2-10-2016

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51 GEORGIA LAW REVIEW 1 (*forthcoming, 2016*)

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ABSTRACT

The article debunks the consensus that in concerted action, concurrent causes and alternative liability situations, the actual causation requirement is missing. While courts and scholars insist that in these cases tort law holds liable parties who clearly did not cause the victim's harm, this article offers a novel approach. Using a simple model and applying it to leading decisions, it shows that a party who *did not* and *could not* even potentially injure the victim could nevertheless be a but-for reason for the harm. The article also challenges claims that causation theories like concerted action, substantial factor and alternative liability are fair to the victim or that they are designed to deter actors from engaging in "antisocial" activities. In deviation from the prior literature, this article reveals that these causation theories reduce the parties' incentives to take care and result in more, rather than fewer, accidents. This article further shows that, despite lip service to the contrary, tort law promotes harmful activities that judges declare immoral, antisocial and illegal. The article argues, however, that in many cases this result can be justified on efficiency grounds. The article concludes that the but-for test should have a larger role in causation analysis, and it provides a number of policy recommendations to courts and lawmakers.

Keywords: Actual Causation, Concerted Action, Concurrent Causes, Alternative Liability, But-for, Substantial Factor, NESS, Efficiency, Welfare, Fairness, Deterrence.

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I. INTRODUCTION

In many situations involving multiple forces, it is clear that one or a number of tortious actors did *not* injure the victim.[1] Courts insist that in these cases there is *no* causal link between the non-injuring actor's behavior and the victim's harm. Yet, they nevertheless hold them liable. This article focuses on three such celebrated paradigms that have proven to be both vexing and immune to analysis. The first type—concerted action situations—deals with cases where actors, while pursuing a common plan, engage in a tortious activity that harms the victim. A standard example is a drag race where a pedestrian hit by one driver can also recover from other drivers and even spectators.[2] The second type—concurrent causes[3]—includes situations where a number of independent forces join and harm the victim. Here, the classic example is of two fires, which merge and destroy the victim's cabin. Courts openly declare that neither fire can be said to be the actual cause of the victim's harm, but despite the lack of causation, they impose liability on all tortious actors.[4] The third type—alternative liability cases—involves cases like *Summers v. Tice*, where two hunters independently and carelessly shot in the victim's direction. Although it was clear that one of the hunters did *not* injure the victim, the court held both liable.[5]

Courts have developed different theories to impose liability on the non-injuring actors. From the least to most controversial, these include concerted action, substantial factor and alternative liability.[6] Although the reasoning behind these doctrines and the conditions necessary for their application vary considerably, there seems to be a consensus that "in all these cases the requirement of proving [actual] causation is relaxed."[7] Actors who clearly did not

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[1] A tortious actor can be a non-injuring party. For example, consider a scenario in which A, encouraged by B, a spectator, punches V. Both A and B act tortiously although it is clear that only A is the injurer (B is the non-injuring tortious party). For a similar use of these terms see RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 26 cmt. h (2010) (defining the term "tortious conduct") [hereinafter "RESTATEMENT (THIRD)"].

[2] RESTATEMENT (SECOND) OF TORTS § 876 illus. 2 (1982); RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT LIAB. § 15 illus. 1 (2000).

[3] The term "concurrent causes," as used here, refers to situations where independent multiple forces combine and harm the victim. These causes can be necessary or unnecessary, sufficient or insufficient, simultaneous or sequential.

[4] Anderson v. Minneapolis, St. P. & S. S. M. Ry. Co., 179 N.W. 45 (Minn. 1920). RESTATEMENT (SECOND) OF TORTS § 432(2) (applying the substantial factor test).

[5] Summers v. Tice, 199 P.2d 1, 3 (Cal. 1948).

[6] For an explanation of these doctrines *see infra* Part IV.A., Part IV.B., and notes 79-81 respectively.

[7] Boim v. Holy Land Foundation for Relief and Development, 549 F.3d 685, 695, 697 (7th Cir. 2008) (explaining actual causation is relaxed "because otherwise there would be a wrong and an injury but no remedy"); Shackil v. Lederle Labs., a Div. of Am. Cyanamid Co., 561 A.2d 511, 515 (N.J. 1989) (noting that "'concert of action,' with its offspring, 'enterprise liability' [and] alternative liability" are exceptions to the otherwise "indispensable" cause in fact requirement).

"cause" the victim's injury (e.g., the spectator in the drag race or the hunter who missed Summers) are held liable for a wrong committed by another. The reason for "relaxing" the actual causation requirement is twofold. The first reason is fairness to the victim. The argument is that the victim who suffered injustice—"a harm…caused by the wrongful conduct of another"—deserves to be compensated.[8] The second reason for imposing liability on careless actors who admittedly did not injure the victim is to deter them from what is perceived as an antisocial[9] and inefficient activity.[10] Liability expresses a social distaste and "moral condemnation for the actions of all of the defendants."[11] It is meant to incentivize them to take care and avoid putting others at risk.

This article offers a novel theory for multiple causes situations where the victim suffers an indivisible harm. First, it debunks the myth that group causation theories such as concerted action, substantial factor and alternative liability are fair or that they are designed to promote deterrence.[12] In deviation from the prior literature, this article shows that these group causation theories share an important feature. They all *reduce* the parties' incentives to take care and result in more, not fewer, injuries. In other words, group causation theories may well be the very reason the victim suffers injustice in the form of harm to her person or property. To illustrate this point, consider Example 1 below.

> **Example 1: A Drag Race**. A number of actors consider whether to engage in a drag race. Each can estimate her own benefit from the activity but not others'. The benefit can be tangible (e.g., a promised prize) or intangible (e.g., the thrill from the ride, breaking the law or even harming someone). For simplicity, assume that each participant expects to benefit $40 from the activity. The expected harm to the victim is $90. Each driver can avoid the accident if she invests $35 in precaution.

Some scholars note that the actual causation requirement in these cases is outright abandoned. *See e.g.*, Wex Malone, *Ruminations on Cause-in-Fact*, 9 STAN. L. REV. 60, 97 (1956).

[8] Richard W. Wright, *Liability for Possible Wrongs: Causation, Statistical Probability, and the Burden of Proof*, 41 LOY. L.A. L. REV. 1295, 1300 (2008) [hereinafter "Liability for Possible Wrongs"].

[9] RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT LIAB. § 15 (2000) (Reporter's Notes). *See also* W. Page Keeton et al., PROSSER AND KEETON ON THE LAW OF TORTS § 41, at 266–68 (5th ed. 1984) [hereinafter "PROSSER AND KEETON"]. RESTATEMENT (THIRD) § 27; David Fischer, *Products Liability—An Analysis of Market Share Liability*, 34 VAND. L. REV. 1623, 1629, 1633 (1981) (explaining that in *Summers* "each defendant's conduct was unquestionably of an antisocial nature" and noting the law of causation "seeks… to discourage socially undesirable activity").

[10] MICHAEL FAURE, TORT LAW AND ECONOMICS 84 (2009); STEVEN SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW 108 (1987); Malone, *supra* note 7, at 89.

[11] *Boim*, 549 F.3d at 697; RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT LIAB. § 15 (2000) (Reporter's Notes) (explaining the rationale behind concerted action theory); RESTATEMENT (THIRD) § 27; PROSSER AND KEETON, *supra* note 9, § 41, at 266–68.

[12] The term "group causation theories," as used here, simply refers to theories courts apply to "relax" the actual causation requirement in the three paradigmatic cases. It is not meant to imply that a collective caused the harm as suggested by Mark Geistfeld, *The Doctrinal Unity of Alternative Liability and Market Share Liability*, 155 U. PA. L. REV. 447, 453 (2006).

To understand the multi-party dynamic, first consider a party consisting of two individuals, for example, two drivers. In this party, each driver is better off taking care.[13] If a driver takes care she can expect a gain of $5 (40-35). In contrast, if she drives carelessly she can only expect a loss.[14] Next, consider a party consisting of three individuals, for example, the same two drivers and a spectator who encourages them to race. Now the parties' incentives change dramatically. Each driver is better off if *both* drive *carelessly*. This is because under concerted action theory everyone—the two careless drivers and the spectator who encourages them—will be held liable. This means that each can expect to pay only $30 (90/3).[15] Now driving carelessly is worthwhile. With a benefit of $40 and an expected loss of $30 each driver can expect to gain $10 (40-30)—twice the gain compared to driving carefully. This explains the parties' agreement to race carelessly. The result is that concerted action theory—a theory that is premised on fairness and deterrence[16]—can dilute the actors' expected liability to the point that neither will have an incentive to take care. In the drag race hypo, tort law *encourages* the very "antisocial" behavior it purports to condemn.

Second, the article challenges the consensus that group causation theories abandon the actual causation requirement. Like the prior literature, this article concedes that in these cases tort law holds liable parties who did not injure the victim (e.g., the spectator). Yet, in deviation from this literature, the article shows that a non-injuring party can nevertheless be a but-for reason for the victim's harm. This is well illustrated by Example 1. Recall that as part of a group of two drivers each is better off taking care. Yet, the same two careful drivers would agree to drive *carelessly* if a spectator encourages them. The spectator is thus an actual cause of the harm. Indeed, but-for the spectator's tortious conduct, the driver who hit the pedestrian would have taken care and the pedestrian would not have been harmed. Note that it was *not* the words of encouragement that enticed the careless driving. Rather, it was the law of causation. It was the knowledge that under concerted action theory, all participants (including the spectator) would shoulder the cost of an accident that caused the injuring driver to forgo taking care and hit the victim. The result is that each of the parties is an actual cause and thus equally responsible for the harm. This includes the party who did not injure the

[13] The example ignores the possibility that the same activity can give rise to both civil and criminal liability in order to first analyze the effect of the tort system. The effects of the criminal system on the parties' incentives are explored later in Part IV.C.

[14] If one driver drives carelessly she can expect to pay $90, gain $40 and lose $50. If both drive carelessly, each can expect to pay $45 (90/2), gain $40 and thus lose $5. The result is a dominant strategy to take care. Each driver is better off taking care regardless of the others' actions.

[15] With some simplifying assumptions it is possible to show that the expected liability of each party is independent of the apportionment regime (whether it is joint and several liability, several liability or any other regime). *See* J. Shahar Dillbary, *Apportioning Liability behind a Veil of Uncertainty*, 62 HASTINGS L. J. 1729, 1756–69 (2011). *See also infra* Part IV.

[16] Abel v. Eli Lilly & Co., 343 N.W.2d 164, 176 n.19 (Mich. 1984) (concerted action "seems to have developed to deter hazardous group behavior."); Lyons v. Premo Pharmaceutical Labs, 406 A.2d 185, 190 (N.J. Super. 1979) ("the purpose of this theory is…to deter anti-social behavior.").

victim (e.g., the non-hitting driver)[17] and a party who could not have hit the victim (e.g., the spectator). The same dynamic occurs in the case of alternative liability and concurrent causes situations.[18]

The remainder of this article is organized as follows. Part II reviews the prior economic literature and shows its deficiencies. This literature, for the most part, ignores the challenges that multiple causes cases pose. Members of the law and economics movement often mention one of the paradigmatic cases, but neglect to explain why the law imposes liability on actors who did not injure the victim.[19] This is hardly surprising given that one important line of this literature is explicitly willing to dispose of causation altogether.[20] Another strand of the literature views causation as a means to limit the scope of liability. It argues that "too little" liability—holding an injurer liable for only a portion of the harm she inflicted—may result in sub-optimal care levels; "too much" liability—holding one liable for an injury she did not inflict—may result in sub-optimal activity levels.

In deviation from this literature, Part III shows that in the context of multiple causes, "too little" liability can actually lead to optimal care levels; and "too much" liability can increase activity levels. Building on a model I developed elsewhere,[21] I show that group causation theories encourage group wrongdoing and that doing so can be socially desirable.[22] Moreover, the more tortfeasors

[17] To see why the harm is unlikely to occur absent the non-hitting driver, consider a case in which one driver is encouraged to drive carelessly by a third party (e.g., a passenger or spectator). If the driver agrees to drive carelessly, she can expect to pay \$45 (90/2) and lose \$5 (40-45). Accordingly, the driver will take care for an expected gain of \$5 (40-35). But if the party includes three individuals—the same driver and spectator *and* another driver—both drivers will be better off if they drive carelessly. Because under concerted action theory each driver will be held liable, regardless of whether she hits the pedestrian, each of the drivers can expect to pay \$30 and thus gain \$10. The result is that but-for the non-injuring driver's tortious behavior the hitting driver would take care and the harm would be avoided.

[18] *See infra* Part III (discussing the parties incentives) and Part IV.A (discussing actual causation).

[19] Cooter and Ulen, for example, discuss *Summers* simply as an example of an unintentional tort. ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 188 (6th ed., 2011). They later revisit the example only to explain that "[u]nder traditional rules of tort liability, only the hunter who actually caused the harm is liable; the hunter who missed is not liable." *Id*. at 201. *See also* SHAVELL, *supra* note 10, at 109 (noting that determining "which of several archers shot the arrow that struck the [victim]" can be hard to ascertain).

[20] *See infra* note 24 and accompanying text.

[21] J. Shahar Dillbary, *Tortfest*, 80 U. CHIC. L. REV 953, 958 (2013) (focusing on socially beneficial activities in alternative care situations—that is, cases where either party alone can avoid the harm). The cases discussed here, on the other hand, are for the most part joint-care cases. To avoid the victim's harm, a number of parties must take care. Moreover, this article does not focus on socially beneficial activities. Rather, it analyzes many activities that courts say they are trying to chill.

[22] In Example 1, behaving carelessly in a group of three or more actors is socially desirable if one assumes with the law (although judges vehemently deny) that the pleasure to the tortious actors from the activities and even harming others, should be given weight. Under this view, taking care will result in an expected welfare-gain of \$15 (40x3-35x3), whereas if neither takes care, total welfare will double to \$30 (40x3-90). This assumes, for simplicity and without loss of generality,

engage in the activity—the more shooters, the more drivers and spectators attend the race, and the more actors set fires that merge—the more welfare is enhanced. In these cases, group causation theories define the pool of defendants whose liability must be diluted in order to encourage welfare-enhancing accidents.

Part IV—the heart of the paper—turns to debunk the consensus that group causation theories like concerted action, substantial factor and alternative liability abandon the actual causation requirement. Part IV.A. shows that courts and scholars have been too quick to concede that the but-for test fails in cases of concerted action, concurrent causation and alternative liability. It reveals that in some cases the tortious behavior of each of the non-injuring parties is necessary for the harm. In other cases it *seems* that no one party is necessary for the harm although it could be that every one is, and thus that each actor is a but-for reason for the harm.[23] Finally, this part shows that even in cases where neither party is necessary for the harm, a presumption of actual causation against the tortious parties will increase societal welfare.

Armed with these new insights, Part IV.B. turns to offer a more holistic approach to the seemingly disparate paradigmatic cases. Using the simple model and applying it to leading decisions, this part hypothesizes that the three group causation doctrines can be, to some extent, interchangeable and provides some anecdotal evidence that they are. Part IV.C. focuses on the relationship between tort law and criminal law. It investigates cases where the actors' behaviors may result in both criminal and civil liability (e.g., drag races). This part shows that in such cases, the two legal systems seem to clash: Criminal law deters the parties from engaging in activities that tort law, via its group causation theories, encourages. It then offers an explanation that is premised in institutional design and provides recommendations to courts and policy makers.

Part IV.D. uses concurrent cause situations as a case study to investigate some of the positive and normative implications of the model. Unlike the Restatement (Second) and the Restatement (Third), Part IV.D. concludes that those whose tortious behavior "contributed" only trivially to the victim's damage should be liable for the *entire* harm. Part IV.D. also sheds light on cases where multiple insufficient forces combine—an issue with regard to which the two Restatements sharply diverge. It explains why parties should be liable for a harm that none could cause alone. The explanation is not premised on the fairness rationales that (mis)guided the drafters of the Restatements, courts and scholars. Rather it is based on economic theory. It shows that in these cases, each actor could be an actual cause of the *entire* harm and should thus be equally responsible.

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that the spectator, like the drivers, benefits $40 from (watching) the race and that she will incur a cost of $30 if she exercises care (e.g., the cost of restraining herself from encouraging the parties). The private benefits of the actors are discussed in Part III.C, *infra*.

