supra* note 2, at 6-7.

[FN6]. Abraham, *supra* note 1, at 139. For examples of courts applying the safety statute exception, see [Koenig v. Patrick Constr. Corp.](#), 298 N.Y. 313, 83 N.E.2d 133 (1948); [Tamiami Gun Shop v. Klein](#), 116 So.2d 421 (Fla. 1959).

[FN7]. Schwartz, *supra* note 2, at 6 (citing William L. Prosser & W. Page Keeton, *The Law of torts* S65 at 462 (5th ed. 1984); [Sun Oil Co. v. Seamon](#), 349 Mich. 387, 84 N.W.2d 840 (1957); [Cook v. Kinzua Pine Mills Co.](#), 207 Ore. 34, 293 P.2d 717 (1956); 2 Fowler V. Harper & Fleming James, Jr., *The Law of Torts* § 22.6 (1956)).

[FN8]. Abraham, *supra* note 1, at 140. The last clear chance doctrine appears to have originated in an English case, *Davies v. Mann*, 10 M. & W. 547, 152 Eng. Rep. 588 (Ex. 1842).

[FN9]. Schwartz, *supra* note 2, at 6.

[FN10]. See Abraham, *supra* note 1, at 140-43.

[FN11]. *Id.* at 144.

[FN12]. 1863 Ga. Laws 2979 (codified at Ga. Code Ann. S46-8-291(1992)).

[FN13]. 1863 Ga. Laws 2914 (current version at Ga. Code Ann. S51-11- 7(2000)).

[FN14]. Schwartz, *supra* note 2, at 14. See generally L.P. Goodrich, *Origin of the Georgia Rule of Comparative Negligence and Apportionment of Damages*, Rep. Proc. Fifty-Seventh Ann. Ga. B. Ass'n., May 23-24-25, 1940, at 174(detailing the history of comparative negligence in Georgia).

[FN15]. Act of April 22, 1908, ch. 149, S3, 35 Stat. 66(codified at 45 U.S.C. S53(2000)).

[FN16]. 1910 Miss. Laws 135 (current version at Miss. Code Ann. S11-7- 15(1972)).

[FN17]. 1913 Neb. Laws 124, § 1 (current version at Neb. Rev. Stat. S25-21, 185 (1995)).

[FN18]. 1931 Wis. Laws 242(current version at Wis. Stat. Ann. S895.045 (West 1997)).

[FN19]. 1941 S.D. Laws 160(current version at S.D. Codified Laws S 32- 03.2-02 (Michie 1996)).

[FN20]. Ark. Stat. Ann. SS27-1730.1 to .2 (1955),repealed and replaced by 1975 Ark. Acts 367 (codified at Ark. Stat. Ann. SS27-1763 to 1765(1975), current version at Ark. Code Ann. S16-64-122 (Michie Supp. 2003)).

[FN21]. Me. Rev. Stat. Ann. tit. 14, S156(West 1964).

[FN22]. Schwartz, *supra* note 2, at 2-3.

[FN23]. Abraham, *supra* note 1, at 145.

[FN24]. Schwartz, *supra* note 2, at 14-15.

[FN25]. Abraham, *supra* note 1, at 145.

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[FN26]. Mich. Comp. Laws Ann. S600.2959 (West 2000).

[FN27]. See [Felton v. Wagner, 512 A.2d 291 \(D.C. 1986\)](#); [Ridgeway v. CSX Transp., Inc., 723 So.2d 600 \(Ala. 1998\)](#); [Billmeyer v. State, for Use of Whiteman, 64 A.2d 755 \(Md. 1949\)](#); [Parchment v. Garner, 520 S.E.2d 100 \(N.C. Ct. App. 1999\)](#); [Litchford v. Hancock, 352 S.E.2d 335 \(Va. 1987\)](#).

