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Authors

Gilboa, Maytal
Kaplan, Yotam

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Loser Takes All: Multiple Claimants & Probabilistic Restitution

Maytal Gilboa* & Yotam Kaplan**

Consider these two seemingly unrelated recent scandals: The publicized fall from grace of cyclist Lance Armstrong, and the truly ruinous Madoff pyramid scheme. These cases (as well as a plethora of more mundane scenarios discussed throughout this Article) share a common feature, hitherto scantily discussed by courts and legal scholars: causal ambiguity in restitution claims involving multiple claimants. In such cases, a wrongdoer was enriched at the expense of others—sometimes a great many others—and it is therefore difficult to determine exactly which possible victim is indeed the source of the wrongdoer’s enrichment. In such cases, it can be near impossible to preponderantly prove the identity of the claimant at whose expense the wrongdoer was enriched. This Article is the first to identify this problem as a reoccurring pattern in restitutionary claims.

By making this novel contribution, the Article fills an important gap in the literature and identifies a new paradigm within the law of restitution, that of causal ambiguity in multiple-claimant cases. This vacuum in the literature on restitutionary claims is especially striking, considering the vast scholarship on a closely related topic, namely causal ambiguity in multiple-defendant tort cases.

The Article argues and demonstrates that the existing rules of the law of restitution do not provide appropriate solutions in multiple-claimant cases. Under existing law, many deserving claimants—sometimes all of them—can be left with no remedy, thereby denied of their rights and not compensated for harms they suffered at the hands of a wrongdoer. Drawing on the more developed literature on causal ambiguity in tort law, we propose a solution for this injustice by presenting, for the first time, a new concept of probabilistic restitution. The

* Postdoctoral fellow, University of Toronto Faculty of Law; PhD, Tel Aviv University Faculty of Law.

** Assistant Professor, Bar-Ilan University Law School; SJD, Harvard Law School. Drafts of this paper were selected for presentation at the Private Law Theory Workshop at Tel Aviv University Law Faculty and at the 36th Annual Meeting of the European Law and Economics Association, and the 2019 Meeting of the Canadian Law and Economic Association. We wish to thank participants in these meetings, as well as Hanoah Dagan, Avihay Dorfman, Christopher Essert, Ehud Guttel, Ariel Porat, Yuval Procaccia, Sarah Racicot, Arthur Ripstein, Henry Smith, and Ernest Weinrib for helpful comments and discussions, and Shani Wiersch for excellent research assistance.

Article shows that the proposed regime can lead to just and efficient outcomes, serving the goals of both interpersonal justice and deterrence.

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INTRODUCTION

As background for our analysis, consider the facts of the case in *Sindell v. Abbott Laboratories*,¹ a landmark California Supreme Court decision and an all-time tort law classic. The suit in *Sindell* was based on events that occurred many years before it was filed, when a number of pharmaceutical companies produced and marketed a drug named diethylstilbestrol (DES).² DES was used as an experimental treatment and given to pregnant woman in order to reduce the risk of miscarriage. Only years later, it was revealed that DES caused adenocarcinoma—a fast-spreading and violent form of cancer—in the daughters of those who used it. One of these daughters was the plaintiff in *Sindell*. Now a young woman herself, she sought compensation for her harms and sued DES manufacturers. The plaintiff in *Sindell* was able to prove she was harmed; she was also able to prove wrongdoing by multiple DES manufacturers.³ However, she was unable to prove a causal link between her injury and any specific wrongdoer. Since so many years had passed and since the drug was marketed generically, the plaintiff in *Sindell* was unable to prove which specific manufacturer was the one that sold DES to her mother.⁴ She therefore could not show which manufacturer was responsible for her injury and could not prove her claim beyond the required standard of the preponderance of the evidence. Under traditional tort law doctrine, this would mean an inevitable rejection of her claim.⁵

1. 607 P.2d 924 (Cal. 1980).

2. *Id.* at 925.

3. *Id.* at 926.

4. *Id.* at 925.

5. Merrell Dow Pharm., Inc. v. Havner, 953 S.W.2d 706 (Tex. 1997) (denying compensation to plaintiffs in mass tort case in which multiple children suffered limb deformities since the plaintiffs failed

In response to this injustice, the court in *Sindell* introduced the doctrine of *market share liability*. Under this doctrine, each defendant is made liable for a part of the harm, according to that manufacturer's share in the market for the sale of the product that caused the harm.⁶ Thus, in *Sindell*, each manufacturer was made to pay some portion of the plaintiff's damages in accordance with its share in the DES market.

The market share liability doctrine also presents a more general concept, that of *probabilistic tort liability*.⁷ Thus, in *Sindell*, each manufacturer was made liable for the plaintiff's harm according to the *probability* that it was in fact responsible for that harm. Following *Sindell*, probabilistic tort liability has become a familiar tort doctrine, also beyond the category of market share liability,⁸ and a focus of a rich and developed scholarship.⁹

to prove that the defendants increased the risk of such deformities by more than fifty percent).

6. Robert A. Kors, *Refining Market Share Liability: Sindell v. Abbott Laboratories*, 33 STAN. L. REV. 937, 938–39 (1981) (discussing the *Sindell* case and the fundamental principles of the market share liability doctrine).

7. See, e.g., ARIEL PORAT & ALEX STEIN, *TORT LIABILITY UNDER UNCERTAINTY* 194–95 (2001) (claiming this is a second-best solution since it overcompensates plaintiffs whose illness was not inflicted by the defendant's wrong and undercompensates plaintiffs whose illness resulted from this wrong; the authors therefore suggest applying instead what they term the "evidential damage doctrine," which enables each plaintiff to sue for the damage inflicted to her autonomy as a result of being deprived of the information required to prove her suit or make an informed choice regarding her legal rights); David Rosenberg, *The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System*, 97 HARV. L. REV. 849 (1984) (arguing that in mass exposure cases, courts should award each victim compensation in proportion to the likelihood that her injury was caused by the defendant's wrongful exposure).

8. PORAT & STEIN, *supra* note 7, at 70–73, 181–82, 193–95 (studying the possibility of compensating tort victims who are unable to prove a causal link between their injury and a single injurer); Richard Delgado, *Beyond Sindell: Relaxation of Cause-In-Fact Rules for Indeterminate Plaintiffs*, 70 CALIF. L. REV. 881 (1982) (suggesting relaxation of the requirement of causation in cases of indeterminate tort victims to permit recovery); Mario J. Rizzo & Frank S. Arnold, *Causal Apportionment in the Law of Torts: An Economic Theory*, 80 COLUM. L. REV. 1399 (1980) (developing the concept of relative causation based on probabilistic tools to discuss issues of liability apportionment in cases of joint tortfeasors). It should be noted that the probabilistic nature of this doctrine was implemented by some courts in ways that have nothing to do with ambiguity in causation. For example, in *Hymowitz v. Eli Lilly & Co.*, 539 N.E.2d 1069 (N.Y. 1989), one of *Sindell's* subsequent applications, it was decided that liability will be apportioned according to the amount of risk of injury, and thus a defendant should not be absolved of liability even if they can prove not to have caused a particular plaintiff's injury.