[23] For example, if four actors engaged in drag racing in Example 1. In such a case each participant could argue that the harm would have occurred even if she acted carefully because of the careless actions of the other three participants.

Part V discusses the assumptions and limitations of the model. The model does not assume that courts and individuals are omniscient. Nor does it assume that they can determine the value each wrongdoer places on the tortious activity, or the wrongdoer's cost of precaution. In fact, it assumes the opposite: that information is prohibitively costly and that each party can estimate her cost and benefit from the activity, but not others'. Still, the model is limited in scope. To begin with it focuses on the three paradigmatic cases. The model also assumes that each party can engage in ex-ante cost-benefit analysis (although it can easily be extended to cases where such calculations are not feasible).

Part VI analyzes one important alternative to group causation theories. To date, courts have considered only two options. In the three paradigmatic cases, the choice, we are told, is whether (a) to apply a group causation theory and hold all actors (including non-injuring actors) liable; or (b) exempt these actors from liability and leave the victim remediless. Part VI then turns to investigate a third option: the one-party-pays-all rule. Under this rule, liability for the entire harm is imposed on one party only. This can be the party who physically injured the victim (if only one such party exists and is known), or someone chosen randomly. After analyzing this alternative regime, Part VI shows that although under certain conditions, group causation theories and the one-party-pays-all rule may lead to the same results, from an efficiency standpoint, it is preferable to apply a group causation theory. Part VII provides concluding remarks.

II. THE ECONOMICS OF ACTUAL CAUSATION

Actual causation was—and in many ways still is—the black sheep of the law and economics movement. And, as is often the case with black sheep, at least one line of the literature—led by giants like Coase, Landes and Posner, and Calabresi—was willing to dispose of causation altogether.[24] For them "a case in which causation is an issue [can be simply resolved] by asking how the case should be decided consistently with the [Learned] Hand Formula."[25]

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[24] FAURE, *supra* note 10 ("The original economic theory of tort law deliberately rejected an explicit role for a causation doctrine in determining liability"); WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF TORT LAW 229 (1987) (explaining why "the idea of causation can largely be dispensed with in an economic analysis of torts" and concluding that "the injurer 'causes' the injury when he is the lower-cost avoider of it but not otherwise."); Guido Calabresi, *Concerning Cause and the Law of Torts: An Essay for Harry Kalven, Jr.*, 43 U. CHI. L. REV. 69, 85 (1975) ("One could do away with the but for test and employ other methods to… [determine] whether avoidance is worthwhile"); William M. Landes & Richard A. Posner, *Causation in Tort Law: An Economic Approach*, 12 J. LEGAL STUD. 109, 124-25 (1983) (discussing the rationale for alternative liability and noting that "we can analyze this type of case using a modified Hand formula without explicitly discussing causation"). Richard Epstein, *A Theory of Strict Liability*, 2 J. LEGAL STUD. 151, 165 (1973) ("Both Calabresi and Coase, then, share the belief that the concept of causation should not, because it cannot, play any role in the determination of liability for harms that have occurred.").

[25] LANDES & POSNER, *supra* note 24. According to the Hand formula "liability depends upon whether *B* [the burden of precaution] is less than *L* [the severity of the harm] multiplied by *P* [the

Others were willing to recognize a limited economic role for actual causation. Shavell, for example, focuses on the role of causation in curbing actors' liability. Too much liability, he explains, will not affect the optimal level of care, but it will result in over-deterrence (sub-optimal activity levels).[26] Too little liability will result in under-deterrence (sub-optimal levels of care). To see why, suppose that engaging in a certain activity (e.g., hunting) creates a 10% chance that the victim will incur a $100 damage and that the cost of taking care is $4. Holding the actor liable for harm she inflicted will incentivize her to take care. By paying $4 on precaution upfront, she can avoid an expected judgment of $10 (100x10%). Suppose now that, if the actor engages in the activity, she will be arbitrarily liable for two harms: The harm she inflicted *and* a $400 harm that she did *not* inflict and which materializes at a 20% chance. It is easy to show that the "excess" liability will not alter the actor's incentive to take care. If she takes care, her expected liability is $84—the $4 cost of precaution and the $80 (400x20%) expected damages for the harm she did not inflict. If she does not take care, her expected liability will be higher: $90 (400x20%+100x10%).[27] Either way, taking care reduces her expected liability by $6 (from $10 to $4 if she is only liable for damages she inflicted or from $90 to $84 if she is also liable for the second harm). Too much liability, however, can negatively impact activity levels. Suppose for example that the actor in the example above benefits $7 from the activity. If the actor's liability is limited to damages she inflicted, she will engage in the activity and take care (7>4). But, if the actor is also liable for an additional $400 damage she did not inflict, her expected loss will be so high that she would forgo the activity (7<$84 if she takes care or $90 if she does not).

Shavell's groundbreaking contribution focuses, for the most part, on simple cases when one party causes harm to another. Shavell did, however, address situations like *Summers*, where it was clear that one careless party injured the victim but the other did not.[28] He explains that "neither hunter could be said to be a cause in fact of the injury," but he nevertheless justifies the imposition of liability on economic grounds.[29] If the court did not impose liability on both, he argues, the result would be to "*inappropriately* weaken the incentive of the injurers to avoid the harm," because it would mean that from the hunters'

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probability of harm]: i.e., whether B < PL." *See United States v. Carroll Towing Co.*, 159 F.2d 169, 173 (2d Cir. 1947).

[26] SHAVELL, *supra* note 10.

[27] A popular example is a cricket field owner who negligently erected a 9 foot fence instead of 10 foot (the proper height) fence. Liability should be imposed for balls flying over 9 feet, but below 10 feet. Holding the owner liable for balls flying above 10 feet is imposing "crushing" or "unrestricted liability." It will find her liable for harms that would not have been avoided even if she had taken optimal care. Such crushing liability will not alter her incentive to take care. *See* THOMAS J. MICELI, THE ECONOMICS APPROACH OF LAW 59-61 (2004); Marcel Kahn, *Causation and Incentives to Take Care Under the Negligence Rule*, 18 J. LEGAL STUD. 427 (1989).

[28] Steven Shavell, *An Analysis of Causation and the Scope of Liability in the Law of Torts*, 9 J. LEGAL STUD. 463, 494 (1980).

[29] *Id*.

perspective, engaging in the activity is costless.[30] Shavell expresses a similar concern in his seminal book on accident law with regard to concurrent causes cases.[31] As the drag racing example shows, the conclusion is over-broad. Imposing liability on multiple actors dilutes the parties' incentives to take care. But the result is not necessarily "inappropriate." It could be economically sound. In the drag racing example, if liability were imposed only on the driver who injured the victim, a welfare enhancing accident would not take place.[32] The injuring driver would take care and avoid the harm (35<90/2).[33] On the other hand, if the injuring driver shares liability with two non-injuring participants, neither will take care, nor should they. Taking care is not cost-justified. The parties would need to spend an aggregate amount of $105 (35x3) to avoid a $90 expected harm. Moreover, the activity, *if conducted carelessly*, increases total welfare. It yields $120 (40x3) in benefits compared to a $90 harm, thus producing an expected surplus of $30 (120-90).

Scholars and courts analyzing multiple causation situations often rely on Shavell's insights.[34] They explain that imposing liability on those who acted

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[30] *Id* (emphasis added).

[31] SHAVELL, *supra* note 10 at 164. Shavell analyzes the effect of different liability regimes on parties' incentives to take care. The analysis relies on an example that involves two polluting factories, A and B, whose costs of precaution are $6 and $8 respectively. The probability that a $1,000 accident will occur is 8% if neither takes care, 7% if A or B takes care and 6% if both take care. Social welfare would be reduced by $76 if A takes care (7%x1,000+6), $78 if only B takes care (7%x1,000+8), and $74 if both take care (6%x1,000+6+8). Shavell shows that a strict liability regime would lead to an inefficient result (neither would take care) because the diluted liability would weaken the factories' incentive to take care. He then adds that "the importance of the problem of inadequate incentives under strict liability could be substantial where the number of injurers is large" and that the problem will increase with the number of injurers. *Id*. at 166. Shavell is correct that with more actors, liability would be diluted further, but what he misses is that at some point the result could be economically justified. To illustrate this point, suppose that each factory benefits $4.50 from the activity. Neither A nor B will take care (4.50<6) or operate (4.50 < 30 [6%x1000/2], 35 [7%x1000/2], 40 [8%x1000/2]). Nor should they. Assume now that there are twenty factories of type A, and that if one takes care, the risk of a $1,000 harm is reduced from 8% if no one takes care to 7%, but if two or more take care, the harm will be avoided. The socially desirable result is that only two take care. In such a case, each of the two factories that took care can expect a loss of $1.50 (4.50-6) and each of the remaining factories can expect a profit of $4.50. The problem is that absent agreement, no one would agree to take care. Still, each would have the incentive to act without care, in which case each can expect a profit of $0.50 (4.50-80/20). Total welfare will also increase by $10 (4.50x20-80). This second best scenario is possible only because liability was diluted.

[32] *See supra* note 17.

[33] Each of the two drivers has a 50% chance of being the injurer and thus being held liable for the $90 harm.

[34] *See e.g.,* David A. Fischer, *Insufficient Causes*, 94 KY. L.J. 277, 295 (2005); David M. Schultz, *Market Share Liability in DES Cases: The Unwarranted Erosion of Causation in Fact*, 40 DEPAUL L. REV. 771, 779 (1991). *See also* Smith v. Eli Lilly & Co., 560 N.E.2d 324, 330 (1990) ("The identification element of causation in fact serves an important function in tort law. Besides assigning blame-worthiness to culpable parties, it also limits the scope of potential liability and thereby encourages useful activity that would otherwise be deterred if there were excessive exposure to liability.") (citing Fischer, *supra* note 9, at 1628-29); Eberhard Feess & Ulrich Hege,

wrongfully toward the victim (but did not harm her) is necessary to increase deterrence. Consider, for example, Fischer's analysis[35] of *Tidal Oil Co. v. Pease*—a concurrent causes situation similar to the two-fires hypo.[36] In *Tidal Oil* the plaintiff's cattle died after drinking from two streams, each polluted by a different group of defendants. There was no evidence that any polluter alone could have caused the damage. Yet, the court held all defendants liable. It explained that where the defendants' independent acts combine to produce an indivisible harm, each is responsible for the entire result "even though the act of any one defendant might not have caused it."[37] Fischer justifies the holding based on, among other things, economic theory:

> The rationale for liability is strongest in cases like *Tidal Oil Co. v. Pease*…*Liability promotes deterrence* by giving each tortfeasor an incentive to avoid making a contribution to injury. *Economic theory supports liability because the only way to prevent the accident is to deter a sufficient number of tortfeasors from acting*. This is a "simultaneous joint tort" where a fixed level of care by all (or most) of the tortfeasors is required to prevent the injury and harm.[38]

Fischer is patently wrong. To begin with, *Tidal Oil* is not necessarily a case where "each tortfeasor" must take care to avoid the harm. For example, assume that the pollutants of nine out of ten operating factories must combine to cause the victim's harm. Assume also that taking care costs each factory $35. Here, requiring all actors to take care at a total cost of $350 (35x10) does not make any sense. The same accident can be avoided if two factories take care at a total cost of $70 (35x2). Second, and more importantly, the conclusion that imposing liability on a large number of actors "promotes deterrence" is faulty. If anything, imposing liability on a large number of defendants will dilute their incentives to take care and will result in more (not fewer) accidents. If deterrence is the "strongest" "rationale for imposing liability" in case like *Tidal Oil*, it is a very poor rationale. Finally, as Part III below explains and the drag race example implies, the rationale for imposing liability is the opposite. It is to allow welfare enhancing accidents. For example, if the harm to the victim is $30 and each of n factories benefits $40 from the activity, the activity is efficient (40n>30) and not even one factory should take care (40>30).

Efficient Liability Rules for Multi-Party Accidents with Moral Hazard, 154 J. OF INSTITUTIONAL AND THEORETICAL ECON. 422 (1998) (arguing that if each injurer "pays only a fraction of the harm, then total care levels will be inefficiently low since each injurer will only take a part of the total harm into consideration").

[35] Fischer, *supra* note 34 (arguing that "the rationale for liability is strongest in cases like Tidal Oil Co. v. Pease.").

[36] Tidal Oil Co. v. Pease, 5 P.2d 389, 391 (Okla. 1931) (noting neither polluter alone could have caused the harm but the polluters' combined power proved deadly). *See also* Magnolia Petroleum Co. v. Dexter, 57 P.2d 1155, 1156 (Okla. 1936); RESTATEMENT (SECOND) OF TORTS § 433A illus. 15 (1965) (basing illustration on *Tidal Oil*).

[37] *Tidal Oil Co.*, 5 P.2d at 391.

[38] Fischer, *supra* note 34 (emphasis added).

This article further shows that the conventional wisdom, stated by Shavell, does not hold in the three paradigmatic cases. According to this wisdom, too much liability results in suboptimal activity levels, whereas too little liability results in suboptimal precaution levels. However, things are different in the multiple causes situations discussed here. Part III below shows that by imposing liability on those who did not injure the victim—what the literature views as "excessive liability"—the law encourages welfare enhancing activities; by imposing "too little" liability on those who injured the victim (but can expect to pay a fraction thereof), the law encourages actors to take the optimal level of care.

III. A NEW RATIONALE: ENCOURAGING WELFARE ENHANCING ACCIDENTS

A. Dilution of Liability Can Result in Optimal Precaution Levels

Dilution of liability, a phenomenon I discussed elsewhere,[39] provides another explanation for group causation theories like the one applied in *Summers*. In these cases, courts first determine which defendants acted tortiously towards the victim (i.e., whether there was careless shooting, the encouragement of reckless driving, or the unreasonable setting of a fire). Courts then apply a group causation theory to establish a causal link between each of the tortious actors—those who actually injured the victim and those who did not (e.g., the hunter who did not injure Summers, the spectator in a drag race who clearly did not injure the victim, and the polluters in *Tidal Oil* who may not have contributed to the victim's damage). The result of holding all tortious actors liable is a dilution of each actor's liability. The actor who injured the victim can expect to pay less than the harm she actually caused. The non-injuring yet tortious actors can expect to pay a fraction of the damages stemming from an injury they clearly did not inflict. By imposing liability on all tortious actors and then diluting each actor's liability, the law encourages actors to engage in the activities and take precautions if they are cost-justified, and forgo taking care if they are socially undesirable. In other words, concerted action and other group causation theories serve as a sorting mechanism. They deter actors from engaging in "bad" or welfare decreasing accidents, but they encourage them to engage in "good" or welfare enhancing accidents.

To understand the role dilution of liability plays in alternative liability cases, reconsider Example 1 above—with one exception. To illustrate how similar the causation theories are, assume that instead of drivers in a drag race the participants are hunters. For convenience the example (as applied to hunters) is reproduced below.

[39] Dillbary, *supra* note 21, at 953.

Example 1: Hunting. A number of actors consider whether to hunt. Each can estimate her own benefit from the activity but not others'. The benefit can be tangible (e.g., the market value of the game) or intangible (e.g., the pleasure from hunting). For simplicity, assume that each participant expects to benefit $40 from the activity. The expected harm to the victim is $90. Each hunter can avoid the accident if she invests $35 in precaution.

A hunter should and will take care if she is the only one hunting. Taking care allows the hunter to avoid an expected judgment of $90 at a low cost of $35 and even expect a profit (40>35). The result does not change if two are hunting concurrently. Total benefits from taking precaution outweigh the costs (90>35x2), and each enjoys an expected gain of $5 (40-35). But in the case of three hunters, taking precaution is not cost-justified. Requiring each hunter to take care results in a total cost of $105 (35x3) only to prevent a $90 damage to the victim. As Table 1 below demonstrates, taking care becomes more and more costly and socially undesirable as the number of hunters increases. With five hunters, taking care comes at a cost of $175 (35x5), almost twice the cost of the injury ($90). If, on the other hand, the actors do not take care, social welfare more than quadruples (increasing from $25 to $110).