[FN28]. See [Alaska Stat. §§ 09.17.040 to 09.17.900](#) (Michie 2002); Cal. Civ. Code S1431.2 (West Supp.); [La. Civ. Code Ann. art. 2323](#) (West 1997); Miss. Code Ann. S11-7-15 (1972); Mo. Ann. Stat. SS537.765, 537.068 (West 2000); N.M. Stat. Ann. S41-3A-1 (Michie 1978); N.Y. C.P.L.R. SS1411 to 1413 (McKinney 1997); R.I. Gen. Laws SS9-20-4, 9-20-4.1 (1997); Wash. Rev. Code Ann. SS4.22.005 to 4.22.020 (West 1998). See also [Kaatz v. State, 540 P.2d 1037 \(Alaska 1975\)](#); [Nga Li v. Yellow Cab Co., 532 P.2d 1226 \(Cal. 1975\)](#); [Hoffman v. Jones, 280 So. 2d 431 \(Fla. 1973\)](#); [Gustafson v. Benda, 661 S.W.2d 11 \(Mo. 1983\)](#); [Scott v. Rizzo, 634 P.2d 1234 \(N.M. 1981\)](#).

[FN29]. See Arizona (Ariz. Rev. Stat. Ann. SS12-2501 to 12-2509 (2003)); Arkansas (Ark. Code Ann. S16-64-122 (Michie 1987 & Supp. 2003)); Colorado (Colo. Rev. Stat. SS13-21-111 to 13-21-111.7 (1987)); Georgia (Ga. Code Ann. S46-8-291 (1992), Ga. Code Ann. SS51-11-7, 51-12-31 to 33 (2003)); Idaho (Idaho Code S6-801 to 6-806 (2003)); Kansas (Kan. Stat. Ann. SS60-258a, 60-258b (2003)); Maine (Me. Rev. Stat. Ann., tit. 14, S156 (2003)); Nebraska (Neb. Rev. Stat. Modified comparative SS25-21, 185.07 to negligence 25-21, 185.12 (2003)); North Dakota (N.D. Cent. Code, S32-03.2-02 (2003)); Tennessee ([McIntyre v. Balentine, 833 S.W.2d 52 \(Tenn. 1992\)](#)); Utah (Utah Code Ann. SS78-27-37 to 78-27-43 (2003)); West Virginia ([Bradley v. Appalachian Power Co., 256 S.E.2d 879 \(W. Va. 1979\)](#)).

[FN30]. Connecticut (Conn. Gen. Stat. Ann., S52-572h (2003)); Delaware (Del. Code Ann., tit. 10, S8132 (2003)); Hawaii (Haw. Rev. Stat. SS663-10.9 and 663-31 (2003)); Illinois ([735 Ill. Comp. Stat. Ann. 5/2-1107.1](#) and [5/2-1116 \(2003\)](#)); Indiana (Ind. Code, SS34-51-2-5 to 34-51-2-6); Iowa (Iowa Code Ann, SS668.1 to 668.10); Massachusetts (Mass. Gen. Laws Ann., ch. 231, S85 (2003)); Minnesota (Minn. Stat. Ann., SS604.01, 604.02 (2003)); Montana (Mont. Code Ann., SS27-1-702, 27-1-703 (2002)); Nevada (Nev. Rev. Stat. S41.141 (2003)); New Hampshire (N.H. Rev. Stat. Ann., S507:7-d (2003)); New Jersey (N.J. Stat. Ann., SS2A:15-5.1 to 2A:15-5.3 (2003)); Ohio (Ohio Rev. Code Ann., S2315.19 (2003)); Oklahoma (Okla. Stat. Ann., tit. 23, SS12 to 14 (2002)); Oregon (Ore. Rev. Stat., SS18.470 to 18.510 (2001)); Pennsylvania (Pa. Stat. Ann., tit. 42, S7102 (2003)); South Carolina ([Nelson v. Concrete Supply Co., 399 S.E.2d 783 \(S.C. 1991\)](#)); Texas (Tex. Civ. Prac. & Rem. Code Ann. SS33.001, 33.002, 33.003, 33.011, 33.012 and 33.013 (2003)); Vermont (Vt. Stat. Ann., tit. 12, S1036 (2003)); Wisconsin (Wis. Stat. Ann., S895.045 (2003)); Wyoming (Wyo. Stat., SS1-1-109 (2003)).