9. E.g., Kors, *supra* note 6 (discussing the possibility of allowing plaintiffs who seek full recovery to have their cases heard in court in parallel to the market share liability route); Richard P. Murray, *Sindell v. Abbott Laboratories: A Market Share Approach to DES Causation*, 69 CALIF. L. REV. 1179 (1981) (asserting that the doctrine of market share liability might create undesirable results, such as difficulties with damage calculation and market definition, and ambiguity regarding the level of proof required from plaintiffs in situations of market share liability); Glen O. Robinson, *Multiple Causation in Tort Law: Reflections on the DES Cases*, 68 VA. L. REV. 713 (1982) (observing the problems that result from a concept of market share liability that does not distinguish between innocent and unknown causes, and instead suggesting adoption of a probabilistic approach for purposes of causal apportionment in such cases).

In this Article, we investigate for the first time the possibility of carrying over the concept of probabilistic recovery from the law of tort to the law of restitution.¹⁰ The classic paradigm of causal ambiguity in tort law, represented by the *Sindell* case, focuses on the multiple-*defendant* scenario. The reason for this focus is simple. Tort law is the law of harms; accordingly, the core element of any tort claim is the harm suffered by the victim-plaintiff. The tort plaintiff is therefore easy enough to recognize, as she is the party suffering a harm or a loss. However, once the harm and the victim have been identified, the identity of the injurer may still be unclear. In some cases, it can be difficult to prove the identity of the party causing the harm out of several possible defendant-injurers. This explains why, within the domain of tort law, the classic case of causal ambiguity is a multiple-*defendant* case, like *Sindell*.

Restitution, on the other hand, is the law of *gains-based* recovery;¹¹ as such, restitution doctrines are often structured as a mirror image of their tort law, harm-based counterparts.¹² In restitution cases, the core element is not the victim's harm but the wrongdoer's gain.¹³ The restitution defendant is therefore readily identifiable as the party now holding some ill-gotten gains. However, once such enriched wrongdoer is recognized, in some situations the identity of the victim, at whose expense the wrongdoer was enriched, may remain unclear. In such cases, different possible claimants can each argue that they were the source of the defendant's enrichment. Therefore, in restitution cases, the core case of causal ambiguity is a multiple-*claimant* case rather than a multiple-*defendant* one.

Based on this insight, this Article is the first to identify multiple-claimant cases as the core example of causal ambiguity in restitution law. We juxtapose these cases against multiple-*defendant* tort cases, like *Sindell*, which are the core example of causal ambiguity in tort law. Following this juxtaposition, we propose the novel concept of *probabilistic restitution*, as a parallel to the familiar concept of probabilistic tort liability. We argue that probabilistic restitution produces just results in multiple-*claimant* restitution cases in the same way that probabilistic tort liability produces just results in multiple-*defendant* tort cases.

10. We also discuss parallel doctrinal solutions to the problem of causal ambiguity in tort law, such as the doctrine of evidential damage suggested by Porat & Stein. See *infra* note 54 and accompanying text.

11. Douglas Laycock, *The Scope and Significance of Restitution*, 67 TEX. L. REV. 1277, 1283 (1989) (observing the essential differences that distinguish restitution from compensation).

12. Maytal Gilboa & Yotam Kaplan, *The Mistake About Mistakes: Rethinking Partial and Full Restitution*, 26 GEO. MASON L. REV. 427 (2018) (highlighting the structural differences between the law of restitution and the law of torts).

13. *E.g.*, RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 1 cmt. a (AM. LAW INST. 2011) (indicating that the formula “at the expense of another” does not require plaintiffs to show that they have suffered loss, but rather to focus on the defendants’ benefit instead); *id.* § 3 cmt. a, b, c (observing the difference between restitution and damages in disgorgement cases and stating that disgorgement is allowed even when the defendant’s gain exceeds the plaintiff’s loss and even when the plaintiff did not suffer any loss).

To gain a quick insight into our argument, consider the following stylized example, which draws inspiration from the recent Lance Armstrong scandal.¹⁴ Lance Armstrong, once an idolized icon for millions and the world's leading cyclist, was accused by the United States Anti-Doping Agency (USADA) of systematic abuse of performance-enhancing drugs. Subsequently, he was banned from competitive cycling for life, faced civil lawsuits from former sponsors and the federal government,¹⁵ and was stripped of his titles. Our hypothetical scenario focuses on just one aspect of the Armstrong case and explores the possibility of a civil suit against Armstrong by his past competitors. In particular, assume that three of Armstrong's long-time rivals sue him in relation to a monetary prize in the sum of \$1M that he won at his 2004 Tour de France.¹⁶ Armstrong's rivals argue that since he cheated during the Tour, he in fact stole the prize from them and should therefore surrender it to them. More precisely, each of these competitors argues that but for Armstrong's participation in the Tour, he would have won the \$1M prize;¹⁷ each competitor therefore files a claim against Armstrong for restitution of his ill-gotten gains.¹⁸ This scenario highlights a fundamental question. Namely, even if it is proven to the hilt that Armstrong was enriched through his wrong at the sum of \$1M—at whose expense was he enriched—and therefore, which plaintiff is entitled in restitution to the prize sum of \$1M?

Considering the fact that the Tour organizers would not have kept the prize money had Armstrong not cheated, it seems that Armstrong was not enriched at the organizers' expense. Instead, he was enriched at the expense of one of his rivals, that is, the rival that would have won but for Armstrong's participation. But who is this rival? Intuitively, it might seem that Armstrong was enriched at the expense of whichever rider placed second in the Tour general classification (for convenience, let us refer to this rider as the "silver medallist").¹⁹ Supposedly, if it were not for

14. See Statement from USADA CEO Travis T. Tygart Regarding the U.S. Postal Service Pro Cycling Team Doping Conspiracy (Oct. 10, 2012) (<http://cyclinginvestigation.usada.org> [<https://perma.cc/LE65-9ABY>]).

15. The U.S. government accused Armstrong and his team of defrauding the government by riding under the banner of the United States Postal Service, which sponsored the cycling team for years, while using performance-enhancing drugs. *Id.*

16. To keep the hypothetical as simple as possible, we focus here only on the monetary award in the sum of \$1M. In reality, Armstrong's past rivals might not only sue him for his prize money, but also for other financial goods deriving from his victory, such as advertising jobs, sponsorships, and reputation. See also *infra* note 35.

17. For simplicity, we focus here only on the monetary prize awarded to the Tour winner. A similar analysis can pertain to other ill-gotten benefits Armstrong obtained through winning the Tour, such as sponsorships.

18. Such a remedy is often termed "disgorgement of profits." See RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 51(4) (defining disgorgement as a restitutionary remedy designed to strip a wrongdoer of all ill-gotten gains and characterizing it as typically available in cases where the defendant's intentional wrong enriched her at the expense of another).

19. The example in the text is a simplified version of the actual Tour de France awarding system. In addition to the main Yellow Jersey for the general classification, there are also the Green Jersey for the points classification, the Polka Dot Jersey for the mountains classification, the White Jersey for the

Armstrong, the silver medallist would have won, and since the prize was stolen from him, it is the silver medallist who should now be entitled to restitution of the full \$1M prize.²⁰ We term this type of outcome a “loser takes all” rule, as it transfers the full restitutionary award to the second-in-place or the next-in-line contestant, leaving the other claimants empty-handed. We argue that in the Armstrong hypothetical, as well as in other restitution cases discussed in this Article, the “loser takes all” solution is inadequate, since it ignores the subtleties of causal uncertainty. In fact, our hypothetical suggests that had Armstrong not participated, the entire Tour would have been different, and there is no way of knowing that the silver medallist would have indeed won. Racing involves a complex interaction between different competitors, in different cycling time trials, and it is very difficult, if at all possible, to predict who would have won had it not been for the cheating winner.