		With Precaution		**Without Precaution**		
Number of Hunters h	Total Benefits 40h	Total Cost 35h	Total Welfare 40h-35h [40]	Indiv. Exp. Liab. 90/h[41]	Indiv. Net Gain 40-90/h	Total Welfare 40h-90[42]
0	-	-	-	-	-	-
1	40	35	5	90	-50	-50
2	80	70	10	45	-5	-10
3	120	105	15	30	10	30
4	160	140	20	22.5	17.5	70
5	200	175	25	18	22	110

Table 1: The Costs and Benefits From Hunting With and Without Precautions

The conclusion is that efficiency requires that when three or more hunters engage in the activity, none take care. Why then does alternative liability hold all hunters liable—those who injured the victim and those who did not? The reason is not deterrence, nor is it moral disdain towards the actors' behavior.[43] In fact, the

[40] When precautions are taken, the potential victim is not damaged and each hunter realizes a net profit of $5 (40-35). Total welfare is thus equal to $5h, where h is the number of hunters. It can also be calculated as the sum of benefits, 40h, minus the total cost on precaution, 35h, or 40h-35h.
[41] With h careless hunters, the expected liability of each is 1/h(90) or 90/h. For example, with three such hunters, each can expect to pay one-third of the damage, or $30.
[42] Without precaution the total expected cost is the $90 expected harm to the victim. Total welfare is thus the sum of benefits to the wrongdoers, 40h, minus the expected cost, $90, or 40h-90.
[43] For a different view, *see* Fischer, *supra* note 9, at 1629-30, 1632; Malone, *supra* note 7, at 84.

opposite is true. *Liability is imposed on all actors in order to dilute their incentives to take care and allow them to engage in socially desirable accidents*. Put differently, doctrines like alternative liability, which hold all tortious actors liable for the victim's injury, may be the very reason the parties do not take care. The reason for imposing liability in these situations is the courts' inability to distinguish between welfare decreasing and welfare maximizing accidents. The problem is that determining the exact moment where taking precaution becomes inefficient (here, when the number of actors is three or higher) is a daunting, if not an impossible, task. A court that would like to conduct the cost-benefit analysis would need to measure and compare the benefits that each of the several actors garner from the activity and compare these subjective benefits to the cost of precaution and the victim's expected injury. Courts rarely have such information. Even if the cost of precaution can be calculated, the subjective value of hunting to each individual hunter is not usually observable.

The solution is to defer to the market participants—that is, the actors— the decisions as to whether to engage in an activity and whether to take care. To do so, courts first determine whether the actors were liable. The analysis is individual. Here, each actor had a duty to the victim that she breached because taking care was cost-justified (35<90). This is the working of the celebrated Learned Hand Formula. Then, in the second step, courts use a group causation doctrine such as alternative liability to hold each of the hunters liable for the entire harm. The effect of imposing liability on a number of actors, including those who clearly did not injure the victim, is an effective dilution mechanism. It encourages the hunters to take care when doing so is cost-justified. In our example, one hunter will take care, which is the socially desirable result (35<90). The same will happen with two hunters. Each hunter can expect a benefit of $5 (40-35) if she takes care, but a loss of $5 (40-90/2) if both act carelessly or $50 (40-90) if she acts carelessly when the other takes care. With three hunters none would want to take care, nor should they. The reason is that with three hunters, if none takes care, the expected liability of each is diluted by the alternative liability doctrine to 90/3, or $30. In such a case, the hunters are better off if they all forgo taking care. Acting careless in unison comes with an expected benefit of $10 (40-90/3). Acting carefully promises half of the gain: $5 (40-35).

In contrast, in a world without a doctrine like alternative liability, an accident that can and should be avoided may occur.[44] A group of two hunters will be better off if they collude and agree to act carelessly. The plaintiff will not be able to prove her case against the hunters because there is only a 50% chance that either of them caused it, and each hunter will be able to keep her entire $40 benefit. If alternative liability applies, the two hunters would take care. Taking care promises a net benefit of $5 (40-35). Acting carelessly promises a loss.

[44] Virtually all jurisdictions adopted some version of *Summers v. Tice*. *See* RESTATEMENT (THIRD) § 28(b) cmt. e ("Only two jurisdictions have rejected the concept of alternative liability since the Second Restatement").

To sum, the example reveals that the concern that the injurer will be subject to "too little" liability is overly broad. "Too little" liability can indeed result in less investment in precaution, but the result may be optimal. Forgoing care can increase total welfare. The next section focuses on the impact of group causation theories on *activity* levels.

B. Dilution of Liability Can Result in Optimal Activity Levels

In deviation from the prior literature, which argues that imposing liability on those who did not injure the victim can result in over-deterrence in the form of sub-optimal activity levels, this section shows that the opposite could also be true. Holding liable non-injuring actors can achieve optimal *activity* levels. To explain this point, reconsider Example 1 with the only exception that now the cost of precaution is higher: \$60 (rather than \$35). For convenience, the modified example is reprinted below:

> **Example 1B: Hunting**. A number of actors consider whether to hunt. Each expects a \$40 benefit. The expected harm to the victim is \$90. Each hunter can avoid the accident if she invests \$*60* in precaution.

Here, unlike before, hunting is welfare decreasing if conducted by one or two hunters. With one hunter, the activity confers a benefit of \$40, but inflicts an expected damage of \$90. Taking precaution does not make sense either because the cost of precaution outweighs the benefit from hunting (40<60). The result does not change if two hunters engage in the activity (40+40<60x2, 90). In both cases, it is best if the actors avoid the activity (hunting) altogether. But with three hunters, a harmful activity that was inefficient if conducted by one or two becomes socially desirable. With three hunters the benefits from engaging in the harmful activity outweigh the expected cost to the victim (40x3>90) and efficiency requires that *none* take care (60x3>90).

As I showed elsewhere, a liability rule combined with a dilution mechanism can result in welfare-increasing accidents by deferring the decision of whether to act and take care to market actors.[45] This is exactly what group causation theories like alternative liability do. In the above example, it will incentivize two actors (by subjecting them to liability) to avoid hunting (40<60, 90/2). But it encourages group wrongdoing if three (or more) actors hunt. By holding each liable for the entire \$90 harm, but diluting the hunters' individual liability to \$30 (90/3), alternative liability makes it worthwhile for each to engage in the activity and, forgo taking care. The result is that if the three act in unison each actor can obtain a gain of \$10 (40-90/3).[46]

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[45] Dillbary, *supra* note 21, at 953.

[46] The same dynamic occurs in concurrent cause cases. Suppose, for example, that in Examples 1 and 1B, the parties are not hunters or drivers, but are instead campers. Assume further that like the hunting example discussed in Part III.A., each camper alone can cause the \$90 expected harm to

C. Respecting Injurers' Subjective Valuations

Courts are aware of the fact that many activities come with *social benefits* that justify the harm to the victim.[47] Indeed, the Hand Formula itself is a recognition of this social policy. For this reason courts do not prohibit risky activities, although they do impose liability on the tortious actors. The imposition of liability ensures that the act produces more social benefits than harms. The following example is illustrative:

> **Example 2: Polluting Factories**. A number of factories are located next to the plaintiff's property. Like in *Tidal Oil*, none of the factories alone can destroy the plaintiff's property. Only if three or more factories operate without care will the plaintiff's property be harmed and destroyed. The value of the plaintiff's property is $90. Each factory expects to benefits $20 from the activity. Taking care is impossible (or too costly).

Here, producing and polluting is beneficial if *at least* five factories engage in the activity (20x5>90). The substantial factor doctrine achieves this result by holding each tortious actor liable. One, two, three or even four factories will not engage in the activity because the expected liability of each (90, 90/2, 90/3, 90/4 respectively) will outweigh the $20 private benefit. But five factories will be better off if they all engage in the activity because each can expect a profit of $2 (20-90/5). In cases like *Tidal Oil*, courts justify the activity (even if indirectly so). They hold the actors liable, but aware of the large benefits that these activities entail, they refuse to issue injunctions that would bring them to a halt.[48] After all, in a pristine, pollution-free world, one could not drive cars, construct roads or produce electricity.

But not all activities are equal, or so we are told. Many activities do not provide what judges and policy makers often term as *social* benefits.[49] In fact, in

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the victim. Assume also that each camper values the activity at $40. The analysis would be identical to that in Part III.A. if each camper can take care at a cost of $35; the analysis would be identical to that in Part III.B. if each can take care at a cost of $60. In either case, the incentives of the campers to take care will be reduced, their incentives to engage in a harmful activity will increase, and the benefits from doing so will increase more and more as others join the activity.

[47] *See e.g.*, Lennon v. Metro. Life Ins. Co., 504 F.3d 617, 623 (6th Cir. 2007) (discussing a game of Russian Roulette and explaining that "at some point the high likelihood of risk and the extensive degree of harm risked, weigh[s] against the lack of social utility of the activity").

[48] *See* Michie v. Great Lakes Steel Div. Nat'l Steel Corp., 495 F.2d 213 (6th Cir. 1974); Bliss v. Anaconda Copper Min. Co., 167 F. 342 (C.C.D. Mont. 1909); Madison v. Ducktown Sulphur, 113 Tenn. 331 (Tenn. 1904).

[49] Some economists have also taken a similar view. *See e.g.*, MICELI, *supra* note 27, at 75 (noting that "in some cases the benefit to the injurer of inflicting harm may exceed the cost to the victim, but the benefit is not socially valuable"); Guido Calabresi, *Of Tastes and Values*, YALE LAW & ECONOMICS RESEARCH PAPER NO. 500 (Aug. 2014), *available at* http://ssrn.com/abstract=2483947 (challenging the Becker-Stigler view that the economist cannot say much about the relative merits of values and tastes; arguing that as a society we care about

all of the three paradigmatic cases, one can point to cases where the actors attach subjective valuations to activities that benefit only them, harm innocent third parties, and are frowned upon by society. *Summers* is a borderline case. The actors in *Summers* may have valued the activity because of the market value of the game, or because of the pure enjoyment from shooting and the act of hunting. Despite the obvious tangible and intangible benefits associated with shooting, courts have often treated shooting cases as involving a unique class of unappreciated activities.[50] Unlike *Summers*, in many alternative liability cases the value of the risky activity to the actors could be wholly intangible and, at least outwardly, socially unappreciated. Horseplay (e.g., when actors throw erasers at each other) and paintball games[51] are examples of risky activities that confer intangible benefits—the subjective hedonic feeling generated by the game—upon the actors but no one else.[52] So is the case with the campers who can enjoy the comfort of their homes, but prefer the enjoyment of the outdoors and the warmth of a campfire. And, in a drag race, it is likely the illegal activity, the speeding and perhaps the possibility of harming, which generate the pleasuring effect.[53] In all of these cases the participants assume the inherent risk of injury that comes with an activity of which society disapproves, although they may often hurt innocent third parties.[54]

What courts have failed to understand (or admit) is that they respect the subjective values that actors place on activities that harm others—the very subjective values that the same courts denounce as immoral and antisocial. Consider again a drag race—the classic case of a "concerted action" situation. Premised on the criminal concept of aiding and abetting, the theory of concerted action imposes liability not only on those who pursue a common plan to commit a tortious act, but also on those who furthered the tortious act by encouraging the wrongdoers.[55] The pronounced purpose of the doctrine is to satisfy the actual causation element in situations where it is clear that some of the defendants did not injure the victim (e.g., a spectator),[56] or in situations where the plaintiff cannot

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certain values more than others, and that identifying these fundamental values is not only possible, but also critical for lawmaking).

[50] *See* Malone, *supra* note 7, at 43.

[51] For examples where innocent parties were injured in horseplay and paintball games see, respectively, *infra* notes 63 and 81 and accompanying text.

[52] One may argue that such games provide some tangible benefits such as survival and shooting skills. Note that there may be a market price for activities that confer intangible benefits to their participants, as with paintball facilities where one is required to pay a fee for the right to participate in the game.

[53] Of course some actors, like the winner, may also receive a tangible benefit (e.g., a prize).

[54] *See e.g.,* RESTATEMENT (THIRD) § 28(b) illus. 12 (discussing a paintball game conducted in a secluded area in which the participants injure a faultless victim).

[55] PROSSER AND KEETON, *supra* note 9, § 46, at 323.

[56] Marshall v. Celotex Corp., 691 F. Supp. 1045, 1047 (E.D. Mich. 1988) ("Under the concert of action theory, a person may be held liable for concerted activity which causes injury to another, though that person was not the cause in fact of the injury."); In re Methyl Tertiary Butyl Ether Prods. Liab. Litig., 379 F. Supp.2d 348, 372 (S.D.N.Y. 2005); Wilson v. Firestone Tire & Rubber Co., 1986 Mich. App. LEXIS 3192 (Mich. App. 1981) affirmed in Wilson v. Firestone Tire &

identify the injurer (e.g., if it is not clear which of the drivers injured the victim).[57] The reasons for imposing liability—as with the other group causation theories discussed here—are fairness to the victim and the societal distaste for the defendants' behavior. "*Concerted action… express[es] moral condemnation* for the actions of all of the defendants, refusing to let the individuals escape from liability by claiming that their participation in the tort was less than that of the other defendants or that they did not themselves cause the plaintiff's injury."[58] Its "purpose… is…to deter anti-social behavior."[59]

Yet despite its benevolent goals—condemning what are framed as immoral acts and promoting fairness to victims—group causation theories like concerted action incentivize the very acts they purport to condemn and deter. To explain how, consider a case in which, unlike Example 2 (polluting factories), the benefits to the parties would not be considered acceptable. For example, assume that in a drag race it is the illegality of the activity or the possibility of harming one that generates the value to parties. The example is summarized below:

> **Example 1C: The Benefits from Driving Tortiously**. A number of actors consider whether to engage in a drag race. Each expects a $40 benefit provided the activity is tortious. The expected harm is $90.[60]

Here, a drag race with two drivers is clearly undesirable. It brings a total benefit of $80 (40x2), but it inflicts an expected cost of $90. Concerted action seems initially to align the actors' incentives with society's. Neither driver will engage in the activity because her private benefit, $40, is outweighed by the expected liability of $45 (90/2). But suppose the party consists of three individuals (for example, two drivers and a spectator). Now the law of actual causation makes an illegal, condemned activity worthwhile. Because concerted

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Rubber Co., 932 F.2d 510 (6th Cir. 1991); David W. Robertson, *The Common Sense of Cause in Fact*, 75 TEX. L. REV. 1765, 1781-82 (1997) ("The concert-of-action approach was used to solve the cause-in-fact problem").

[57] Sindell v. Abbott Labs., 149 Cal. Rptr. 138, 144 (Cal. Ct. App. 1978) (holding that "the rationale of the use of that theory to satisfy the element of causation in a situation where a plaintiff cannot identify the culpable defendant").

[58] RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT LIAB. § 15 (2000) (Reporter's Notes) (emphasis added). *See also* Bierczynski v. Rogers, 239 A.2d 218, 221 (Del. 1968) (holding that it could be inferred from the circumstances that the defendants have agreed to engaged in a car race, although not explicitly so, and noting that the activity is prohibited by law in many states); Hood v. Evans, 126 S.E.2d 898 (Ga. Ct. App. 1962) (imposing liability to a non-driver who had signaled the start of the race); Hanrahan v. Cochran, 12 A.D. 91, 94 (N.Y. App. Div. 1896) (noting that the horse racing in a crowded street was a criminal act and holding a defendant who "did not actually" injure the victim liable).

[59] *Lyons*, 406 A.2d at 190. *See also Abel*, 343 N.W.2d at 176 n. 19 (noting that concerted action "seems to have developed to deter hazardous group behavior.").

[60] Example 1C is identical to Example 1B in that in both taking care is not an option. The difference is that while in Example 1B the cost f taking care outweighed, $60 the benefit from taking care, $40, in Example 1C taking care will render the activity valueless (i.e., the activity will be so dull as to confer no benefits upon the participants).

action theory holds everyone (drivers and spectators) liable in case of an injury, if all partake in the activity, each will have an expected liability of $30 (90/3) and can thus expect a net gain (40>30).