[FN31]. Don Dewees et al., Exploring the Domain of Accident Law 5-10 (1996) (describing deterrence, compensation, and corrective justice as "the three major normative perspectives on tort law"). See also Guido Calabresi, The Cost of Accidents 24-28, 44 (1970).

[FN32]. The distinction between utilitarianism and individual moral rights, or Kantianism, is familiar from the subject of Ethics. See James Rachels, The Elements of Moral Philosophy chs. 7-10 passim (1986).

[FN33]. Dewees et al., supra note 31, at 5.

[FN34]. Id. at 6.

[FN35]. Id. at 8.

[FN36]. See, e.g., id. at 5-10; Patrick S. Atiyah, The Damages Lottery (1997); Jeffrey O'Connell & Christopher J. Robinette, The [Role of Compensation in Personal Injury Tort Law: A Response to the Opposite Concerns of Gary Schwartz and Patrick Atiyah](#), 32 Conn. L. Rev. 137 (1999); Gary T. Schwartz, Mixed Theories of Tort Law: Affirming Both Deterrence and Corrective Justice, [75 Tex. L. Rev. 1801 \(1997\)](#).

[FN37]. Jeremy Bentham, An Introduction to the Principles of Morals and Legislation (1789); Immanuel Kant, Groundwork of the Metaphysics of Morals (1785); John Stuart Mill, Utilitarianism (1863).

[FN38]. Abraham, supra note 1, at 14. Corrective justice is reflected in the common sense phrase, "if you break it, fix it".

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[FN39]. *Id.*; Stephen R. Perry, The [Moral Foundations of Tort Law](#), 77 *Iowa L. Rev.* 449, 498 (1992).

[FN40]. See, e.g., Calabresi, *supra* note 31, at 24 n.1; Gary T. Schwartz, Contributory and Comparative Negligence: A Reappraisal, 87 *Yale L.J.* 697, 722 (1978).

[FN41]. Schwartz, *supra* note 40, at 725. See also Abraham, *supra* note 1, at 148 ("In my view the appeal of comparative negligence to the ordinary individual's sense of fairness is sufficiently great to render this factor alone virtually dispositive on the issue. The contributory negligence rule that completely barred recovery from a negligent injurer because the victim was also negligent, without regard to the degree of that negligence, is highly objectionable to most people's sense of fairness.").

[FN42]. See Perry, *supra* note 39.

[FN43]. *Id.* at 489-99.

[FN44]. *Id.* at 499.

[FN45]. Schwartz, *supra* note 40, at 727.

[FN46]. Guido Calabresi, *The Costs of Accidents: A Legal and Economic Analysis* 158 (1970).

[FN47]. Richard A. Posner, *Economic Analysis of the Law* 124 (2d ed. 1977). Professor Posner's treatment of contributory and comparative negligence herein is an extension of his analysis in Richard A. Posner, *A Theory of Negligence*, 1 *J. Legal Stud.* 29, 39-40 (1972).

[FN48]. Richard A. Posner, *Economic Analysis of the Law* 124 (2d ed. 1977).

[FN49]. John Prather Brown, *Toward an Economic Theory of Liability*, 2 *J. Legal Stud.* 323 (1973).

[FN50]. George L. Priest, *Modern Tort Law and its Reform*, 2 *Val. U. L. Rev.* 1, 11 (1987).

[FN51]. Robert D. Cooter & Thomas S. Ulen, An [Economic Case for Comparative Negligence](#), 61 *N.Y.U. L. Rev.* 1067, 1079-80 (1986).

[FN52]. *Id.* at 1086-87.

[FN53]. *Id.* at 1090-92.

[FN54]. Daniel Orr, *The Superiority of Comparative Negligence: Another Vote*, 20 *J. Legal Stud.* 119 (1991).

[FN55]. *Id.* at 120.