A second possible solution is therefore to deny restitution outright. This supposedly makes sense since no single competitor can preponderantly prove (with a probability exceeding fifty percent) that he would have won if it were not for Armstrong’s participation.²¹ Since none of Armstrong’s rivals can prove that Armstrong were indeed enriched at his expense, none of them deserves restitution.²² We argue that this solution is also inappropriate. Armstrong acted wrongfully. It would be gravely unjust to deny a remedy from all of his rivals just because the identity of the particular rival who would have won but for Armstrong’s dishonestly is uncertain. Even if we cannot tell for sure which competitor is the deserving claimant, we do know for certain that one of Armstrong’s rivals would have won if it were not for the winning cheater. Furthermore, allowing Armstrong to keep the prize money notwithstanding his fraudulent behaviour makes crime pay.

We propose a probabilistic restitution regime as a middle-ground solution, allowing appropriate resolution of restitution cases involving more than a single claimant. Under such a probabilistic regime, each of Armstrong’s Tour rivals would be entitled to a part of the monetary prize, according to his chance of winning the race, as estimated by professionals ex-ante before the Tour started. This outcome is

young rider classification, and a prize for the most aggressive rider throughout the whole Tour. There are also daily awards for stage victories and the most combative rider who most animated each stage.

20. The solution of preferring silver medalist is consistent with the result of the doping scandal involving cyclist Alberto Contador. Contador won the 2010 Tour de France, but the Court of Arbitration for Sport found him guilty of doping and stripped him of his title. The second place finisher, Andy Schleck, was then named as the winner. See William Fotheringham, *Alberto Contador Gets Two-Year Ban and Stripped of 2010 Tour de France*, THE GUARDIAN (Feb. 6, 2012), <https://www.theguardian.com/sport/2012/feb/06/alberto-contador-ban-tour-cycling> [https://perma.cc/NY97-RF7Z].

21. The preponderance of the evidence rule applies also to the requirement to prove the causal link between the defendant’s wrong and its alleged outcome. See, e.g., *Dykes v. William Beaumont Hosp.*, 633 N.W.2d 440, 443–44 (Mich. Ct. App. 2001) (stating that the preponderance-of-the-evidence rule is the required standard for proving causation).

22. The solution of denying a remedy from all competitors is consistent with the actual result in the Armstrong case. Armstrong was stripped of his seven general classification victory titles, but no replacement winner was named.

appropriate for two reasons. *First*, it strips Armstrong of all ill-gotten gains, thus satisfying the requirements of deterrence.²³ *Second*, it provides each competitor full compensation for what was truly taken from him—a fair chance at winning the Tour according to his own skill and ability.²⁴

Extrapolating this example into a generality, our argument is twofold. *First*, we provide a critique of the existing restitutionary regime. Currently, two dominant solutions emerge in restitution cases involving multiple claimants. The first, a “loser takes all” rule, provides full restitution to one claimant at the expense of all others. We show that this rule is unjust, as it prefers one plaintiff over all others with insufficient justification and ignores the subtleties of the causality requirement.²⁵ This rule denies a remedy from some claimants without fully accounting for the merits of their case. The second regime, denying restitution to all plaintiffs, is doubly unjust, leaving all claimants with no protection for their rights. Such a rule also hinders deterrence, allowing the wrongdoer to gain from her wrong. *Second*, we show that probabilistic restitution is a preferable regime in restitution cases involving multiple claimants and is necessary to achieve both appropriate deterrence and interpersonal justice.²⁶ Probabilistic restitution allows compensation for all deserving victims, in proportion to the true value of the chances and opportunities stolen from them by the defendant who was enriched at their expense.

By making this move, the Article defines a new paradigm in the law of restitution, that of multiple-claimant restitution cases. Cases that belong under this new conceptual framework can be found throughout different sub-categories of the law of restitution and in a wide variety of legal fact-patterns. And yet, these cases were hitherto never previously identified as a distinguishable legal category, necessitating special legal solutions according to its unique characteristics. In fact, with the exception of one type of case, that of commingled funds of different fraud victims,²⁷ the issue of multiple restitution claimants was utterly neglected by both courts and legal academics, and therefore never received appropriate treatment. This is a glaring gap in the literature, especially considering the voluminous treatment of the parallel problem of causal ambiguity in tort cases involving multiple

23. Deterrence has been recognized as one of the central goals of restitutionary remedies. *See, e.g.*, RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 3 cmt. c (stating that “[r]estitution requires full disgorgement of profit by a conscious wrongdoer, not just because of the moral judgment implicit in the rule of this section, but because any lesser liability would provide an inadequate incentive to lawful behavior”); Ofer Grosskopf, *Protection of Competition Rules via the Law of Restitution*, 79 TEX. L. REV. 1981, 1997–98 (2001) (highlighting the role of restitutionary regimes in deterring wrongful behavior).

24. We discuss this assertion at length in Parts I and II. *See infra* notes 47–50 and accompanying text.

25. *Infra* notes 39–42 and accompanying text.

26. *Infra* notes 43–44 and accompanying text.

27. As we show below, although this issue was discussed by both courts and scholars, an appropriate legal solution was hitherto not implemented. *See infra* Part III.A.

injurers.²⁸ Courts and scholars alike identified this tort law paradigm as early as the 1940s²⁹ and followed with several reform proposals.³⁰

Our Article is the first to call attention to the common theme of multiple claimants in *restitution* cases, as a mirror image of the more familiar problem of multiple *defendants* in *tort* cases. The Article then moves on to introduce the novel concept of probabilistic restitution as the appropriate remedy in such cases. Throughout the Article, we demonstrate the relevance of the multiple-claimant paradigm to a wide array of restitution cases. These include competitive sports scandals, flawed tenders, violations of IP and antitrust law, money frauds, and pyramid schemes. Each part of the Article describes a different legal setting in which the paradigm of multiple restitution claimants must be addressed to realize just and efficient legal norms: Part I studies the case of multiple restitution claimants in competitive sports litigation and the evidentiary challenges that potential claimants must overcome in order to successfully sue in these cases. It then shows that probabilistic restitution can both satisfy the requirements of justice and offer efficient levels of deterrence against wrongdoing. These normative conclusions are then examined in another legal arena, that of flawed tender processes, which represent a parallel to the competitive sports setting. Part II studies the paradigm of multiple restitution claimants through the lens of antitrust cases resulting from

28. Tort scholarship has also considered the possibility of probabilistic liability in multiple-*victims* tort cases, although this solution was hitherto never implemented or adopted. *See* PORAT & STEIN, *supra* note 7, at 175–76, 193–95 (illustrating the difficulty of factual ambiguity in tort claims where the injured party is unidentifiable through analyzing a radiation case hypothetical); Delgado, *supra* note 8 (suggesting relaxation of the requirement of causation in cases of indeterminate tort victims to permit recovery). These discussions are based on *In re “Agent Orange” Prod. Liab. Litig.*, 818 F.2d 145 (2d Cir. 1987) (regarding Vietnam veterans and their families filed a class action lawsuit against multiple chemical companies for injuries allegedly suffered as a result of the veterans’ exposure to the dangerous chemical “Agent Orange” while spending time fighting in Vietnam; the parties reached a settlement prior to trial).