What some may find surprising is that—despite lip service to the contrary—the law prefers the actors' subjective enjoyment from engaging in a condemned activity over the victim's interest in being free from harm. In the above example, the result can be justified on economic grounds if one accepts that the aggregate private benefits from the activity to the participants, $120 (40x3), outweigh the expected cost to the victim, $90. But if the law views such activities as so socially undesirable that they should be eliminated, and it is not willing to respect the pleasuring effect of inflicting harm on another, the result is puzzling. Viewed this way, group causation theories like concerted action fit well within the *traditional* tort framework. They provide wrongdoers with a license to harm so long as the subjective benefits to the injurers from harming outweigh the damage to the victim. The price of the "license" (in the form of the expected judgment) can be quite cheap: $30 (90/3) in the above example. And, the more actors engage in the activity the cheaper the license to harm becomes.

Courts and scholars seem to have missed this point. Consider for example the following excerpt from Judge Posner's decision in *Boim*, a case decided under the Antiterrorist Act, but according to tort law principles:

> As we explained in *United States v. Boyd*, 475 F.3d 875, 877 (7th Cir. 2007) [a criminal case], 'firing multiple shots from a powerful gun ... in the downtown of a large city at a time when pedestrians ... are known to be in the vicinity creates a risk of harm that, while not large in probabilistic terms, is 'substantial' relative to the gratuitousness of the defendant's actions.... An activity is reckless when the potential harm that it creates ... is wildly disproportionate to any benefits that the activity might be expected to confer.... *The emotional gratification that defendant Boyd derived from shooting into the night, though perhaps great, is not the kind of benefit that has weight in the scales when on the other side is danger to life and limb, even if the danger is limited, as it was here*.[61]

The claim that the "emotional gratification" of the defendant is not a benefit that the law considers in the scales of justice may be true in the criminal justice system where liability is not diluted. Indeed, if two actors shoot recklessly and hit a third, in many jurisdictions each will be subject to the same penalty regardless of whether she was the actual shooter. Of course, the parties may still elect to engage in the activity if they believe that the benefit from the criminal act outweighs the expected cost, but their criminal liability is not diluted because

[61] *Boim,* 549 F.3d at 692 (holding, *en banc*, that financial contribution to a terrorist group constitutes an act of terrorism under the Antiterrorist Act, 18 U.S.C. §§ 2331(1), 2333.) (emphasis added).

other criminals join them.[62] It is also true that in tort cases, courts ignore such private benefits when they determine, using the Learned Hand Formula, whether an actor breached her duty to the defendant. Tort law, however, does *not* ignore the actors' subjective pleasure from harming another. *Keel v. Hainline* is illustrative.[63] In *Keel*, forty junior high school students showed up for class but their instructor did not. While waiting for the instructor, some of the students engaged in what they termed "horseplay." This included throwing chalk, wooden blackboard erasers and other instruments at each other. The activity took place for thirty minutes until one of the students who did not participate in the fight was injured in her eye by an eraser thrown by Jennings. There was no ill intent. The court found that the students merely intended to strike each other "in sport" and "without intent to [injure]."[64] Relying on concerted action theory, the court held liable all those who participated in the horseplay. This included Keel, who did not throw anything but only retrieved erasers and handed them to others.

Holding Keel—who clearly did not injure the victim—liable is unlikely to deter actors from taking part in such unappreciated "pastime" activities.[65] If each participant values the horseplay at $40, and the expected damage is $90, participating in the game is worthwhile so long as there are at least three participants (40>90/3). The game is more enjoyable (and thus more enticing) as the number of participants increases. While with three participants each enjoys a net value of $10 (40-90/3), with ten participants the enjoyment more than triples to $31 (40-90/10). *Keel* and other concerted action cases are examples of how the law *respects* private valuation of parties engaging in activities it ostensibly holds to be unacceptable or immoral.

Boim exemplifies even further what some may consider a perverse outcome of group causation theories like concerted action. The plaintiffs in *Boim* were the parents of a Jewish teenager killed in a terror attack in Israel by Hamas terrorists. The suit, brought against Islamic charities, claimed that their financial support to Hamas constituted an act of terrorism under the Antiterrorism Act (ATA). In an *en banc* opinion written by Judge Posner, the Seventh Circuit Court of Appeals agreed. It held that the plaintiff only has to show that (a) the defendant provided material support; (b) to a terrorist organization (c) knowing (or with recklessness or indifference as to the fact) that the ultimate recipient carries out violence.

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[62] In fact, crimes like felony murder may even increase the actors' individual liability as others join the group. For example, if A decides to rob a bank she will be criminally liable for robbery. Assume now that A, the original robber, decides to get some help and rob together with a fellow criminal. If A's associate, unbeknownst to her and even against her explicit will and instructions, kills someone during the robbery, even accidently, A, the non-shooting robber may be held criminally liable for felony murder as well as robbery.

[63] Keel v. Hainline, 331 P.2d 397 (Okla.1958).

[64] *Id.* at 399.

[65] *Id.* (explaining that a horseplay is not a "an innocent and lawful pastime, even though done in sport and without intent to injure" and holding that "such conduct is wrongful").

Importantly, relying on tort law's concerted action theory,[66] the court found the plaintiff does *not* have to show a causal link between the contribution and the activities of the terror organization. The court explained that civil "suits against financiers of terrorism can cut the terrorists' lifeline"[67] and serve "as a counterterrorism measure."[68] The belief that concerted action theory can deter financiers of terrorism by imposing on them civil liability is overly optimistic. By now you should be able to see that it may actually *encourage* terrorism. Assume each financier values the terrorist organization's harmful activities at $200,000 (measured by the maximum amount she is willing and able to donate) and that the expected loss to American citizens located in the terrorists' area of operation (Israel in the case of *Boim*) as a result of the group's operations is $10 million. Concerted action theory only means that if more than fifty entities contribute to the terror-group, then contributing, at least in the eyes of the donors, is worthwhile (200,000>10M/51). It also means that the net subjective benefits from contributing (in the form of allowing the terrorists to further their goals) increase with the number of contributors. For example, with 100 contributors, the expected liability of each is only $100,000 (10M/100), which means that for those making contributions, contributing was ultimately worthwhile.

The ATA, it should be noted, imposes automatic treble damages.[69] Punitive damages can indeed deter. But, punitive damages have a limited effect.[70] In the above example, treble damages may not deter those who are willing to support terror-groups if the number of contributors is larger than 300 (100,000>3x10M/301), or if each contributor values the terrorists' harmful activity more than $600,000 (600,001>3x10M/50). The ATA's imposition of punitive damage is a move in the right direction. Punitive damages serve as an anti-dilution mechanism. But to make this mechanism effective, the law should allow punitive damages to be adjusted upwards as the number of contributors increases. Still, the defendants in *Boim* may be deterred from donating to a terror organization because of the criminal liability imposed upon them. But if criminal liability does not produce the desired effect, civil liability may reinforce the deterrence effect if it is not overly diluted.

IV. CAUSATION ACTUALLY

A. Causation Actually and the But-For Test

The theory pressed in this article also reveals that courts and scholars have been too quick to concede that actual causation is "relaxed" or abandoned in the three paradigmatic cases. *In deviation from the prior literature, this article argues*

[66] *Boim*, 549 F.3d at 692 ("[P]rudence counsels us [to] analyze the tort liability of providers of material support to terrorism under general principles of tort law").
[67] *Id*. at 691.
[68] *Id*. at 690.
[69] *Id*. at 692.
[70] Dillbary, *supra* note 21, at 953.

that in many of these cases the conduct of each of the non-injuring actors was either the actual cause of the victim's harm or, for policy reasons, should be treated as such.

The main test for determining whether the defendant's conduct was the actual cause of the victim's harm is the but-for (or sine qua non) test. It asks whether the harm would not have occurred but-for the defendant's misconduct. The test implies that the defendant's tortious conduct is a *necessary* condition for the harm.[71] Courts and scholars have long concluded that the but-for test fails miserably in situations involving multiple actors. The claim is that neither the spectator in a drag race, nor the campers who carelessly set the merging fires, nor the shooter who did not injure Summers—were *necessary* for the victim's harm. The harm, it is argued, would have occurred regardless of whether these actors engaged in the activity. In other words, in each of these cases, the victim's fate was already doomed with or without the acts of these defendants—or at least that is how courts and scholars approach the issue. This widely accepted description is faulty.

1. *A Non-Injurer Actor Can Be a But-For Reason for the Harm*. To begin with, in some cases the harm would not have occurred *but-for* the participation of those who did *not* actually injure the victim. To see this consider the following alternative liability example—a modified version of Example 1B above:

> **Example 1D: Alternative Liability (Hunting)**. A and B consider whether to hunt. Each expects a $50 benefit. The expected harm to the victim is $90. The cost of care is $60.

Neither A nor B would hunt alone. Hunting brings a private benefit of $50, but would cost $60 if the actor takes care or $90 if she does not. Hunting together, however, is worthwhile. Because alternative liability dilutes the expected judgment to $45 (90/2), the actors' best-case scenario (and the socially desirable result[72]) is that neither take care (45<60). In this situation, each would enjoy a surplus of $5 (50-90/2).

Now assume that the parties acted in their mutual best interests (i.e., carelessly), and as a result, A shot and injured the victim. Although it was A who physically injured the victim, B was equally at fault. *Indeed, but-for B's careless participation, A would not have carelessly engaged in the activity and would not have injured the victim*. In other words, but-for the non-injuring party—here, the party who *missed* the victim—the victim would not have been injured at all. The conclusion is that the conduct of each hunter is necessary to bring about the harm. Each is an actual cause of the harm. The conclusion stands in direct contrast to

[71] *See e.g.*, RESTATEMENT (THIRD) § 26 cmt. b ("a factual cause can also be described as a necessary condition for the outcome"); PROSSER & KEETON, *supra* note 9, § 41, at 265.

[72] Assuming one is willing to give weight to the hunters' private benefit, total welfare will increase by $10 (50x2-90), compared to a welfare loss of $20 (40x2-60) if both hunters take care and no benefit if the parties avoid the activity altogether.

Shavell's insight that in *Summers* "neither hunter could be said to be a cause in fact of the injury."[73]

2. *The Tortious Conduct of Every Actor in a Large Group is a But-For Cause of the Harm Even if the Harm Could Be Caused by a Smaller Group*. Sometimes even absent any one specific actor, the injurer would have engaged in the harmful activity. An example is where three hunters engage in the activity described in Example 1D above. Here, each hunter could argue that, as one party in a group of three, the harm would have occurred even absent her participation. The situation is similar to that of *Tidal Oil*, where neither actor's conduct was necessary or even sufficient to cause the harm. Yet, even in such cases, the traditional but-for test can apply. One reason is that even if participation by a small number of actors, m, is necessary to bring the harm, it could be the case that the m individuals will not engage carelessly in the activity unless joined by others. To illustrate, recall Example 2—a concurrent cause scenario—summarized below for convenience.

> **Example 2: Concurrent Causes (Pollution)**. The pollution released by each factory is too small to harm the nearby plaintiff's property. But if three or more factories operate without care, the plaintiff's property will be harmed and destroyed. The value of the plaintiff's property is $90. Each factory expects to benefit $20. Taking care is impossible.

Three factories could operate, pollute and destroy the lake but they would not do so. This is because, if the three factories operate, they can expect a net loss of $10 (20-90/3). In fact, no factory will be willing to operate unless it is part of a group of five (or more factories), in which case it can expect a net gain of $2 (20-90/5). The result is also socially desirable (20x5>90). Importantly, *each of these five factories is a but-for cause of the harm because the activity would not take place if only four factories were present*. More formally, the claim is that if the actions of a minimum of m actors (here, m=3) are necessary to harm the victim, it is still *necessary* that n*>m actors (here n*=5>m=3) participate for the activity to take place.

3. *Heterogeneous Valuations: Cases Where the Injurer Places a Low Value on the Activity and Would Decline to Engage in the Activity Unless Joined by a Sufficiently Large Group of Non-Injurers*. Recall Example 2 above but assume now that the parties are individuals (instead of polluting factories) who consider whether to participate in a drag race.

> **Example 3: Concerted Action (A Drag Race)**. Six actors consider whether to engage in a drag race (as drivers, passengers or spectators). Five of them, call them D1-D5, value the careless driving at $20. A sixth

[73] Shavell, *supra* note 28 at 494.

actor, D6, values the activity at $16. The expected harm to the victim is $90. Taking care is impossible.[74]

D6 will not join the activity even if she is invited by four of the other five individuals (D1-D4). The expected liability of $18 (90/5) will outweigh her benefits (16<18). But, together with the other five, drag racing becomes a winning proposition. The reason is that a group causation doctrine like concerted action will hold all six actors liable, thereby reducing the expected liability of each to $15 (90/6). Now, D6 can expect a benefit (16-15>0). If D6 was the actual injurer, then each of the other five participants, D1-D5, is also a necessary or but-for cause of the harm. *Indeed, it was only because D1-D5 tortiously engaged in the activity that D6, the injurer, elected to join the party*.

4. No One Specific Actor Seems to Be Necessary for the Harm But Everyone Is (a But-For Cause) or Reinforces the Decision to Behave Tortiously. Still, in some cases it seems that no one actor is the actual cause of the harm but, in fact, everyone is or—at the very least—reinforces each actor's decision to partake in the tortious activity. To see this consider a variation of the above example, with one exception: assume that everyone places the same value on the activity. For convenience, the modified example is summarized below.

> **Example 4: No One Actor Seems to be Necessary for the Harm**. Ten actors consider whether to engage in a certain tortious activity (drag racing, or careless camping or hunting). Each values the activity at $20. The expected harm to the victim is $90. Taking care is impossible.

Note first that four actors will not engage in the tortious activity because each can only expect a loss (20-90/4<0). With five actors things change. As part of a group of five actors, each can expect to pay less: only $18 (90/5) and gain $2 (20-18) from the careless activity.

But what if six or more actors engaged in the careless activity? How can it be said that the conduct of each actor in the *larger* group, for example ten actors, is a but-for cause of the victim's harm when only five are necessary to cause each to engage in the activity that wreaked havoc? Here, it is important to understand that although five actors were necessary to cause the actual injurer to engage in

[74] The activity is tortious if, for example, we assume that it is subject to strict liability. Liability may be imposed even under a negligence regime. Assume, for example, that the cost of care is $30. In such a case neither actor will take care (20<30). One may argue that in the latter case acting carelessly does not constitute a breach of a duty to take care because the total benefits to the actors outweigh the cost to the victim (20x5+16>90). Still, a court will likely hold each of the actors liable because of the individual nature of the cost-benefit analysis conducted by the court. *See supra* Part III. A. Note that each factory could have avoided the $90 harm if it were to invest $30 on precaution. The result will not change, if instead of individuals who consider drag racing, the actors were campers, each of whom could alone set a fire that would destroy the victim's cabin. In such a case substantial factor theory would have the same effect as concerted action theory.

the activity, with each additional actor, each participant can expect a higher profit. For example, while with five actors each can expect a $2 gain (20-90/5), with six actors the expected gain reaches $5 (20-90/6), and with ten actors $11 (20-90/10).

The higher profit margin does at least two things. First, it reinforces the decision of each actor to engage in the tortious activity (i.e., to drag race, pollute or hunt tortiously). Second, the higher profit margin incentivizes those who have high opportunity costs to join the tortious activity. For example, assume that a different activity (e.g., sun bathing) promises each actor a benefit of $10.50. Five actors will not engage in the tortious activity because the competing activity promises a higher gain (10.50>2). Nor would six, seven, eight or nine actors. Only if ten or more actors engage in the tortious activity will it be profitable enough (20-90/10>10.50) to convince the parties to forgo the competing activity. In other words, if ten actors engage in the tortious activity and one (or more) injured the victim, each of the ten tortious actors is a but-for reason for the harm.[75]

Example	Description
1	But-for the tortious behavior of the non-injuring party, the injuring party would not have engaged tortiously in the activity, and the victim would not have been harmed
2	But for the tortious behaviors of each of m actors, the victim would not have been harmed although the combined actions of m<n actors can injure the victim.
3	But for the tortious behaviors of each of the non-injuring parties, the low value injurer would not have participated toriously in the activity, and the victim would not have been harmed
4	But for the tortious behaviors of each of the non-injuring parties, the injurer with low opportunity costs would not have engaged tortiously in the activity, and the victim would not have been harmed. The increased gain from additional actors reinforces the parties' decisions.