[FN56]. Richard A. Posner, *Economic Analysis of Law* 156 (3d ed. 1986).

[FN57]. John C. Moorhouse et al., [Law & Economics and Tort Law: A Survey of Scholarly Opinion](#), 62 *Alb. L. Rev.* 667 (1998).

[FN58]. *Id.* at 675.

[FN59]. See Michelle J. White, *An Empirical Test of the Comparative and Contributory Negligence Rules in Accident Law*, 20 *Rand. J. Econ.* 308 (1989) (concluding that contributory negligence provides superior incentives to exercise caution than comparative negligence).

[FN60]. Although economic arguments are often premised on the assumption of perfect information, we argue that it is more important to examine these doctrines as they actually function, with imperfect knowledge. The assumption of perfect information makes it easier to apply theory to forecast consumer behavior. By using statistical analyses to discover patterns

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in actual consumer behavior, we are freed from any reliance on these simplifying assumptions. See Gary T. Schwartz, [Reality in the Economic Analysis of Tort Law: Does Tort Law Really Deter?](#), 42 *UCLA L. Rev.* 377, 379 n.9 (1994) ("Yet what does it mean to say that legal rules 'create incentives' for efficient conduct if there is no evidence that they in fact bring that conduct about?").

[FN61]. We used automobile accidents because, unlike other categories of torts, figures indicative of automobile accident rates are available. Additionally, automobile accidents constitute the largest and most costly category of tort, see Dewees et al., supra note 31, at 15, and, unlike some significant categories of torts such as medical malpractice, the issue of contributory versus comparative negligence is widely relevant thereto.

[FN62]. The data is prepared by and subject to the copyright of the Insurance Research Council, 718 Providence Rd., Malvern, Pennsylvania 19355- 0725, phone (610) 644-2212 x7569.

[FN63]. We would have preferred to use accident rate statistics rather than claims frequencies; however, accident rates are not compiled consistently from jurisdiction to jurisdiction and we could not find a valid database containing such statistics. Our analyses and conclusions rely on the assumption that the claims' frequencies reported for each jurisdiction are directly proportional to that jurisdiction's accident rates.

[FN64]. Claims frequency is the number of claims per 100 insured vehicles. We recognize that the claims frequency rates necessarily do not include uninsured motorists. However, because the figures are based on the number of insured cars and not the general population, we believe this is not a significant factor.

[FN65]. In statistics, sample refers to the group from which the data was obtained (e.g., insured vehicles in contributory negligence states in 1980); population refers to the larger group from which the sample was taken (e.g., insured vehicles in all contributory negligence states at any given point in time). Geoffrey Keppel et al., *Introduction to Design and Analysis* 17 (2d ed. 1992).

[FN66]. Of the 51 jurisdictions, only 47 were analyzed. No data was available for New Hampshire. South Dakota and Michigan were omitted because of their unique rules during one or both of the years in question. We did not analyze their rules separately because one state is too small a sample size to generate a meaningful analysis. Tennessee, in 1992, modified comparative negligence by replacing a rule called remote contributory negligence, which focused on causation and apparently determined whether a plaintiff's contribution to the injury was remote. Because Tennessee's rule was not the standard contributory negligence rule, Tennessee was not included in our analyses. All other states were included in the comparative negligence group in the analyses.

[FN67]. Statistical tests compare samples to see if they are taken from the same or from different populations; that is, if they share the same characteristics relevant to the issue under consideration. Keppel, et al., supra note 65, at 17. In this case, one of the samples is insured vehicles in comparative negligence states in 1998. Our parameters are claims frequencies for bodily injury and property damage, which we infer are related to driving habits. We want to know if the two samples come from the same general population of "insured vehicles" or if a distinction can be drawn between two separate populations with different driving habits: those in contributory negligence jurisdictions and those in comparative negligence jurisdictions. Inferential statistics allow us to do so by compensating for, inter alia, the difference in sample size. G. Keppel & S. Zedeck, *Data Analysis for Research Designs* (1989), at 546-547.