29. *See, e.g.*, *Summers v. Tice*, 199 P.2d 1 (Cal. 1948) (where two negligent shooters inflicted two different injuries: one hit the plaintiff’s right eye, and the other hit the plaintiff’s upper lip, and it was impossible to determine which harm resulted from whose shot); *Cook v. Lewis*, [1951] S.C.R. 830 (Can.) (in this Canadian hunting case, two defendants shot in the plaintiff’s direction, but only one of them hit the plaintiff, and it was impossible to determine whose shot actually harmed the plaintiff). *Sindell v. Abbott Labs.*, 607 P.2d 924 (Cal. 1980), mentioned above, is responsible for another wave of scholarship on factual uncertainty resulting from multiple potential causes and for the idea of market share liability. *See also, e.g.*, Ariel Porat & Alex Stein, *Liability for Uncertainty: Making Evidential Damage Actionable*, 18 CARDOZO L. REV. 1891, 1900–08 (1997) (explaining the underlying rationale of the evidential damage doctrine by discussing *Summers v. Tice* as well as other cases of factual uncertainty resulting from multiple potential causes); Ernest J. Weinrib, *A Step Forward in Factual Causation*, 38 MOD. L. REV. 518, 523–27 (1975) (arguing that in cases of factual uncertainty resulting, inter alia, from cases of multiple wrongdoers, such as *Cook v. Lewis*, the burden of proof should be shifted to the defendants); *supra* notes 8–9.

30. *See* PORAT & STEIN, *supra* note 7, at 175–77, 193–95 (discussing probabilistic tort liability and the evidential damage rule); Delgado, *supra* note 8 (suggesting relaxation of the requirement of causation in cases of indeterminate tort victims to permit recovery); Howard M. Erichson, *Uncertainty and the Advantage of Collective Settlement*, 60 DEPAUL L. REV. 627 (2011) (exploring the advantages of collective settlement when numerous victims assert similar claims against one defendant).

patent fraud. In such cases, a monopolist secures market power through defrauding the Patent Trademark Office into granting an undeserved patent. When several competitors each claim they could have been the first-to-file for patent protection if it were not for the monopolist's fraud, the question arises as to the identity of the competitor at whose expense the monopolist was enriched. We first demonstrate that the solutions available under prevailing law cannot contend with this difficulty and then show the advantages of probabilistic restitution in these cases. Part III demonstrates that probabilistic restitution also offers attractive outcomes in cases of money frauds, in which the claimants are trying to recover their own money from one common pool fund. A brief conclusion follows.

I. COMPETITIVE SPORTS

Scholars have previously recognized the crucial role of restitution claims in competition settings.³¹ One reason that restitution plays a central role in these contexts is that it can offer better remedial tools to achieve the goals of deterrence compared to harm-based recovery. Since plaintiffs' losses can be lower than defendants' gains, harm-based recovery will too often provide insufficient deterrence against wrongdoing.³² Restitutionary remedies are also attractive because they save plaintiffs the need to prove actual harms; they can base their claims on the defendant's profit instead.³³

This Part discusses competitive sports settings in which wrongdoers can be enriched at the expense of multiple other parties. As illustrated by the Armstrong hypothetical mentioned above,³⁴ a winning competitor caught cheating might have been enriched at the expense of any other competitor, though it is difficult to say which specific other competitor was the source of the cheater's ill-gotten gains. In other words, such cases give rise to the problem—hitherto ignored by courts and scholars alike—of causal ambiguity under the paradigm of multiple restitution claimants. This Part presents a more detailed illustration of restitution claims in sports litigation and explores further the legal fact-patterns that characterize these cases. It explains why current doctrinal arrangements fall short of providing appropriate solutions and then proceeds to propose that probabilistic restitution is the preferable regime. To illustrate our argument, consider the following stylized example, which features a hypothetical tennis tournament:

Example 1: Assume Player *A* won the final of a tennis tournament against Player *B* for a \$1M prize. Player *A* also won the semi-final against Player

31. See, e.g., Grosskopf, *supra* note 23 (arguing that restitution, as compared with harm-based-liability, can provide better solutions in protecting fair competition).

32. *Id.* at 2002–03.

33. Laycock, *supra* note 11, at 1287–88 (observing the importance of restitutionary causes of action in three categories of cases: when a wrong does not result in any loss to the plaintiff but does produce gains to the defendant, when the defendant's gain exceeds the plaintiff's loss, and when the plaintiff's loss is harder to prove than the defendant's gain).

34. *Supra* notes 14–24 and accompanying text.

C and the quarter-final against Player D. However, as it turns out, Player A cheated and was using illegal performance-enhancing drugs throughout the tournament. Subsequently, the other players sue Player A for the illegally obtained monetary award of \$1M.

Assume that the evidence overwhelmingly supports the claim that Player A indeed cheated, and thus, it is indisputable that the monetary prize was unjustly obtained.³⁵ As the tournament committee would have ultimately given the prize to whomever of the players eventually won the tournament, there can be no doubt that Player A's prize money came at the expense of another player. Still, establishing that Player A was unjustly enriched is not enough to hold her liable in restitution. Under current law, for that purpose, a *specific* competitor-claimant must preponderantly establish that Player's A enrichment was *at her expense*.³⁶ That is, either Player B, C, or D must prove, by a probability exceeding fifty percent, that had Player A not received the prize, it is she who would have. Under these circumstances, a difficulty arises: there is no doubt that Player A was enriched as a result of her wrong; yet, the identity of the specific player who was the source of the cheater's enrichment remains unclear. What should a court decide in such a case?

A. Loser Takes All

Example 1 raises a problem of causal ambiguity. Current restitution doctrine contends with this issue based on the preponderance of the evidence rule.³⁷ Accordingly, the first solution under current law is to say that Player B, the runner-up who lost in the final, is entitled to disgorgement of the full prize of \$1M. This solution seems intuitively justified: Player A cheated and is thus barred from the monetary award, which should therefore be given to the next in line for the victory—the finalist Player B. Supposedly, had it not been for Player A's undeserved victory in the final, Player B would have won. The \$1M award was in this sense stolen from her and should therefore be returned to her. However, this “loser takes all” type of solution, as we term it here, is clearly misguided once we consider in more detail the requirements of causation as applied to this case.

Specifically, under the circumstances of *Example 1*, Player B must preponderantly prove that if it had not been for Player A's participation, she, Player B, would have won the final (and, thus, the \$1M prize). However, it is not at all

35. It might be that in addition to the \$1M award, Player A enjoyed other benefits from winning the tournament, such as fame, reputation, and potential advertising jobs, as well as non-monetary benefits, such as a sense of elation and pride associated with the prestigious victory, which are harder to quantify. Our analysis concentrates on the disgorgement of the \$1M prize for simplicity reasons; however, the suggested solution below may also be applied by taking such benefits into account.

36. RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 1 (AM. LAW INST. 2011) (“A person who is unjustly enriched *at the expense of another* is subject to liability in restitution.”) (emphasis added).