Table 2: A Summary of Examples 1-4

For all of the reasons discussed in Examples 1-4 (summarized in Table 2 above), group causation theories treat *each* actor as if she were the marginal actor that brought the total number of actors to the threshold, n*. That is, each actor is treated *as if* she was the one that diluted the actual injurer's liability enough to entice the injuring party to engage in the activity that resulted in an accident. Thus, although one party physically injured the victim or her property, all actors

[75] The extra profit margin also incentivizes risk-averse actors to join the activity. The model thus far assumed that actors are risk neutral. The assumption is reasonable so long as a vibrant insurance market exists. But if some actors are risk averse, they may require a higher rate of return to be persuaded to engage in the risky activity. This will happen if a large enough number of liable actors join the activity. *See also infra* Part VII.6.

caused the victim's injury in the sense that but-for their tortious individual behaviors, the injury would not have occurred. The emphasis is on the *possibility* that all actors are a but-for cause, because there can be situations where some of the actors are clearly not necessary to bring about the harm—this is the subject of the next (and final) example.

5. The Conduct of Neither Actor is a But-For Cause, Yet the Conduct of Every Actor Should be Presumed to be the Actual Cause. Consider the following example.

> **Example 5: No One Actor is Necessary for the Harm**. Each of A and B values a certain tortious activity at $20. The expected harm to the victim is $5. Taking care is impossible.

Here, each actor would engage in the activity (even if she were the only one to do so) for an expected gain of $15 (20-5). Thus if one of the actors injured the victim, the injurer alone is a (but-for) cause of the harm. But what if two actors injured the victim at the same place and the same time, as in the case where both tortiously shot the victim or set fires that merged? No one actor seems to be necessary for the harm. Indeed, A would have engaged in the tortious activity regardless of B (20>5). And, for the same reason, B would have engaged in the activity regardless of A.

Still, one can argue that in the cases discussed here, each actor should be *presumed* to be a but-for cause of the harm. The reason is based in policy. Courts simply cannot distinguish cases where the conduct of each actor is a but-for cause of the harm, as shown in Examples 1-4, from cases where neither actor is a but-for reason from the harm, as is the case in Example 5. To be able to distinguish between these cases, courts will have to determine (a) the subjective value the tortious actors place on the wrongful activity (e.g., whether it is $20, $16, etc.); and (b) the subjective value the tortious actors place on competing activities (e.g., sun bathing)—that constitute the wrongdoers' opportunity costs. Even if courts attempted to do so (an attempt that is destined to fail), the result would be a fatal moral hazard. A defendant will always try to argue that she would not have acted the way she did but-for the others' tortious actions. If successful, other defendants will join the litigation and the judgment will likely be reduced. Ex-ante, it may chill activities or result in wasteful investment in care.

The solution is to shift the burden in all of these cases to defendants. The solution requires defendants to show that their activity was not a but-for cause of the victim's harm Overcoming the presumption that results from the burden shifting may seem—and probably is—an insurmountable task. If what underlies the presumption is the plaintiff's inability to prove that a tortious actor was a but-for reason for her harm, it could be equally impossible for defendants to exculpate themselves.[76] This means that the spectator in the drag race, the campers who

[76] *Compare Summers*, 199 P.2d at 4 (arguing that defendants are "in a far better position [than the plaintiff] to offer evidence to determine which one caused the injury" *with* Geistfeld, *supra* note

carelessly set fires that merged, and the hunter who missed Summers—will all be held liable.

While it is true that the presumption imposed on tortious defendants is likely to be impossible to rebut, this is not a serious concern for at least three reasons. First, tort law limits the pool of actors that are subject to group causation theories. In concerted action, the pool is limited to those actors who agreed with, incited and encouraged the injurers. In concurrent cause cases, the pool of defendants is limited to those who physically contributed to the harm (examples include polluting factories as in *Tidal Oil* or tortious actors whose fires merged or reached the cabin before it was consumed). And, in alternative liability, the pool is even more limited.[77] Second, each of the injuring and non-injuring actors behaved tortiously. Finally, and perhaps more importantly, the imposition of liability fulfills two functions: It compensates the victim and incentivizes the actors to engage tortiously in the activity when doing so is welfare enhancing. The actors who behave tortiously take the risk that their actions would place them under such a burden. They will thus engage in the activity only if they alone value the activity more than its expected cost (as in Example 5), or if they expect to be part of a larger group and thus anticipate that their liability would be diluted enough to justify their actions (Example 1-4). In either case the result is justified on economic grounds. It also leaves the ultimate decisions of whether to act and how much care to take with the tortious injurer—the party who is in the best position to make these decisions.

Such an impossible presumption is not foreign to tort law. In fact, courts use such a presumption when they apportion damages. The issue arises when multiple actors cause the victim an indivisible harm. Regularly, the plaintiff has the burden to prove not only that she was harmed, but also the extent of the harm caused by each defendant. When the harm is divisible, the mission is simple. But when the harm is indivisible (as in the case of merging fires), insisting on requiring the plaintiff to divide an indivisible harm would doom her case. For this reason, in cases of indivisible harm, courts shift the burden of proof to the defendants.[78] Courts not only admit that they impose an impossible burden, but they also analogize the problem to the two-fire hypo where injurers would escape liability if they are allowed to rely on what is believed to be a failing but-for test:

12, at 473 ("But neither defendant in *Summers* had better access to the evidence than the plaintiff") *and* Donald G. Gifford, *The Challenge to the Individual Causation Requirement in Mass Products Torts*, 62 WASH & LEE L. REV. 873, 901 (2005) (arguing that the "realistic effect" of burden shifting doctrines like the one announced in *Summers* "has been to impose liability [on the defendants]… because, in actuality, neither the plaintiff nor the defendant can prove which injurer's acts caused [the victim's harm].").

[77] *See generally* RESTATEMENT (SECOND) OF TORTS § 433B.

[78] *See also id.* § 433B(2); RESTATEMENT (THIRD) § 28 (shifting the burden of proof as to the apportionment to the tortious actors who exposed the victim to a risk of harm); DOBBS, THE LAW OF TORTS § 168 at 410, § 171 at 423 (2000) (hereinafter "DOBBS"); PROSSER AND KEETON, *supra* note 9, § 52, at 345.

> Nobody doubts that if two tortfeasors contribute to a single loss, each is liable in solido. This result is however scarcely logical so long as the injured person has the burden of showing that the tortfeasor whom he pursues caused the damage and how much he caused. On the other hand, since it is *impossible* to prove what share the act of either of the tortfeasors contributed, or whether it contributed any at all, if this prevailed, each would escape—an absurd result. To overcome this difficulty, the law imposes upon each tortfeasor the impossible burden of proof...*The situation is the same when one of the two contributing factors is not the result of an actionable fault: again, the single tortfeasor cannot be allowed to escape through the meshes of a logical net. He is a wrongdoer; let him unravel the casuistries resulting from his wrong*.[79]

Not surprisingly, the *Summers* court—the oft cited case for alternative liability—drew the exact same analogy:

> [I]t should be pointed out that the same reasons of policy and justice shift the burden to each of defendants to absolve himself if he can relieving the wronged person of the duty of apportioning the injury to a particular defendant, apply here where we are concerned with whether plaintiff is required to supply evidence for the apportionment of damages. If defendants are independent tortfeasors and thus each liable for the damage caused by him alone, and, at least, where the matter of apportionment is *incapable of proof*, the innocent wronged party should not be deprived of his right to redress. The wrongdoers should be left to work out between themselves any apportionment.[80]

Finally, the presumption suggested here might seem odd, but only because it is framed as such—that is, as a presumption. Indeed, concerted action, substantial factor and alternative liability theories can be viewed as presumptions of a but-for nexus that courts are willing to apply in limited settings (situations where these group theories are applicable).

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[79] Navigazione Libera Triestina Societa Anonima v. Newtown Creek Towing Co., 98 F.2d 694, 697 (2d Cir. 1938) (emphasis added) (internal citations omitted). *See also* RESTATEMENT (SECOND) OF TORTS § 433B(2) cmt. d ("The reason for the exceptional rule placing the burden of proof as to apportionment upon the defendant or defendants is the injustice of allowing a proved wrongdoer…to escape liability…").

[80] *Summers*, 199 P.2d at 5 (emphasis added). *See also* Wright, *Liability for Possible Wrongs, supra* note 8, at 1300-01 (relying on fairness rationale and arguing that in apportionment and alternative causes cases "the shift of burden of proof to the defendants is warranted as a implementation of interactive justice").

B. The Substitution Hypothesis

The theory pressed in this article offers a unified explanation for all three paradigmatic cases. But if the three paradigmatic cases are as similar as this article claims, one would expect courts, at least on the margins, to treat them as interchangeable. There is indeed evidence that courts are willing to substitute one group causation theory for another. Consider, for example, the following hypothetical. Suppose A and B play paintball in a secluded area and ask C to warn them if someone approaches. C notices an innocent party, V, and warns the players, but A and B ignore the warning and shoot at each other simultaneously. One of them, although it is not clear whom, hits V. The Restatement (Third) explains that A and B may be liable under alternative liability theory.[81] One could also argue that the parties engaged in concerted action. Although the common plan—a game of a paintball—was not intended to harm another, it was nevertheless pursued with disregard to the bodily and property interests of third parties. It is thus not different than the horseplay in *Keel* or the drag race that involves participants who enjoy the thrill of the ride, but do not intend to harm anyone.

Many courts have in fact taken the view that in such cases the plaintiff can recover under a theory of concerted action, alternative liability or both.[82] *McMillan By & Through McMillan v. Mahoney* is such a case.[83] In *McMillan*, the two defendants were shooting air rifles next to the plaintiff's home without any intention to injure anyone. One of them hit the victim, but it was impossible to determine whom. The defendants filed a motion to dismiss arguing that "the complaint is fatally defective in that it fails to allege concerted action and the facts as stated clearly indicate that only one of the minor defendants actually caused the injury for which plaintiffs seek recovery."[84] In a case of first impression, the Court of Appeals of North Carolina dismissed the motion and found that the plaintiff could recover under a theory of concerted action, alternative liability or both.[85]

Famous examples of two courts applying different group causation theories to near identical situation are *Oliver v. Miles*[86] and *Summers v. Tice*. In *Oliver*, Shamburger and Oliver drove to the countryside to hunt birds. Shortly after their car passed Miles, they stopped to shoot at a covey of partridges. When the birds flew over their heads and across the public highway, they simultaneously shot at the birds. One of the hunters struck Miles' eye. Unable to

[81] RESTATEMENT (THIRD) § 28(b) illus. 12.
[82] *See e.g.*, McMillan By & Through McMillan v. Mahoney, 393 S.E.2d 298, 300 (N.C. Ct. App. 1990) (reviewing such decisions and concluding that "[n]umerous cases [from different jurisdictions] allow a plaintiff to recover either under [alternative liability] theory, under a theory of 'acting in concert,' or under some combination of the two.").
[83] *Id*.
[84] *Id.* at 300.
[85] *Id*.
[86] Oliver v. Miles, 110 So. 666 (Miss. 1926).

identify the actual shooter, the court held both liable based on a concerted action theory.[87] "To hold otherwise," the court explained, "would be to exonerate both from liability."[88] The *Summers* court took a different approach. Like the court in *Oliver*, it held the two careless hunters liable, but it noted that to use concerted action theory would be to "strain[] that concept."[89] Instead, *Summers* fashioned what is now known as alternative liability to achieve the same result, explaining that the "real reason… is the practical unfairness" to the victim.[90] "If one can escape [liability] the other may also and plaintiff is remediless."[91]

The similarity between the different group causation theories (and the rhetoric that courts used to justify them) is further exemplified in *Moses v. Town of Morganton*—a concurrent causation case.[92] *Moses* involved three defendants that, although acting independently, were aware of each other's actions. Two of the defendants discharged waste into a creek above the plaintiff's land. The third defendant built a dam in a different location, which caused the water in the creek to back up, resulting in a deposit of the discharged waste onto the plaintiff's land. Importantly, the court found that each of the defendants acted independently and without agreement. Yet, it held each liable based on a theory of concerted action:

> If parties, although acting independently, know, or have reasonable grounds to believe, that their independent acts, combining with the independent acts of others, will create a result that will become a nuisance, and they do so causing damage, they become as it were joint wrongdoers ab initio, and are liable as joint tortfeasors. Where all have knowledge of the independent acts that create the result and continue the independent acts with knowledge, *this ipso facto creates a concert of action* and makes a common design or purpose. Any other position… would make plaintiffs practically remediless, although there is *a nuisance which all jointly concurred in and contributed to*, that is alleged made the plaintiffs' land valueless, and but-for such joinder the injury would not have occurred.[93]

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[87] *Id.* at 668 ("We think that they were jointly engaged in the unlawful enterprise of shooting at birds flying over the highway; that they were in pursuit of a common purpose; that each did an unlawful act, in the pursuit thereof; and that each is liable for the resulting injury to the boy, although no one can say definitely who actually shot him").
[88] *Id*.
[89] *Summers*, 199 P.2d at 3.
[90] *Id*.
[91] *Id.* at 4.
[92] Moses v. Town of Morganton, 133 S.E. 421 (N.C. 1926).
[93] *Id.* at 423 (emphasis added). *See also* Warren v. Parkhurst, 92 N.Y.S. 725, 727 (N.Y. Sup. Ct. 1904) aff'd, 93 N.Y.S. 1009 (App. Div. 1905) aff'd, 78 N.E. 579 (N.Y. 1906) ("[W]hile each defendant acts separately, he is acting at the same time in the same manner as the other defendants, knowing that the contributions by himself and the others acting in the same way will result necessarily in the destruction of the plaintiff's property. If necessary, in order to get at them, a court . . . may infer a unity of action, design, and understanding, and that each defendant is deliberately acting with the others in causing the destruction of the plaintiff's property").

The *Moses* court's reliance on deterrence and fairness to allow recovery for an otherwise remediless victim is identical to that in *Summers*, *Oliver* and *Keel*. And, it is patently wrong. Group causation theories like concerted action, substantial factor and alternative liability theory serve as a dilution mechanism. They often encourage, not reduce, accidents. And they will surely encourage, as they should, tortious activities, if the number of actors is large enough. But the *Moses* holding is correct in analogizing the situation to concurrent causes. In fact, the facts in *Moses* are quite similar to that of *Tidal Oil*. In both, neither actor alone could have brought the harm, nor was it clear that any of the actors was a "necessary" cause (it could be that the victim would have been harmed even absent one of the polluters in *Moses* and some of the polluters in *Tidal Oil*). And, in both cases, the law of causation imposed liability on all careless actors and then diluted it, thereby encouraging the parties to pursue the activity if it is cost justified.[94]

C. Tort law and Criminal Law

Thus far, for the ease of exposition and exposing the dilutive effect of group causation theories, this article has ignored the effects on the criminal system on the actors' behaviors. But in many cases the same acts or omissions can give rise to both criminal and civil liability. Substantial factor theory, for example, may be used to establish causation and hold liable those who maliciously set fires that destroyed the victim's cabin although the same acts may give rise to criminal liability. In *McMillan*[95] the court held that alternative liability can help the victim establish her case against the shooters who used air rifles in a residential area—acts for which the defendants in *Regina*[96] and *Boyd*[97] were held criminally liable.

Concerted action cases are perhaps more likely to give rise to both criminal and civil liability. Indeed, it is often noted that the historical origin of the concerted action theory is the criminal doctrine of aiding and abetting.[98] If that was ever the case, it is now time for concerted action theory to break away from its roots. The two theories are fundamentally different. It is true that both tort law's concerted action and the criminal concept of aiding and abetting impose liability on a group of actors, including non-injuring parties. But this is also where

[94] The numerical example discussed in Part III.C. *supra* with regard to *Tidal Oil* can apply with the same force to *Moses*.
[95] *McMillan*, 99 N.C. App. 448.
[96] *Regina v. Salmon* 6 Q.B.D. 79 (1880) is the criminal equivalent of *McMillan* and *Summers*. The three defendants fired from the same gun in a field bordered with roads and houses. Their shots where directed at a board posted on a tree. Neither intended to harm anyone, but one of them, although it was not clear whom, hit and killed a boy in a nearby tree-garden. All where convicted for manslaughter.
[97] United States v. Boyd, 475 F.3d 875, 877 (7th Cir. 2007) (discussed in *Boim*, 549 F.3d at 692). *See supra* notes 65-69 and accompanying text.
[98] *See supra* notes 55-57 and accompanying text.

the similarity between the civil doctrine and its criminal counterpart ends. What courts have missed is that by imposing liability on a large number of actors, tort law's concerted action theory *dilutes* the injurer's incentives to take care. Criminal liability, on the other hand, does the opposite. Criminal liability deters the parties by employing an anti-dilution mechanism. When A and B engage in a criminal activity in concert, each is subject to the same penalty, as if he injured the victim alone. Importantly, criminal liability is not apportioned between the participants. If drag racing is subject to a penalty of ten years, each party may receive the same penalty whether two or five actors engaged in the race. In fact, in some cases (e.g., felony murder) as the number of criminals increases, the expected liability of each may increase as well.[99] The parties' civil liability, however, will be diluted as the number of tortfeasors increases. If drag racing comes with an expected liability of $90, each of two tortfeasors can expect a liability of $45, but with nine tortfeasors each can expect to be liable only for $10.