[FN68]. Sam Kachigan, *Modern Statistical Analysis; a Conceptual Introduction* 105 (1991).

[FN69]. Keppel, et al., supra note 65, at 70.

[FN70]. Keppel, et al., supra note 65, at 111.

[FN71]. A parametric statistical test is a test that relies upon certain assumptions about the parameters from which the research sample was drawn. Sydney Siegel, *Nonparametric Statistics for the Behavioral Sciences* 30-31 (1956).

[FN72]. We considered using several parametric tests including the independent samples t test. However, the t test assumes

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that the test variables are normally distributed (as in a bell curve) in each of the two populations. Keppel, et al., *supra* note 65, at 111. We tested the normality assumption for each of the sample populations and found that one sample population was substantially nonnormal. Thus, the t test could not be used and we were forced to rely on nonparametric tests of hypotheses.

[FN73]. For a more complete explanation of the Mann-Whitney U Test and the Z statistic, see the Appendix.

[FN74]. Keppel, et al., *supra* note 65, at 113. This standard is adopted because chance can always produce the difference we seek to prove. For example, if one was seeking to prove a vitamin supplement increased height in children, one could inadvertently select as a sample a group of children that was going to be taller than their peers with or without the supplement. Thus, the statistical test might give us a 95% degree of certainty even if the hypothesis was incorrect. The experiment can be replicated and new data sets tested to confirm there is still a 95% degree of certainty a difference exists, or the null hypothesis could fail to be disproved. In the latter case, the suspicion arises that the initial difference between data sets may have been due to chance. Because chance can produce this difference, one can never conclude with 100% certainty that the samples come from different populations.

[FN75].  $Z=-1.242$ ,  $p=0.228$ . We used SPSS for Windows, Release 10 to calculate the statistics used in these tests.

[FN76].  $Z=-0.224$ ,  $p=0.828$ .

[FN77].  $Z=-1.955$ ,  $p=0.051$ .

[FN78].  $Z=-0.396$ ,  $p=0.692$ .

[FN79]. Although we are not aware of any scholars that argue there is a superior deterrent effect between modified and pure comparative negligence, we analyzed the 1998 bodily injury claim frequencies for modified and pure comparative negligence states using two non-parametric tests. Both tests indicated that there is no statistical evidence supporting the claim of a superior deterrent effect for either rule. The statistical distributions of the claims frequencies for the rules are so close that they cannot be distinguished with these sample sizes. We did not separately analyze the rules in effect in South Dakota or Michigan because one state is too small a sample size to generate a meaningful analysis.

[FN80]. These analyses do not support, and we are not making, the claim that tort law does not deter accidents. Whether tort law deters automobile accidents is beyond the scope of this article. We do find, however, that there is no significant difference in the level of deterrence caused by contributory versus comparative negligence. Some law and economics scholars argue that, under certain assumptions, every form of the negligence rule gives the tortfeasor and the victim incentives for efficient precaution. See, e.g., Robert D. Cooter & Thomas S. Ulen, *Law and Economics* 310 (2000). It is possible our conclusions support this argument but that, too, is beyond the scope of this article.

[FN81]. For an article advocating the abolition of comparative, as well as contributory, negligence, see Jeffrey O'Connell, *A Proposal to Abolish Contributory and Comparative Fault, with Compensatory Savings by Also Abolishing the Collateral Source Rule*, 1979 U. Ill. L. Forum 591.

[FN82]. Keppel, et al., *supra* note 65, at 171.

[FN83]. Sidney Siegel, *Nonparametric Statistics for the Behavioral Sciences* 116 (1956).

[FN84]. Robert R. Sokal & F. James Rohlf, *Biometry, The Principles and Practice of Statistics in Biological Research* 433-4 (2d ed. 1981).

[FN85]. Sokal & Rohlf, see *supra* note 81, at 433-4.

[FN86]. Siegel, see *supra* note 81, at 120-1.

[FN87]. Siegel, see *supra* note 81, at 121.



[\[FN88\]](#). Siegel, see supra note 81, at 121.

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