37. According to this rule, the plaintiff must prove her case against the defendant by a probability higher than fifty percent. *Supra* note 5 and accompanying text.

clear that Player *B* would have won the tournament if it were not for Player *A*. True, Player *A* won the final against Player *B* unfairly, but Player *A* also won the semi-final, again unfairly, against Player *C* and the quarter-final against Player *D*. Thus, if it were not for Player *A*'s participation, Player *C* might have won the semi-final and subsequently might have won against Player *B* in the finals. Therefore, if it were not for Player *A*, it might have been Player *C*, and not Player *B*, who would have won the tournament.

To further illustrate this point, consider the possibility that Player *D* was, in fact, by far the best player and only lost due to the fact that Player *A* cheated. If this is the case, had it not been for her loss in the quarter-final to the cheating Player *A*, Player *D*, as the best player, might as well have advanced to the semi-final and handily won against Player *C*. Player *D* would then have played in the final against Player *B*. Being by far the best player, Player *D* most likely would have won the final against Player *B* and, therefore, the tournament. In other words, the fact that Player *B* ended up playing against Player *A* in the final is not indicative of Player *B*'s superior skill compared to Player *D*, but is merely the result of the fact that player *D* was unfortunate enough to play against the cheating Player *A* at the quarter-final stage, while Player *B* only encountered the cheating Player *A* in the final. Thus, it is very much possible that had it not been for Player *A*'s ill-gotten victory, it would have been Player *D*, not Player *B*, who would have won the prize. This analysis demonstrates that the fact that Player *B* was the runner-up in the final does not mean that she would have won the tournament in the absence of Player *A*. In truth, the identity of the ultimate winner is somewhat more difficult to determine and depends on the relative chance of each player to win a match against the others.

What might those chances of winning be for Players *B*, *C*, and *D*? To keep the analysis as simple as possible, assume that Player *D*, the strongest of the three, had a 70% chance of winning a match against either Player *B* or Player *C*. Assume further that Player *B* and Player *C* were more equally matched, and each had an equal chance to win a match against the other. Under these assumptions, the probability of each player to win the tournament in the absence of the cheating Player *A* can be calculated.³⁸

Consider first the chances of Player *D* to win the tournament in the absence of Player *A*. In this case, Player *D* would still have to win the semi-final against Player *C* (a 70% chance) and then win again against Player *B* in the final (a 70% chance). This means that Player *D* had an overall chance of 49% of winning

38. For this purpose, a court may consider, for example, a counterfactual in which Player *A*'s drug use would have been discovered before the tournament had started and Player *A* was therefore banned from participating in it, or in which Player *A* was absent from the tournament all together. Both these counterfactuals comply with the conventional perception of factual causation, according to which a conduct is a factual cause of an outcome if it can be determined that the latter would not have occurred absent the conduct. *See, e.g.*, RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 26 (AM. LAW. INST. 2010).

the tournament and receiving the \$1M award.³⁹ Similarly, for Player *C* to win the championship, she would have needed to win the semi-final against Player *D* (a 30% chance) and then the final against Player *B* (a 50% chance). This means Player *C* would have had a 15% chance of winning the tournament in the absence of the cheating winner.⁴⁰ Finally, Player *B* would have remained with a 36% chance of winning.⁴¹ In conclusion, our simple numerical illustration shows that Player *B* was not necessarily the most likely alternative winner, and there is no justification for allowing her full restitution of the \$1M sum just because she was the actual runner-up in the final. Allowing her to enjoy a full disgorgement of the \$1M award would therefore be unjust. Such an outcome provides Player *B* with a windfall benefit she would not necessarily have received if Player *A* had not competed.⁴² Our specific illustration proves a much broader point: there is no general reason to assume, as the “loser takes all” solution would suggest, that the *second in line to win* is also the *most likely to win* and therefore worthy of receiving the restitutionary remedy.

B. Denying Restitution

Having established that a simple rule preferring the second contender is unjustified, a second solution would be to deny restitution all together. Considering the difficulty each of the players in *Example 1* is facing in proving her case beyond the required 50% threshold, it seems inevitable that they will all be denied a remedy. To illustrate this claim more specifically, recall that under the assumptions given above, Player *B* had a 36% chance of winning the award in the absence of Player *A*, while Player *C* and Player *D* had a 15% chance and a 49% chance, respectively. Under prevailing law, in these circumstances, none of the three claimants is entitled to restitution, as none of them was able to prove her claim beyond 50% as required by the preponderance of the evidence rule. More generally, restitution can be denied here regardless of the exact specifics of the example given above, but based on the more general logic it represents. Thus, restitution is denied due to the inherent difficulty for each claimant to prove she would have been the winner in the absence of Player *A*.

However, the solution of denying restitution is problematic. It both leaves Player *A* with ill-gotten gains and deprives Players *B*, *C*, and *D* of their rights with no possibility for redress. This outcome generates a severe deficiency in terms of deterrence, as it allows a wrongdoer to benefit from her wrong. The problem of

39. $70\% \times 70\% = 49\%$

40. $30\% \times 50\% = 15\%$

41. Player *B* remains with a 36%-win chance since Player *D* and Player *C* had a 49% and 15%-win chance, respectively ($100\% - 49\% - 15\% = 36\%$). The same result obtains (naturally) also if we calculate the chances of Player *B* directly, based on a 30% win-rate in case she plays in the final against Player *D* (70% of the time), plus a 50%-win rate in case she plays in the final against Player *C* (30% of the time). That is: $70\% \times 30\% + 30\% \times 50\% = 36\%$.

42. See *supra* note 38.

under-deterrence might be addressed if, for example, the tournament committee would file suit against Player *A*, asserting restitution of the reward money following Player *A*'s breach of contract.⁴³ This solution, however, does not address the fact that Players *B*, *C*, and *D* were robbed of their opportunity to win the tournament and leaves them all without compensation. As the next section illustrates, such compensation to Player *A*'s competitors is justified from an interpersonal justice perspective.⁴⁴

C. Probabilistic Restitution

Our proposed regime offers to replace the existing all-or-nothing restitutionary solutions based on the preponderance of the evidence rule with a probabilistic restitution regime, which would allow Players *B*, *C*, and *D* (each) a restitutionary remedy in accordance with their ex-ante chances of winning the prize (as opposed to full disgorgement in the amount of \$1M). According to our suggestion, in *Example 1*, each player would be entitled to a payment of some part of the prize, representing her chance of winning the \$1M reward. For instance, under the assumptions detailed above, Players *B*, *C*, and *D* will be entitled to restitution of \$360K, \$150K, and \$490K, respectively, representing 36%, 15%, and 49% of the total sum of \$1M.⁴⁵

This solution is preferable to the solutions previously discussed. First, unlike the “loser takes all” solution, it does not randomly prefer one player (Player *B*) at the expense of the others. The “loser takes all” regime provides full disgorgement to whoever achieved second place, regardless of the fact that had it not been for the wrong, the winnings would not have necessarily (or even most likely) gone to that player. As *Example 1* shows, this conclusion is particularly strong in competition settings with several rounds.⁴⁶ In these circumstances, the “loser takes all” regime may lead to a distorted inference that does not at all reflect the actual connection between Player *A*'s wrongfulness and its probable outcome. Similarly, as illustrated above, the solution that denies a remedy altogether, based on the preponderance of

43. A review of the subject of disgorgement of profit in cases of breach of contract is not within the scope of our discussion. For such a review, see, for example, Melvin A. Eisenberg, *The Disgorgement Interest in Contract Law*, 105 MICH. L. REV. 559 (2006); E. Allan Farnsworth, *Your Loss or My Gain? The Dilemma of the Disgorgement Principle in Breach of Contract*, 94 YALE L.J. 1339 (1985); Caprice L. Roberts, *A Commonwealth of Perspective on Restitutionary Disgorgement for Breach of Contract*, 65 WASH. & LEE L. REV. 945 (2008). For an economic perspective on the disgorgement remedy, see Yehonatan Givati & Yotam Kaplan, *Over-Reliance Under Contractual Disgorgement*, 20 AM. L. & ECON. REV. 82 (2018).