One may argue that in cases where the same behavior can give rise to both criminal and civil liability, the effect of concerted action theory is only compensatory. There is some truth to the argument. When it comes to activities that are at the core of the criminal justice system, criminal liability may provide the anti-dilution mechanism that is missing in tort law. In the case of a murder committed by a group of defendants, the criminal liability could have a deterrent effect, tort law notwithstanding. Still, even with regard to crimes that would carry harsh penalties, it is important to understand the effect of the tort system on the criminal one. Tort law incentivizes parties to harm others when it is cost-justified to do so. In other words, tort law "dilutes" and corrodes the deterrent incentives of the criminal system. The issue is not trivial. Those interested in optimal deterrence would want to *increase* criminal fines and penalties or impose high enough punitive damages in cases where civil law corrodes the power of criminal liability. If, on the other hand, one accepts Judge Posner's view that civil liability imposed through concerted action serves "as a counterterrorism measure,"[100] one should *decrease* the penalties imposed by the criminal justice to system to avoid over deterrence.

Moreover, as an empirical matter, it is likely that in many cases, civil liability is not accompanied by criminal liability. Reasons vary. Some activities that would give rise to concerted action theory would not give rise to criminal liability. Even if criminal liability could attach, it does not mean that it would. The prosecutors may refuse to initiate such proceedings because of budgetary, political or other reasons. The victims may also refuse to press charges, as was the case in *Bierczynski*.[101] In that case, two drivers engaged in a race. One driver, Race, hit the victims' car and the other, Bierczynski, did not.[102] The victims sued and recovered from both drivers with the aid of concerted action theory. Yet, on

[99] *See supra* note 62 and accompanying text.
[100] *Boim*, 549 F.3d at 690.
[101] *Bierczynski*, 239 A.2d 218.
[102] *Id.* at 219.

the criminal front, they chose to press charges only against the injurer, Race, although under criminal law the acts of both drivers gave rise to criminal liability.[103] The higher standard of proof required in criminal proceedings may also increase the number of behaviors that would be subject to civil but not criminal liability.

The contradictory impact of the criminal and civil systems is puzzling. Why does the legal system use the criminal system to deter actors from engaging in a certain behavior while at the same time allowing tort law to dilute the incentive of the same actors to take care? One possibility is that the dual system is purposefully (even if not consciously) designed to allow the law to keep up with changing moral norms. Such a dual system ensures that the development of tort law—the product of judge made decision-making that is guided by efficiency principles—remains uninterrupted. If enough people would like to engage in a socially desirable activity, tort law allows them—in fact incentivizes them—to do so by diluting their liability. If the legislator does not want to respect the parties' private benefits, it can impose criminal liability and adjust fines and penalties upwards, thereby counteracting the effect of the tort system. Similarly, prosecutors may devote more resources to go after such actors. If over time the activity becomes less reprehensible or even acceptable, the legislator can remove the criminal liability or prosecutors may decide not to press charges. This explanation is consistent with the common law efficiency hypothesis.[104]

It may be appropriate to end this subsection with a cautionary note. Courts and policy makers should be aware of this unique institutional feature for at least three reasons. First, they should be careful in drawing analogies between the tort-based concerted action theory and the criminal doctrine of aiding and abetting, even when both are applied to identical situations (e.g., drag racing). Courts often ignore this point. In criminal cases involving multiple parties, they draw an analogy to tort cases where courts apply group causation theories. In tort cases they rely on criminal decisions, although the group causation theory that bears the same name leads to dramatically different results. The result could be over or under dilution of the parties' liability and thus inefficient activity and precaution levels. Second, those policy makers, enforcers and judges who would like to increase deterrence using the civil system should *reduce* the number of liable actors or impose punitive damages. Finally, those who analyze the effect of the legal system should not be swayed by the rhetoric of judges and policy makers who may declare one goal, but legislate, enforce or interpret rules in a way that achieves another.

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[103] *Id.* at 222 ("Rogers brought criminal charges against Race but not against Bierczynski after the accident").

[104] Although criminal law codifies many common rule principles, it is nevertheless code based and administered by those who are subject to lobbying and myriad of interests. *See generally* RICHARD POSNER, ECONOMIC ANALYSIS OF LAW 315-316, 713-714 (8th Ed.).

D. Re-Evaluating Concurrent Causes' Causation Doctrines

Thus far this article has explained what the law *does*. It has revealed that group causation theories incentivize actors to forgo care and engage in dangerous activities that courts seem to condemn and other areas of the law prohibit, but that efficiency welcomes. It has also explained why but-for causation is or should be present in cases where courts and scholars insist that it has long been abandoned. The theory proposed here, however, is not just descriptive. In fact, it has important implications for courts and policy makers. By focusing on concurrent causes situations as a case study, this chapter seeks to highlight some of these doctrines and normative implications. It begins with a review of the substantial factor test and its alternatives, including its newly adopted replacement—the NESS test. It then reveals that these theories are overbroad and may have even been mischaracterized. Armed with these insights, this subchapter turns to illuminate some of the most controversial issues that have been subject to debate.

D(1). Alternatives to But-For: the Substantial Factor and NESS Tests

One category of concurrent causes situations that has preoccupied courts and scholars for decades is that of "overdetermined-harm" cases. These are cases where the victim's harm would have been caused regardless of the tortious behavior of any one defendant.[105] The classic example is a situation where two actors independently and tortiously set fires, each of which could alone destroy the victim's cabin. As with concerted action cases, most courts and scholars have agreed that actual causation in such cases is missing. They explain that the but-for test requires that the defendant's tortious conduct be a *necessary* condition for the harm[106] and that the test fails for exactly this reason: neither fire is necessary.[107]

To avoid a situation where both actors escape liability, courts have replaced the but-for test with alternatives. The most famous and widely used is the substantial factor test, famously adopted by the Restatement (Second).[108] Others

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[105] Richard W. Wright, *Causation in Tort Law*, 73 CAL. L. REV. 1735, 1740 (1985) ("overdetermined-causation cases [are] cases in which two or more factors each would have been sufficient to produce the injury, so that none of them was a necessary condition for the injury."). *See also* DOBBS, *supra* note 78, § 168 at 410, § 171 at 414; RESTATEMENT (THIRD) § 26 cmts. I, b & j.

[106] *See supra* note 71 and accompanying text.

[107] PROSSER & KEETON, *supra* note 9, § 41 at 266; DOBBS, *supra* note 78, § 171.

[108] RESTATEMENT (SECOND) § 432(2) (a tortious behavior that alone could cause the harm is considered a cause of the victim's harm so long as it was "a substantial factor in bringing it about"); RESTATEMENT (SECOND) § 433A(2) cmt. i. *See also* DOBBS, *supra* note 78, § 171 at 415 ([The] test says that all defendants who are substantial factors in the harm are causes in fact."); PROSSER & KEETON, *supra* note 9, § 41 at 267-68. The substantial factor test applies also to situations where one fire was the result of the defendant's tortious act and the other of a force of nature. DOBBS, *supra* note 78, § 171 at 415. Under the test the two tortious actors are liable because both contributed to the damage.

have suggested, and at least one court has adopted, collective causation tests.[109] Under these tests the court asks whether the combined conduct of all defendants, viewed as one unit, is a but-for cause for the injury. If it is, the conclusion establishes but-for causation for each of the individual defendants in the group. More recently Wright has advocated for,[110] and the Restatement (Third) adopted,[111] a sufficiency test. The test asks whether the defendant's behavior is a necessary link (or element) in a chain (set) of actual events that alone can cause the harm. If so, causation is established. In the fire example there are two potential "chains," each consisting of one of the fires and the victim's house. Because each fire is a necessary link in a chain and each chain alone is sufficient for the occurrence of the harm—each fire is considered a cause of the harm. In other words, each fire is a necessary element of a sufficient set (NESS). The result does not change if two fires were necessary to cause the harm, but six fires merged and destroyed the victim's property. Here, each of the six fires is a NESS cause because each fire is a necessary element in a set that included one of the other five fires.[112]

The NESS test adopted by the Restatement (Third) is a clever "solution."[113] Its purpose is to provide an analytical framework in "overdetermined-causation cases that the [but-for] test fails to handle properly."[114] But it may be a "solution" for a problem that does not always exist. This article is the first to show that what some may easily and mistakenly perceive as a situation of duplicative causes, could in fact be a situation that can be handled by the good old but-for test. To see this, reconsider Example 1D, but assume that instead of hunters the parties are factories. For convenience the example is summarized below:

> **Example 6: Overdetermined Harm**. Two factories, F1 and F2, are located next to a $90 lake. Production brings an expected benefit of $50,

[109] Spaur v. Owens-Corning Fiberglas Corp., 510 N. W. 2d 854, 858 (Iowa, 1994); DOBBS, *supra* note 78, § 171, at 417; PROSSER & KEETON, *supra* note 9, § 41 at 268. Some even argue that group causation theories like alternative liability can be viewed as such collective causation rules. *See* John Makdisi, *Proportional Liability: A Comprehensive Rule to Apportion Tort Damages Based on Probability*, 67 N.C. L. REV. 1063 (1989).

[110] Wright, *supra* note 105, at 1793; Wright, *Liability for Possible Wrongs*, *supra* note 8, at 1303.

[111] RESTATEMENT (THIRD) § 27 illus. 1 (discussing the fires hypo and finding both actors to be the cause of the victim's harm); *Id.* § 26 cmt. j (reporter's note) (noting that the "substantial-factor test has not… withstood the test of time…has proved confusing and been misused"). The Restatement (Third) adopted the causal set model, which is consistent with Professor Wright's NESS test. For an explanation of the NESS theory, s*ee* RESTATEMENT (THIRD) § 26 cmt. c.

[112] Wright, *supra* note 105, at 1793 (explaining that according to NESS theory in the duplicative force case, each fire is an actual cause because each "was necessary for the sufficiency of a set of actual antecedent conditions that included only one of the other fires.")

[113] *Id.* at 1740-41 (1985) ("[The NESS test] resolve[s] the problematic causation cases that have resisted solution under all the alternative tests.").

[114] *Id.* at 1775.

but the process will completely destroy the lake. Each factory can avoid the harm if it installs a $60 device.

Here, one factory alone would not produce (50<60, 90). On the other hand, if each factory can be sure that another will join the activity *and* act carelessly[115] both will produce. Each will expect a profit of $5 (50-90/2) and total welfare will increase by $10 (50x2-90). Here, each factory is a but-for reason for the harm. F1 will not produce unless F2 joins the activity and acts carelessly. Similarly, F2 will not engage in the activity unless F1 produces without taking care. The point here is that what may seem to be an overdetermined case is a situation that can be analyzed under the traditional but-for test. This is but one example of a possible confusion. As Part III.C. above shows, there are many situations that can be resolved by the but-for test. This example illustrates that the need for the NESS test may be overstated, but it does not diminish the NESS test's ability to deal with such situations. As Wright notes, "when there is no overdetermined causation problem—that is, when there is only one actual or hypothetical sufficient set of conditions for a particular event—the NESS test collapses into the simple, traditional but-for test."[116]

In cases where there is more than one sufficient set, the NESS test adopted by the Restatement (Third) is helpful. Unlike the substantial factor test, it does not do away with causation or the but-for test.[117] Rather, it requires that each force is a necessary (or but-for) link in a chain of events that could alone cause the harm. However, the Restatement (Third)'s explanation that the new standard "comports with deep-seated intuitions about causation and fairness"[118] is less persuading. For the reason explained in Part IV.A. above, the substantial factor and NESS tests are dilution mechanisms. By increasing the number of liable actors, they reduce their expected liability and consequently, their incentives to take care. The perhaps counter-intuitive result from applying such theories is an increase in the number of accidents. For members of the law and economics movement, this may be acceptable if the accidents are cost-justified. For others, stating that the NESS test is "seated in deep intuition about causation and fairness" may seem like a stretch given that it may result in more accidents. The second explanation adopted by the Restatement (Third) is even more problematic. The claim is that exempting both actors from liability

[115] It will never be in a factory's best interest to take care because taking care comes with an expected loss of $10 (50-60) and is thus dominated by a decision not produce. Acting carelessly is also socially undesirable (60x2>100).

[116] Wright, *supra* note 105, at 1802-03.

[117] DOBBS, *supra* note 78, § 171 at 415-16 (criticizing the substantial factor test as one that "avoid[s] causal analysis," is devoid of any reasoning and simply "invite[s] the jury's intuition.").

[118] RESTATEMENT (THIRD) § 27 cmt. c; DOBBS *supra* note 78, § 171 at 415; PROSSER & KEETON, *supra* note 9, § 41 at 267-68; Malone, *supra* note 7, at 89 (noting that in such cases "[o]ur senses have told us that he did participate"); Robertson, *supra* note 56, at 1778 ("[O]ur intuition tells us [that in concurring causes cases] the but-for test, normally so reliable an analytical tool, suddenly turns unreliable").

would result in irony.[119] It will make a victim that was harmed by two tortious actors worse off compared to a victim that was injured by one of them only. The argument is that the irony is avoided by holding both parties liable. But the "solution" creates another irony. The attempt to help the remediless victim may be the very reason for her injury (although the result in many cases can be justified on efficiency grounds).

D(2). Insufficient and Unnecessary Causes

One area where the Restatement (Second) and the Restatement (Third) sharply diverge is with regard to multiple insufficient and unnecessary causes. The stark controversy can be illustrated by a hypothetical that has already drawn much attention.[120]

> **Example 7: Multiple Insufficient and Unnecessary Causes**. A, B and C independently, but simultaneously lean on P's car and as a result, the car rolls and falls over a cliff. The force exerted by each would have been insufficient to propel the car, but the combined forces of any two of them would.

Under Section 432(2) of the Restatement (Second), only when each force is a *sufficient* cause could the substantial factor test apply.[121] Drawing on this section, Robertson explains that because in the car hypo the forces exerted by neither A, nor B, nor C alone is sufficient, they all should be exempted from liability for lack of actual causation.[122] On the other hand, the Restatement (Third)

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[119] RESTATEMENT (THIRD) § 27 cmt. c. *See also* Jane Stapleton, *Legal Cause: Cause-in-Fact and the Scope of Liability for Consequences*, 54 VAND. L. REV. 941, 967 (2001) (explaining that in cases like the two-fire hypo insisting on the but-for test "would result in the victim of two tortious acts being treated worse by the law than the victim of a single tortious act (i.e., if he had only been shot at and hit by one careless hunter)," and explaining that application of an alternative test is justified "on the basis that the legal concern with upholding the 'dignity of the law' outweighs concerns with deterrence, fairness to defendants, and so on").

[120] RESTATEMENT (THIRD) § 27 illus. 3.

[121] RESTATEMENT (SECOND) § 432(2) ("If two forces are actively operating, one because of the actor's negligence, the other not because of any misconduct on his part, *and each of itself is sufficient to bring about harm to another*, the actor's negligence may be found to be a substantial factor in bringing it about") (emphasis added).