44. *Infra* notes 47–50 and accompanying text.

45. This computation of the restitutionary remedy is based on a causal but-for test. This test presents a counterfactual scenario in which the wrongdoer did not commit the wrong. As the wrong committed by Player *A* towards her rivals was participating in the tournament under the influence of performance-enhancing drugs (as opposed to merely taking those drugs), Players *B*, *C* and *D* are entitled to restitution based on the counterfactual scenario in which Player *A* did not participate in the tournament (rather than a scenario of merely not taking drugs).

46. *Supra* notes 39–41 and accompanying text.

the evidence rule, fails to produce just results as well.⁴⁷ Under this rule, as no single contestant can prove beyond a fifty percent probability that she would have received the \$1M prize but for Player *A*'s participation in the tournament, all the contestants would be denied restitution.

By contrast, probabilistic restitution complies with both deterrence considerations and the requirements of justice. It enables a court to strip Player *A* of her wrongful gains, thus neutralizing the incentives to commit similar wrongs in the first place. The probabilistic solution also complies with corrective justice. Ariel Porat and Alex Stein suggest that loss of chance can be perceived in itself as an independent injury.⁴⁸ In light of this view, under the proposed regime, Players *B*, *C*, and *D*, who lost their chances of winning as a result of Player *A*'s wrongfulness, can recover according to their losses. Applied in negligence cases, and in particular in medical misdiagnosis cases, the doctrine of loss of chance is commonly used to evaluate victims' diminished chance of survival or recovery,⁴⁹ which is the *harm caused to the victims* by the negligent defendant. *Example 1* illustrates a mirror image of that idea: it offers a case in which the loss of chance doctrine can be used to evaluate the plaintiff's lost opportunity to win a reward or a prize in a competitive setting, which is the *benefit taken by the defendant for her own profit*. The suggested probabilistic recovery thus allows Players *B*, *C* and *D* to recover precisely what was taken from them (or its monetary equivalent). Probabilistic restitution might also be justified in light of Ernest Weinrib's theory of corrective justice. Weinrib explains that while some rights deal with wrongful interference with personal integrity, other rights stem from the special relationship between the parties, which creates an obligation to act in a particular way.⁵⁰ A thorough analysis of the right-based contours of this relationship is not within the scope of this Article. Nonetheless, we

47. *Supra* notes 43–44 and accompanying text.

48. PORAT & STEIN, *supra* note 7, at 120–25. For a critique of this view, see Ernest J. Weinrib, *Causal Uncertainty*, 36 OXFORD J. LEGAL STUD. 135, 160 (2016) (arguing that a right to a chance of avoiding a wrongful outcome is hard to align with the plaintiff's standard right to be free of the wrongful outcome itself).

49. See, e.g., PORAT & STEIN, *supra* note 7, at 120–25 (asserting that in many cases, the doctrine of loss of chance is not sufficient to address the problem of uncertainty when it results from an epistemological problem; in such cases, the authors propose turning to the evidential damage doctrine); David A. Fischer, *Tort Recovery for Loss of a Chance*, 36 WAKE FOREST L. REV. 605 (2001) (arguing that the broad formulation of the loss-of-chance doctrine should be limited to a case-specific solution rather than a general principle); Saul Levmore, *Probabilistic Recoveries, Restitution and Recurring Wrongs*, 19 J. LEGAL STUD. 691 (1990) (arguing that ruling according to chances has become common in medical malpractice cases because these cases often feature recurring events for which statistical data exists and also because in these cases the injurers are not enriched by their wrongdoing and therefore restitutionary damages cannot be awarded).

50. Weinrib, *supra* note 48, at 161–63 (explaining that by agreeing to compete against each other, competitors accept a set of commitments against other participants); see also Nicolas Cornell, *On Homer Blosser Reed's "The Morals of Monopoly and Competition"*, 125 ETHICS 533, 534 (2015) (discussing anticompetitive behavior in the market as a wrong towards one's competitors, and observing that this sort of wrong raises interesting questions about the distinction between public and private law, the interpersonal relationship between the competitors, and the public policy that market competition aims to realize).

find the intuition that the idea of probabilistic restitution can correlate with corrective justice noteworthy. This intuition is based on the understanding that the special factual framework of the tennis tournament to which all the players knowingly and willingly entered constituted a special kind of relationship between them, thus creating a “normative net” of reciprocal rights that the players hold against each other to compete fairly, that is, without the use of performance-enhancing drugs. Player *A* clearly violated that right against the other players. The very meaning and scope of that right was to give each of the players a fair chance of winning the tournament.⁵¹ A recovery based on the players’ chances of winning multiplied by the \$1M prize thus gives Players *B*, *C*, and *D* the monetary value of what was taken from them.⁵² This also explains why the two all-or-nothing solutions (of either “loser-takes-all” or denying restitution all together) are inappropriate in *Example 1*. The right that Player *A* violated towards each of his rivals is not the right to win the tournament but rather the right to have a fair chance of winning. Therefore, determining Player *A*’s scope of liability towards his rivals in probabilistic terms correlates with the particular right that Player *A* actually infringed toward each one of them. Probabilistic restitution similarly fits under the framework of *relational justice*, offered by Hanoch Dagan and Avihay Dorfman as the normative foundation for a just system of private law.⁵³ Dagan and Dorfman argue that private law must establish terms for just interpersonal interactions and that relational justice obligates parties to meet each other as free and equal individuals. In the context of *Example 1* this entails the relational duties of mutual respect that players in the tournament hold against each other to interact in a just way, and, inter alia, refrain from cheating each other. Lastly, probabilistic restitution can also be justified in light of the doctrine of evidential damage, which Porat and Stein suggest for cases of uncertainty caused to identifiable victims. This doctrine allows the court to hold a wrongdoer accountable for factual uncertainty that frustrated the court’s ability to accurately determine the facts, if the court finds that this uncertainty resulted from the wrongdoer’s own misconduct.⁵⁴ According to this

51. See *Chaplin v. Hicks* [1911] 2 KB 786 (Eng.). In this famous case, the plaintiff, a contestant in a beauty pageant, was prevented by the contest organizer, in breach of their contract, from participating in one of the stages of selection. The court held that the object and scope of the contract were to give the plaintiff the chance of being selected as a prize-winner, and the plaintiff was allowed a substantial award of damages that took her lost chance into account, given the number of contestants as well.

52. For simplicity, *Example 1* considers the \$1M prize to be the full benefit from winning the championship. If additional gains are produced for the winner (such as sponsorships or reputation) those can also be apportioned based on the probabilistic restitution regime we describe here.

53. Hanoch Dagan & Avihay Dorfman, *Just Relationships*, 116 COLUM. L. REV. 1395 (2016); Hanoch Dagan & Avihay Dorfman, *Justice in Private: Beyond the Rawlsian Framework*, 37 L. & PHIL. 171 (2018); Hanoch Dagan & Avihay Dorfman, *Postscript to Just Relationships: Reply to Gardner, West, and Zipursky*, 117 COLUM. L. REV. ONLINE 261 (2017); see also HANOCH DAGAN & MICHAEL HELLER, *THE CHOICE THEORY OF CONTRACTS* (2017).

54. PORAT & STEIN, *supra* note 7, at 160. Porat and Stein explain that this doctrine acknowledges the right of plaintiffs to sue for the damage inflicted to their autonomy as a result of being deprived of the information required to make an informed choice regarding their legal right.

doctrine, damages awarded to each plaintiff should reflect the value of the information that the wrongdoer deprived from each of them, which can be assessed by their chances to establish their claim. The concept of evidential damage can apply, *mutatis mutandis*, in restitution cases in which causal ambiguity was caused by the wrongdoer's action, as is the case in *Example 1*. The reasoning is that the defendant's wrong deprived the plaintiffs of their chances to prove their claim, and they should therefore be compensated for this loss.⁵⁵ Thus, by cheating, Player *A* deprived the other players not only of the chance to win, but also of the chance to prove their ability to win. In particular, assuming again that Player *D* was in fact the best contender, the misconduct by Player *A* deprived Player *D* not only of her victory, but also of her ability to prove her case beyond the preponderance of the evidence, by creating a case involving causal ambiguity and multiple restitution claimants.

The proposed probabilistic restitution regime applied thus far to cases of competitive sports is just as relevant in other contexts, such as in cases involving commercial bidding wars. Bidding wars represent another form of competition and therefore display a similar structure to the sports context once one competitor chooses to cheat at the expense of all others. This dynamic can be illustrated through the case in *Iconco v. Jensen*,⁵⁶ in which the United States Army issued an invitation for bids. According to the terms of this invitation, only bidders who were considered small businesses could be considered for the job.⁵⁷ A company by the name of Jensen submitted the lowest proposal and accordingly received the contract, performed the job, and obtained profits. Later on, it was revealed that Jensen's average annual gross receipt exceeded the maximum amount allowed to be considered a small business. Consequently, Iconco, who submitted the second-lowest proposal, sued Jensen for the profits it had made under the contract. The court found that Iconco preponderantly proved that it would have received the contract in the absence of Jensen's participation. Accordingly, Iconco won its case and recovered the profits that Jensen obtained through the contract. Building on this case, one is led to wonder what should have been the court's ruling in a similar case if Iconco and another bidder had equal chances to win the contract but for

PORAT & STEIN, *supra* note 7, at 194–95. The evidential damage doctrine was criticized, inter alia, for imposing liability on defendants even when evidential difficulties resulted from sources other than the defendant's wrongful behavior. See, e.g., Maytal Gilboa, *Multiple Reasonable Behaviors Cases: The Problem of Causal Underdetermination in Tort Law*, 25 LEGAL THEORY 77 (2019); Jane Stapleton, *Ariel Porat and Alex Stein, Tort Liability Under Uncertainty*, 66 MOD. L. REV. 308, 310–12 (2003).

55. That is, to the extent that a court acknowledges that the defendant's wrong deprived the plaintiffs of their chances to prove their claim, and they should therefore be compensated for this loss.

56. 622 F.2d 1291 (8th Cir. 1980).

57. The goal of this provision was to help small businesses by assuring they receive a fair proportion of government contracts. See *id.* at 1298; see also Grosskopf, *supra* note 23, at 2016 (using this case to illustrate that the law of restitution provides a useful tool, in the form of private enforcement, to contend against anti-competitive behavior in the market).

Jensen's participation.⁵⁸ Under the current restitutionary regime, in which the loser either takes all or nothing (depending on her success at proving her case to a probability higher than fifty percent), in these circumstances, both Iconco and the other bidder would have been completely denied restitution. Jensen, on the other hand, would have been left with ill-gotten gains. Our proposal of probabilistic restitution allows a division of the illegal profit in accordance with the estimated chances of winning the bid, thus allowing Iconco and the other bidder to equally split the gain. In these circumstances, the proposed remedy of probabilistic restitution would have incentivized Jensen to make sure it accommodated the bids' threshold requirements ex-ante and would also compensate the other bidders for the infringement of their right to have a fair chance to win the bid; a right constituted by the special relationship that the bidders who entered into this particular competitive setting reciprocally share among themselves.⁵⁹

II. INVALID PATENTS

This Part demonstrates the advantages of probabilistic restitution in the context of abuse of patent rights. Importantly, the cases of interest for our purposes are not those in which one competitor is infringing on another's patent rights, but rather cases in which firms or individuals fraudulently obtain their patent rights to stifle competition and harvest monopolistic gains.

In *Walker Process Equipment Inc. v. Food Machinery & Chemical Corp.*,⁶⁰ the United States Supreme Court held that when a monopolist secures a patent by defrauding the Patent Trademark Office, competitors excluded by the resulting patent can bring suit under Section 2 of the Sherman Act.⁶¹ Years later, in *Handgards, Inc. v. Ethicon, Inc.*,⁶² the Ninth Circuit held that regardless of how a monopolist acquires an invalid patent, if it had known of that patent's invalidity and nonetheless continued to enforce it to eliminate competition, a Section 2 violation may rise.⁶³ *Walker Process* and *Handgards* claims are usually asserted as counterclaims by accused patent infringers and are increasingly common.⁶⁴ These claims are perceived as variants of common law fraud.⁶⁵ However, to successfully prove them,

58. This question was also raised by Grosskopf, who chose to leave it for future investigation. See Grosskopf, *supra* note 23, at 2016 n.118.

59. See *supra* notes 50–51 and accompanying text.

60. 382 U.S. 172 (1965).

61. *Id.* at 176–77.

62. 601 F.2d 986 (9th Cir. 1979).

63. For a thorough review of the use of *Walker Process* and *Handgards* claims, see Christopher R. Leslie, *The Anticompetitive Effects of Unenforced Invalid Patents*, 91 MINN. L. REV. 101 (2006).

64. Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75, 76 (2005) (stating that roughly half of all litigated patents are found to be invalid); Gideon Mark & T. Leigh Anenson, *Inequitable Conduct and Walker Process Claims After Therasense and the America Invents Act*, 16 U. PA. J. BUS. L. 361, 396 (2014).