[122] David W. Robertson, *Causation in the Restatement (Third) of Torts: Three Arguable Mistakes*, 44 WAKE FOREST L. REV. 1007, 1022 (2009) [hereinafter "Restatement (Third) Three Mistakes"]. *See also* Fischer, *supra* note 34, at 281 ("Courts and scholars frequently explain the [substantial factor] exception to the but-for test as applying when the competing forces are independently sufficient to cause the injury" and concluding that the test "becomes relevant *only* in the case of 'multiple sufficient causes,'" as in the case of two fires tortiously and independently set by different actors such that each alone could cause the harm) (emphasis added); Robertson, *supra* note 56, at 1776 ("In the narrowest and only fully legitimate usage, the term describes a cause-in-fact test that is useful as a substitute for the but-for test in a limited category of cases in which "two causes concur to bring about an event, and either cause, operating alone, would have brought about the event absent the other cause . . ."") (citing Magee v. Coats, 598 So. 2d 531, 536 (La. Ct. App. 1992) (citing Lejeune v. Allstate Ins. Co., 365 So. 2d 471, 476-77 (La. 1978)). *But see*

treats the hypothetical as an example of an overdetermined case. The force exerted by each of A, B and C is considered a NESS cause because each is a necessary element for the sufficiency of a causal set that includes one of the other actors.[123]

Neither view is correct. Both Robertson and the Restatement (Third) assume that the but-for test must fail in these cases, and for this reason, both are wrong. It is easy to show that in many cases like the car hypo there is simply no need for the substantial factor or NESS tests. The traditional but-for test can do the job. This can be illustrated if, for example, one assumes that the value of P's car is $90 and that each of the actors is willing to pay $40 for the pleasure to lean a few seconds on a car that might fall (e.g., because they need the short rest or enjoy the thrill of possibly propelling the car). One actor will lean on the car because she will enjoy a benefit at no cost (it takes two to propel the car). Two actors will not lean because the expected liability of each, $45 (90/2), outweighs the expected benefit, $40. Three actors, however, would be interested in the activity provided they do so together for an expected net benefit of $10 (40-90/3). The parties may agree to lean simultaneously or, without having a verbal agreement, they can act in unison. The result is a socially desirable accident (40x3>90). Importantly, in such a case each actor's behavior should be considered a but-for reason for P's harm. A would not have caused the harm but-for the fact that B and C joined her. The analysis is identical for B and C. The conclusion is that the forces exerted by each of A, B and C are each a but-for cause of the harm.

D(3). Trivial Contributions

But what if more actors joined A, B and C such that the force exerted by each of them was trivial? Should a person who contributed 1% of the harm be (jointly and severally) liable for the entire harm? The answer seems to be "no" under both Restatements. The Restatement (Second) does not take an official position, but it notes that it would "perhaps be unjust" to hold an actor whose contribution was a "relatively small and insignificant part to the total harm."[124] Section 36 of the Restatement (Third) does not leave a place for doubt. "When an actor's negligent conduct constitutes only a trivial contribution to a causal set that is a factual cause of harm under § 27, the harm is not within the scope of the actor's liability."[125]

Against this consensus, the theory pressed in this article shows that in

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Warren, 92 N.Y.S. 725 (holding liable each of twenty-six defendants-mills, none of which was necessary or sufficient for the actual harm); *Tidal Oil*, 5 P.2d 389; Fischer, *supra* note 34, at 286 (reviewing the caselaw and providing additional examples).

[123] RESTATEMENT (THIRD) § 27 cmt f; Robertson, *Restatement (Third) Three Mistakes*, *supra* note 122, at 1022. *See also supra* note 112.

[124] RESTATEMENT (SECOND) § 433B cmt e. *See also* RESTATEMENT (SECOND) § 433 (explaining that whether the substantial factor test should apply depends, among other things, on "the number of other factors that contribute to producing the harm and the extent of the effect that they have in producing it").

[125] RESTATEMENT (THIRD) § 36.

many cases the actor whose contribution was marginal should be liable for the entire harm. To see why, recall Example 7 (the car hypothetical) and suppose with Robertson,[126] that eight actors, A-H, leaned on the car. Suppose that the forces exerted by each of A-G constituted thirty-three percent of the force necessary to roll the car (that is, the combined forces of any three actors can cause the harm). Assume also that the force exerted by the eighth actor, H, constituted only one percent of the necessary force.[127] Robertson concludes that H (and likely A-G) should be exempted for lack of actual causation:

> Under Restatement (Second) section 432(2), it is very plain that [H]'s force was neither sufficient to bring about the harm nor a substantial contribution to bringing it about; clearly [H] should be exonerated on factual-causation grounds. Restatement (Third) section 27 says that [H]'s conduct was a factual cause of the harm. Thus section 27 is overinclusive. The Reporters concede this, which in turn requires the creation of Restatement (Third) section 36, so as to exonerate [H] on scope-of-liability (proximate-cause) grounds.[128]

The Restatements and Robertson focus on the contribution of (or force exerted by) each actor—whether it is 1 %, 33% or 100%. But they miss the point. It could be that but for the trivial contribution, the harm would not have occurred at all. Consider the following example:

> **Example 8: Trivial Contribution**. A $90 lake will be destroyed if 100 units of pollution are released. Four factories, F1-F4, each released 50 units of pollution into the lake. The fifth factory, F5 released only 1 unit.

If each factory values the polluting activity at $20, the four factories, F1-F4, will not pollute. If they do, they can only expect a loss (20-90/4<0). But if F5 joins them and is held liable, the five actors would love to pollute. With a diluted expected liability of $18 (90/5), each can expect a gain (20-18). The point here is that but-for the trivial contribution of F5, the harm would not have happened. Importantly, the amount of pollution released by each of the actors is of no consequence. Whether it was 100, 50 or 1 unit(s) of pollution, each of the five actors is a but-for cause, *equally* responsible for the harm.[129]

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[126] Robertson, *Restatement (Third) Three Mistakes*, *supra* note 122, at 1022.
[127] *Id*.
[128] *Id.* at 1022-23.
[129] The same can be illustrated using Robertson's Example. If each of A-G values lying on the ground at $27.50, they will not lean on the car unless joined by H. Lying on the ground simply brings a higher benefit (40-90/7<27.50). On the other hand, if H joins the group, things change. Now leaning on the car becomes more profitable (40-90/8>27.50). Here, but-for H joining the group, the harm would not have happened. Importantly, the amount of force exerted by each of the actors is of no consequence. Whether it was 99% of the force or merely 1% of the force needed to push the car, each of the eight actors is a but-for cause.

A similar mistake is made by Fischer.[130] Fischer provides an example involving two polluting agents, X and Y that is reminiscent of the facts in *Tidal Oil, Warren* and Example 8 above.[131] X discharges twenty-five units of pollution. At the same time, Y discharges one unit. A minimum of fifteen units is enough to kill a cow. P's cow drinks the contaminated water and dies. Like Robertson, Fischer concludes that "Y's unit of pollution was not a cause of the cow's death because it was neither necessary nor independently sufficient to kill the cow."[132] As Example 8 demonstrates, whether Y is a cause, however, should not be narrowly decided based on the number of pollution-units it discharged. It could well be the case that but-for Y's action X would not have engaged in the activity to begin with. Y may have contributed one unit of pollution to the lake but by doing so it indicated its willingness to shoulder half of the burden.[133]

V. THE ASSUMPTIONS AND LIMITATIONS

A major goal of this article is to describe what the law *does*. The argument is that the deterrent effect of doctrines like concerted action, substantial factor and alternative liability has been overly exaggerated; that these doctrines dilute the actors' incentives to take care and encourage them to engage in activities courts denounce as immoral and antisocial; that notwithstanding statements to the contrary, courts respect the pleasure actors get from engaging in condemned activities, and that courts and scholars were too quick to conclude that the but-for test is wholly inapplicable in these cases.

Still the theory pressed here is modest in scope. To begin with, this article does not claim that dilution of liability is always welfare-enhancing[134] or that it always encourages "wrongdoing." As many of the examples discussed in this article demonstrate, there could be many cases where liability will not be diluted enough to encourage actors to act tortiously. Indeed, Example 1—the very example that opened this article—illustrates that, in some cases, group causation liability can deter actors (although as the number of actors increases, the liability imposed on each would lose its deterrent effect).[135] There we saw that a driver who benefits $40 from speeding would find it in her best interest to invest $35 in precaution to avoid an expected harm of $90. Two drivers would also be deterred. By imposing liability on the injuring and non-injuring drivers, concerted action would dilute the expected liability of each to $45 (90/2); but the incentive to take care would remain strong (35<45). However, if concerted action held three actors

[130] Fischer, *supra* note 34, at 289 (suggesting that "because [cases involving insufficient causes] fall outside the core understanding of causation, courts should decide whether to impose liability on parties who make unnecessary and insufficient contributions to injury by making judgments based on either policy or intuition rather than on facts alone").
[131] *See also Warren*, 92 N.Y.S. at 727.
[132] Fischer, *supra* note 34, at 281.
[133] This assumes that the parties believed that liability would be applied to all and thus diluted.
[134] It is not. *See* Dillbary, *supra* note 21, at 995.
[135] *See supra* notes 13-18 and accompanying text.

liable, none would want to take care (35>90/3). Moreover, this article does not argue that every case in which the three paradigmatic cases apply is congruent with the but-for test, or that the model discussed here is always applicable.

A major limitation of the model is its reliance on the parties' ability to engage in an ex-ante cost-benefit calculation. In the drag race hypothetical discussed in Example 1, the participants must be able to estimate their expected liability. Each should be able to assess that if she acts alone she will be subject to an expected liability of $90, with another to $45 (90/2) and as part of a group of three to $30 (90/3). To do this, each party must be able to assess the benefits and costs of the activity, to understand that in case of an injury each of the participants will be held liable, and to be able to assess whether enough participants would engage in the activity so that she can expect a profit.[136]

These assumptions are realistic and likely to be present in many cases. To begin with, each actor should be able to assess how much she is willing to pay or accept to engage in a certain activity—that is, to asses the expected benefits. The determination is not unique to tortfeasors. When one pays for a hunting license, a ticket to participate in a game of paintball or to sit in a front row on a racetrack, she must value the activity (at least ex-ante) more than the amount she paid. So too is the case with the professional driver who is enticed to participate in a race for a certain salary or a promised prize; or the factory that decides to erect a new production facility. Calculating the expected cost requires a determination of the severity and probability of the harm and, for this reason, may seem more complicated. But proxies are available. For example, the actors can simply estimate the *maximum* expected liability and use it as a benchmark.[137]

The second assumption—knowledge that all the participants would be subject to liability—is also not a major obstacle. Actors are likely aware that they could all physically injure the victim and if so that they would all be held liable together (e.g., multiple agents may be aware that their facilities would

[136] *But see* Richard W. Wright, *Actual Causation vs. Probabilistic Linkage: The Bane of Economic Analysis*, 14 J. LEGAL STUD. 435, 437, 439 (1985) (criticizing the economists' ex-ante approach and concluding that the actual causation requirement is "backward-looking" and incompatible with welfare-maximization theory).

[137] For example, the polluters in *Tidal Oil* can easily determine the value of the victim's property simply by visiting websites like Zillow.com. Similarly, the drag race participants can assume that an accident may occur with certainty and they may be able to estimate the damage to neighboring cars and pedestrians based on characteristics of the neighborhood. *See* RICHARD L. REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY 80 (2008) ("it is well established that the willingness to pay to avoid risk is highly correlated with income"); Ariel Porat, *Misalignments in Tort Law*, 121 YALE L.J. 82, 86-7 (2011) (explaining that because "in the rich neighborhood most people have a higher income than the residents of the poor neighborhood" and because tort law awards more damage to high-income victims, a driver will likely take "more care in the rich neighborhood than in the poor one."); W. Kip Viscusi, *The Value of Life in Legal Contexts: Survey and Critique*, 2 AM. L. & ECON. REV. 195, 212-13 (2000) ("based on the usual benefit measures, the value of life for more affluent populations should be greater."). Estimating the expected value of human life is not an exception. *See e.g.,* Frank Cross & Charles Silver, *In Texas, Life Is Cheap*, 59 VAND. L. REV. 1875, 1876 (2006) (examining jury awards and finding that compensation for the value of life ranged between $2-$4 million).

contaminate the same reservoir). Moreover, the fact that almost every court and the majority of scholars have (although mistakenly so) relied on basic concepts of justice, fairness and morality to justify group causation theories also implies that group liability should be expected.

The assumption that each actor can assess that some (minimum) number of participants will engage in the activity is also reasonable in many group causation cases. This is especially the case in concerted action situations. In these cases most courts require an actual agreement between the parties. Each party to the agreement must thus be aware, at the very least, of the number of parties with whom it contracted. In the drag race examples, each participant would know the number of participating drivers. The few courts that did not insist on an actual agreement require that those "acting independently, know, or have reasonable grounds to believe, that their independent acts, combining with the independent acts of others, will…caus[e] damage;" and that "all [participants] have knowledge of the independent acts that create the result and continue the independent acts with knowledge."[138] It is this knowledge, the *Moses* court held, which *"ipso facto creates a concert of action*" that subject them to group liability.[139]

The Substitution Hypothesis implies that the assumption that the parties are able to determine or estimate the number of participants will likely hold in many concurrent and alternative liability situations. In *Tidal Oil*, a concurrent causes case, the court explained that "to make tortfeasors liable jointly there must be some sort of community in the wrongdoing, and the injury must be in some way due to their joint work, but it is not necessary that they be acting together or in concert if their concurring negligence occasions the injury."[140] Thus if D1 and D2 polluted a stream which they, and D3 who built a dam, knew would harm the property of the victim, all are jointly liable under the substantial factor doctrine. Importantly, each of D1-D3 can expect to be liable for only on third of the damage to the victim. The assumption also holds in many alternative liability cases. In both *Summers* and *Oliver* the defendants were parties to a hunting group and were thus aware of the number of participants.

Still, there may be cases in which the parties could *not* engage in ex-ante calculations. A case where fires set by two tortious campers who are not aware of each other is such an example. In such cases, because the existence of another force is unpredictable and improbable, the actor cannot expect that others would shoulder her liability. Still, the model works well even in such cases. It is true that a group causation theory like substantial factor will dilute the parties' liability at the end of the day. If both are held liable and are solvent each will be responsible

[138] *Moses*, 133 S.E. at 423.

[139] *Id.* (emphasis added). *See also Warren*, 92 N.Y.S. at 727 ("[W]hile each defendant acts separately, he is acting at the same time in the same manner as the other defendants, knowing that the contributions by himself and the others acting in the same way will result necessarily in the destruction of the plaintiff's property. If necessary, in order to get at them, a court . . . may infer a unity of action, design, and understanding, and that each defendant is deliberately acting with the others in causing the destruction of the plaintiff's property").

[140] *Tidal Oil Co.*, 5 P.2d at 391. *See also* Northup v. Eakes, 178 P. 266, 268 (Okla., 1919).

for a fraction of the harm. But *when* the parties decide whether to engage in the activity, they cannot count on the happenstance of another force. Even if they are aware of another force, they may not know whether it originated due to tortious conduct of another. As a result, the fact that such actor's liability would be diluted in trial due to a force of which she could not know does not enter her *ex-ante* considerations. In such cases the parties' diluted liability will not erode the deterrent effect—the efficient result.[141]

The model thus does not require that "courts have perfect knowledge about each accident (including the ex-ante expected losses)" and that injurers [or the courts] be "omniscient" or "know[] the magnitude and probability of all losses that may occur."[142] Nor does it assume that "each tortfeasor can…calculate…what conduct is efficient for every other tortfeasor that might contribute to the risk."[143] Rather, the model acknowledges that parties have limited knowledge, that ex-ante calculations are not always feasible, and that courts have limited ability. In fact, it is the recognition of these limitations that explains why the decision whether to act (and bear the possible consequences of such acts) is deferred to market actors.

The model comes with other benefits. In addition to shedding a new light on what the law currently does, the model suggests changes that would facilitate the adjudication process and, unlike current doctrines and proposals, it does not require courts to do the impossible. To illustrate, recall the car hypothetical involving a group of actors leaning on a car (Example 7). Jurisdictions that follow the Restatement (Second) must determine whether the actions of each are sufficient. Only if they are does the substantial factor doctrine apply. Courts must also determine whether the contribution of each actor to the total harm was trivial. An actor whose contribution was trivial will be exempted from liability if the jurisdiction follows the Restatement (Third) and may be exempted if the Restatement (Second) applies. Yet, in many cases the determination of whether a force was sufficient or trivial is simply impossible. Indeed, the car hypothetical provided by the Restatement (Third) and discussed by Robertson illustrates the absurdity of providing the courts which such tasks. Can the non-omniscient court really determine the degree of force exerted by each actor? What if each simply leaned on the car while others also pushed it with their legs? Would the court be able to determine whether each force was sufficient, necessary or trivial? Could the plaintiff (anyone) provide evidence that would shed light on these issues? In the hypothetical world of the Restatements, one can determine whether a force is

[141] For a full analysis of such cases *see* J. Shahar Dillbary, *Con-Torts* (work in progress) (on file with author).

[142] Wright, *supra* note 136, at 445 (criticizing Shavell's model of causation). *See also* Feess & Hege, *supra* note 34, at 423 (explaining that "there is a substantial body of literature showing that multiple causation does not constitute a serious obstacle to efficiency as long as the court is fully informed about the circumstances of an accident" and noting that "by contrast, only very few contributions have examined problems of asymmetric information.").

[143] Glen O. Robinson, *Multiple Causation in Tort Law: Reflections on the DES Cases*, 68 VA. L. REV. 713, 745 (1982) (criticizing Landes and Posner's causation model).

sufficient or trivial. One can also assume that the force exerted by A constituted 99% of the force necessary to roll the car and B only exerted 1%; or that A-D exerted 25% of the force necessary (so they could together propel the car) and E only exerted 5%. In real life such determinations are (very) likely to be impossible. Moreover, even if causation is established, the court will need to apportion liability. The apportionment task—whether based on fault, relative riskiness, or any other factor—seems illusory.[144]

The model makes such illusory determinations unnecessary. By defining the pool of injurers and assuming that each is a but-for cause of the harm, it relays the impossible task to defendants. The costly apportionment regimes are substituted with a cheaply administered pro-ration rule. Finally, the model is not only consistent with traditional doctrine, it should also appeal to the moralist as it requires the injurers to internalize the cost they imposed on third parties-victims in cases where the Restatement should, but fails, to do so.

The examples used in this article may raise another concern. They are stylized, they ignore the possible inter-dependency between the parties' actions and they assume that the expected harm to the victim is constant. This is a strong assumption. After all, even if the severity of the harm, H, is not influenced by the number of tortfeasors, the probability, p, that an accident will occur may increase as more actors join the activity. For example, the expected harm, pH, from a drag race may be $90 in the case of two actors. Yet, as more drivers join the party the probability that a third party will be hurt increases, from p to p_1 ($p<p_1$) and if so, the *expected liability* would increase as well (to $p_1H>90$). A more nuanced analysis is not only invited, but it may also provide additional insights. But the main argument remains. At one point, if liability is diluted enough, the careless (and much condemned) activity will become socially desirable. This is because the *maximum* expected damage is capped and can be estimated.[145] Thus, the parties do not need to know what the probability of an accident is if two actors engage in the activity. Nor do they need to know whether and to what extent it would increase if more actors partake in the activity. Indeed, even if the actors assume that the accident is certain to happen (p=1), they will be able to estimate the maximum expected harm. And, with enough actors, this maximum expected harm will become so diluted as to make the activity worthwhile for each. To borrow by-now familiar language, *dilution of liability* is often what entices the tortious behaviors, each of which is (or should be considered) a Necessary

[144] Rizzo and Arnold, for example, provide a theory of causation that requires knowledge of "relative riskiness of the causal agents." *See* Mario J. Rizzo & Frank S. Arnold, *Causal Apportionment in the Law of Torts: An Economic Theory*, 80 COLUM. L. REV. 1399, 1410 (1980). To illustrate their point the authors discuss a situation in which two tortfeasors simultaneously shoot, hit and kill a victim. Under their proposed theory, where one of the tortfeasors caused an injury that resulted in a 90% probability of the victim's death while the other caused an injury resulting in a 45% probability of death, the former must pay twice as much as the latter. *Id*.

[145] *See supra* notes 137 and accompanying text.

Element in a Set of actual events that caused the harm. An economic "NES" if you will.[146]

Moreover, the article's claim is *not* that in every case each of the injuring and non-injuring actors is a but-for cause of the harm. Rather, it focuses on a narrow set of cases and it concedes, even demonstrates, that in *some* cases the injurer alone is the cause of the harm.[147] Yet, the article shows that in many cases non-injuring actors are also but-for reasons for the harm. And, it argues that in other cases, for policy reasons, each actor should be treated as if he is a but-for reason for the harm.

VI. THE ONE-PARTY-PAYS-ALL RULE

Group causation theories—theories that hold injuring and non-injuring participants liable—may be efficient. But are they necessary? Could the same result be achieved by other means? Thus far, following courts and scholars, this article considered one alternative to group causation theories: no liability. The choice was between two options: (a) holding everyone liable (*all* the drivers to a drag race, *all* the factories whose pollutants combined, and *all* the hunters who shot carelessly); or (b) allowing these actors to escape liability and leaving the victim remediless. One important alternative that has been neglected by the prior literature is a regime under which *one* party is solely liable for the entire harm. In some cases the choice can be easy. In cases like *Bierczynski* the law could hold liable the sole injuring driver—the one who crashed into the victim. In other cases, where multiple actors injured the victim or in cases where it is impossible or too costly to identify the injurer, courts could devise mechanisms to choose the unlucky actor who would alone bear the entire burden. For example, liability could be imposed randomly on *one* of the polluters in *Tidal Oil* or on *one* of the careless hunters in *Summers*.

Is the one-party-pays-all rule as efficient as a group causation theory? One could argue that it is. After all, the expected benefits and costs under group causation theories and the one-party-pays-all rule seem the same. To see this, consider again the drag race in Example 1. There, each of three drivers expects a benefit of $40 and must spend $35 to avoid an expected damage of $90. Under concerted action theory, all drivers—the injuring and non injuring ones—will be held liable. Accordingly, if all act carelessly each will expect to shoulder 1/3 of the $90 damage, or $30, and thus expect a gain of $10 (40-30). Consequently, forgoing care would make all better off (10>40-35). Under the one-party-pays-all regime the parties would face the *same* expected cost and benefits. At the start of the race each driver knows that if she drives carelessly the probability that she

[146] Unlike the NESS doctrine, for the reasons explained above and in Part IV *supra*, neither dilution of liability or the existence of any one actor has to be "sufficient." *See also* notes 112, 123 and J. Shahar Dillbary, *Con-Torts*, *supra* note 141 above.

[147] *See supra* notes 75-76 and accompanying text.

will be the one to hit the victim (and thus be held liable for the entire harm of $90) is 1/3. She can thus expect to pay $30 (1/3x90) and gain $10 (40-30).

In the example above, the application of a group causation theory like concerted action and the one-party-pays-all rule lead to the same results. The reason is that to incentivize each participant to drive carelessly it is not necessary to hold all drivers liable for the entire harm. Rather, it is enough that every driver is at risk of being liable. Still, there are good reasons to prefer a group causation theory over the one-party-pays-all rule (beyond the public upheaval that such the latter rule may generate):

1. *Holding Constant Ex-Ante Expectations*. Group causation theories enjoy an important advantage over the one-party-pays-all regime: they ensure that the expected cost of the accident remains diluted throughout the activity. Consider again the drag race example with three drivers. At every point of the race, each driver should expect to pay one third of the damage or she will withdraw. Concerted action theory ensures the drivers that the expected liability will indeed remain diluted. A driver who wishes to quit the race will remain liable unless she communicates her decision in a way that leaves the other participants enough time to reconsider their actions. This is the teaching of cases like *Lemons*.[148] In that case the victim was a passenger in a car driven by Kelly. Kelly and King, the driver of another vehicle, admitted that they drag-raced, but argued that the race had ended about a mile before the point of collision. The injury, they claimed, occurred when the Kelly car passed the King car—an argument the victim seems to have admitted. Despite the victim's admission, the court accepted the jury's determination. "[O]ne who participates in setting [a] hazardous conduct [like a drag race] in motion cannot later be heard to say: 'Oh! I withdrew before harm resulted even though no one else was aware of my withdrawal.'"[149]

In contrast, under the one-party-pays-all regime the drivers cannot be confident that their liability will remain diluted. At the beginning of the race each may believe that she has 1/3 chance at bringing about the $90 harm, but the assessment may quickly change. For example, if one driver loses sight of the others, that driver may not be able to tell whether the other drivers remained in the race. The other drivers may have similar concerns regarding the missing driver. As a result all drivers may adjust their expectations and alter their behavior accordingly.

2. *Equal Probability to Harm*. The one-party-pays-all regime could also lead to inefficient results in cases when some of the actors cannot (not even potentially) injure the victim. To illustrate, assume that instead of three drivers, the drag race participants are comprised of two drivers and one spectator. For simplicity, assume that, like the drivers, the spectator benefits $40 from (watching or betting on) the race, and will incur a cost of $35 if she takes care (e.g., the cost of restraining herself from encouraging the parties). Consider a jurisdiction that would hold liable only the driver who physically injured the victim in cases where

[148] Lemons v. Kelly, 397 P.2d 784 (Or. 1964).
[149] *Id.* at 787.

there is only one injurer whose identity is known. Under this version of the one-party-pays-all regime, both drivers will take care. With only two drivers, the chance that any one of them will hit the victim is 50% (1/2). Each driver thus faces a liability of $45 (90/2) if she does not take care compared to only $35 if she does. In contrast, if the parties are subject to a group causation theory like concerted action, neither driver will take care. The probability of each driver to be the one who hits the victim is still 50%, but her expected liability is diluted $30 (90/3). The reason is that concerted action theory also imposes liability on parties who, like the spectator, are not in a position to hit the victim, but who have agreed to shoulder liability.

One possible reply is that if that the parties can strike an agreement, as concerted action theory (usually) requires, they would contract around the one-party-pays rule. In the above example, the two drivers and the spectator will enter a cost-sharing agreement. The reply is unconvincing for at least two reasons. First, courts are unlikely to enforce agreements to engage in activity they declare, at least outwardly, as immoral and antisocial. Second, even if such agreements are upheld, if transaction costs are prohibitive, the parties will not be able to enter into such an agreement. As *Bierczynski* and *Lemons* demonstrate, a group causation theory like concerted action allows the parties to reduce the cost of transacting. A wink of an eye, or a look or a gesture is all that is required to enter an agreement.

3. *Eliminating the Bad Driver*: The one-party-pays-all rule may be less effective when actors are not identical. Consider the three drivers who would like to race, but assume now that one of them is worse than the others in the sense that she is more likely to injure the victim. A version of the one-party-pays-all rule that holds liable only the driver who physically injured the victim may look attractive. This version of the rule could cause the bad driver, who on average can expect to pay more compared to her fellow drivers, to either forgo the activity or take more care. The result may seem fair but it would be inefficient because but-for the careless behavior of the bad driver, the socially beneficial race will not take place. Under a group causation regime the better drivers subsidize the bad driver, but they would do so gladly since but-for the careless participation of the bad driver they would not enter the race they (and society) value.

4. *Deviation from Traditional Tort Law*. One can adopt a version of the one-party-pays-all rule under which the court must randomly impose liability on one actor. Under this rule, the pool of defendants can be defined broadly to include encouraging spectators and those who did not properly communicate their willingness to abandon the activity. Such a rule, however, would constitute a deviation from traditional tort law principles without countervailing benefits. The reason is that each actor—those who injured the victim and those who did not—is (or should be deemed) a but-for reason for the victim's harm. And once this becomes clear, there is simply no reason to exculpate the non-injuring actors or choose randomly one actor to bear the entire cost for which others are equally responsible. If each had a duty that she breached, and each was a cause (actual and proximate) of the harm, each actor should be held liable. Viewed this way,

the one-party-pays-all regime exempts from liability actors who committed a tort, and for this reason, represents an undue deviation from traditional tort law.

5. *Strategic Behavior*. A deviation from the actual causation requirement invites the very strategic behavior that plagued our tort system and is still eminent in the three paradigmatic cases. Indeed, in cases where no-liability is considered a viable option, each actor's incentive to collect post-accident evidence in order to exculpate herself during trial is immense. The same (socially) wasteful dynamic may occur under the one party-pays-all regime. For example, if the law imposes liability only on the actor who physically harmed the victim, each party will find it beneficial to invest in exculpatory evidence up to the full amount of the victim's damage.

6. *Risk Preferences*. An important assumption that underlies the application of the one-party-pays-all rule is that all parties are risk-neutral. The assumption is valid if a functioning market for insurance exists. But in the three paradigmatic cases discussed, the actors may not be able to purchase third party liability insurance. The reason is that their activities require intentional (or at least conscious) ex-ante cost-benefit calculations. As such, they may be considered parties to intentional torts and may even be subject to punitive damages. Certain jurisdictions do not allow such actors to insure themselves and many jurisdictions may find invalid a policy to insure what they believe to be an immoral activity. Absent access to insurance markets, actors may behave as risk-averse and as a result, decline to engage in harmful yet socially beneficial activities.

To illustrate this point, suppose that each potential driver in a drag race values the activity at $40 and that she must invest $30 (e.g., the cost of conducting the race in an isolated area) to avoid a $90 damage. Under the one-party-pays-all-rule, a risk neutral driver would be indifferent between (a) taking care and (b) participating carelessly in a race with two other careless drivers. If she takes care she can expect a $10 benefit (40-30). If she does not, she has a 33.33% (1/3) chance to be liable for the entire $90 harm and therefore her expected gain will be the same (40-90/3=10). Now suppose that the driver cannot insure herself against paying damages for injuries related to speeding in a densely populated area. Concerned that she alone would bear the cost of the victim's $90 damages, depending on her level of aversion, she may forgo an activity that comes with an expected value of $10 (40-90/3). In contrast, a group causation theory provides the injurers with a social insurance. In all but one jurisdiction,[150] the tortfeasors are either subject to several liability or joint and several liability with a right of contribution. Each actor thus knows that even if she physically injures the victim, she can expect to pay only 1/3 of the harm (assuming solvency).

Ironically, group causation theories not only give priority to the interests of the tortious actors over the victim's interest in her body and property, they also provide social insurance to the very risky activities they purport to condemn.

[150] Alabama is the only jurisdiction that has retained the common law's no contribution rule. *See generally* Susan Randall, *Only in Alabama: A Modest Tort Agenda*, 60 ALA. L. REV. 977, 980 (2009); Dillbary, *supra* note 15.

Worse, the victim, being a member of that society, subsidizes the tortfeasors' actions. The conclusion is that the moralist who prefers to reduce the number of accidents, should prefer the one-party-pays all rule (e.g., the injurer-pays-all version). In contrast, group causation theories provide injurers with a stronger dilution mechanism and an insurance feature, and accordingly lead to more accidents.

VII. CONCLUSION

Courts have developed different theories to hold defendants liable even when the injury was clearly inflicted or could have been inflicted by others. They easily—too easily—admit that they relax or abandon the actual causation requirement, but they explain that they do so on two major policy grounds. The first is fairness to the victim, who was injured by a group of tortious actors and would remain remediless if the courts applied the traditional but-for test. The second is deterring actors from engaging in activities the law deems antisocial and often declares illegal and even subject to criminal liability.

The article dismisses these arguments. It is the first to offer a unified and consistent theory to all three major group causation paradigms: concerted action, concurrent causes and alternative liability. The theory reveals that group causation theories are not designed to deter. Rather, imposing liability en masse decreases the parties' incentives to take care and encourages them to engage in harmful activities—a result that many would view as unjust. Moreover, this article uncovers that, despite the courts' rhetoric, group causation theories do so by giving weight to the subjective values that tortious actors (but not "society" or the victim) place on harmful and dangerous activities. The theory pressed here, however, argues that the result can often be justified on efficiency grounds and it explains why, and under what conditions, these lamented activities are in fact socially desirable and encouraged.

Another important insight is that imposing (too much) liability on actors who did not physically injure the victim and imposing (too little) liability on the injurer, can increase total welfare. What courts and scholars missed is that a non-injuring tortious party (or each of the injurers in an overdetermined case) can be an actual cause of the victim's injury and should thus be equally responsible with the injuring parties for the entire harm. This article is thus the first to reveal that courts, scholars and the Restators have all been too quick to concede that the but-for test is inapplicable in the three paradigmatic cases. Accordingly, this article suggests a more prominent role for the but-for test in causation analysis.