65. *Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc.*, 375 F.3d 1341, 1358 (Fed. Cir. 2004); *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 1069–70 (Fed. Cir. 1998); *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 882 F.2d 1556, 1563 (Fed. Cir. 1989).

the claimant must not only show that the patent was acquired or held through intentional fraud⁶⁶ but also that the fraud caused the patentee to acquire or maintain monopoly power against existing and potential competitors.⁶⁷

Successful claimants can obtain damages or an injunction (or both), respectively under Sections 4 and 16 of the Clayton Act.⁶⁸ In addition, both scholars and courts have recognized the need to adopt disgorgement remedies to strip fraudulent patentees of the ill-gotten gains they have received through sales and licensing royalties over the years of the patent; such remedies may skyrocket, sometimes amounting billions of dollars.⁶⁹ Disgorgement of these profits is necessary to eliminate the patentee's incentives to file for or maintain invalid patents and so exclude actual and potential competitors in the same market.⁷⁰ An interesting question is whether fraudulent patent applications indeed violate antitrust laws. As Judge Posner explained in *Brunswick Corp. v. Riegel Textile Corp.*,⁷¹ provided that a particular patent would have been issued to *someone*, the identity of the particular patentee has no antitrust consequences.⁷² The consumers would have anyway faced

66. The Federal Circuit has articulated a five-element test that defines patent fraud as: (1) a representation of a material fact; (2) the falsity of that representation; (3) the intent to deceive or, at least, a state of mind so reckless as to the consequences that it is held to be the equivalent of intent; (4) a justifiable reliance upon the misrepresentation by the party deceived which induces him to act thereon; and (5) injury to the party deceived as a result of his reliance on the misrepresentation. See *In re Spalding Sports Worldwide, Inc.*, 203 F.3d 800, 807 (Fed. Cir. 2000).

67. Potential competitors are reluctant to compete because the patent-holder is lying to them, claiming it has a right that it knows it does not have. See, e.g., *K-Lath v. Davis Wire Corp.*, 15 F. Supp. 2d 952, 964 (C.D. Cal. 1998) (stating that “[t]he Federal Circuit and Supreme Court clearly require the enforcement or assertion of the patent as an element necessary to establish antitrust liability”); *Struthers Sci. & Int’l Corp. v. Gen. Foods Corp.*, 334 F. Supp. 1329, 1331 (D. Del. 1971) (acknowledging that a precondition to imposing liability under Section 2 “is not the mere obtaining of a fraudulent patent which brings antitrust liability to its owner . . . [but] the assertion or enforcement of the issued patent acquired by fraud . . .”).

68. 15 U.S.C. §§ 15, 26 (2006).

69. See, e.g., Tun-Jen Chiang, *The Upside-Down Inequitable Conduct Defense*, 107 NW. U. L. REV. 1243, 1284, 1287 (2013) (observing that disgorgement is necessary to strip fraudulent applicants from the interim monopoly profits during the period between the patent’s issuance and its judicial invalidation, and stating that these profits are the conscious wrongdoer’s unjust enrichment according to the RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 51(4) (AM. LAW. INST. 2011)); Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 28 (2008) (acknowledging that the current state, in which invalid patents capture inequitable profits until they are in fact declared invalid, creates incentives to obtain and enforce dubious patents). For a similar suggestion made in relation to patent theft, see Christopher R. Leslie, *Monopolization Through Patent Theft*, 103 GEO. L.J. 47, 92–93 (2014) (arguing that patent theft falls within the ambit of *Walker Process* claims and then offering that to the extent that patent theft constitutes inequitable conduct, a disgorgement of resulting ill-gotten gains should be allowed); Allison Pruitt, *Keeping Patent Applicants Honest: A Proposal to Apply Disgorgement Remedies to Findings of Inequitable Conduct During Patent Prosecution*, 13 J. INTELL. PROP. L. 465, 487–88 (2006) (asserting that disgorgement is necessary to contend with the increasing phenomenon of invalid patents); Kenneth L. Spector, *Remedies for Fraud on the Patent Office*, 41 U. CHI. L. REV. 775, 780 (1974) (showing that the Supreme Court ruling in *Walker Process* indicates that such a remedy might be available to private parties).

70. Lemley, *supra* note 69, at 28.

71. 752 F.2d 261 (7th Cir. 1984).

72. *Id.* at 265.

the monopoly power of some patentee, whoever the specific patentee-company would have been.

A thorough review of Judge Posner's ruling is not within the scope of this Article. For our purposes, this ruling is worth noting because it sharpens the importance of disgorgement as a private remedy available to the direct victims of a fraudulent patentee, namely its actual and potential competitors, who lost their chance to be the first-to-file due to the patentee's fraud. By infringing that right, the patentee obtained its monopolistic profit at their expense. However, as *Example 2* below demonstrates, to appropriately grant disgorgement in these cases, the courts must consider applying probabilistic restitution.

Example 2: Company *A* holds a patent to a widget and has been selling the widget to consumers for ten years. During this period, Company *A* has made a (net) profit of \$100M from selling the widget. Company *B* files suit against Company *A*, alleging that its patent is invalid due to Company *A*'s material misrepresentation to the Patent Office. Ultimately deciding in favor of the plaintiff, the court found that Company *A* obtained its patent through fraudulent misrepresentation and that the patent is therefore invalid. Company *B* alleges that had it not been for the invalid patent held by Company *A*, it would have filed for the patent itself and thus legally obtained the profits fraudulently made by Company *A*. Three other competitors make similar claims.

Example 2 illustrates a claim in restitution for monopolistic gains obtained by fraud.⁷³ Company *A* enjoyed a monopoly over the market for the widget and exploited this monopoly for a period of ten years, subsequently securing a \$100M profit. The claim raised separately by Company *B* and each of the other competitors is that Company *A* robbed (each of) them of this profit. This claim could only hold for a claimant who can preponderantly prove that had Company *A* not fraudulently obtained the patent, by all likelihood it is it who would have obtained the patent. This assertion is harder to establish in a reality of multiple capable competitors, who took part in the "race to patent"⁷⁴ but eventually failed to file first, that is, before Company *A* (fraudulently) did. Thus, even though it is clear that Company *A* was unjustly enriched at the expense of one of its competitors, it might be very hard to know with any degree of certainty which of them was in fact the source of this

73. See *supra* notes 61–62 and accompanying text.

74. In its current form, the first-inventor-to-file rule is effective in the U.S. as of March 16, 2013. See 35 U.S.C. § 103 (2012). According to this rule, the patent is issued to the first applicant to file for it. It should be noted that until 2013, the U.S. applied a first-to-invent rule. See Robert P. Merges, *Priority and Novelty Under the AIA*, 27 BERKELEY TECH. L.J. 1023 (2012) (stating the advantages in shifting to the first-to-file regime but also acknowledging that the former first-to-invent rule, which reflects a preference of novelty over the current time priority regime, will also continue to influence courts' rulings in the future); Suzanne Scotchmer & Jerry Green, *Novelty and Disclosure in Patent Law*, 21 RAND J. ECON. 131, 133–34 (1990) (examining the requirements of both rules and comparing them from a social economic standpoint).

enrichment. Accordingly, it is unclear which of the competitors is entitled to the ill-gotten profit gained by Company *A*.

A. Loser Takes All

The first possible legal solution to the problem posed by *Example 2* is to give the requested patent protection, after the fact, to the company which seems most likely to have been able to secure a patent if it had not been for the invalid patent held by Company *A*. This solution seems to comply with the first-to-file rule, in light of which only one company would have been entitled to patent protection for the widget, namely, the company that was first to file for a valid patent.⁷⁵ For instance, assume that Company *B* can show that had Company *A* not fraudulently filed for the patent, Company *B* was more likely than any other competitor to have been able to file for a valid patent. In this case, the court could order Company *A* to disgorge its full profits of \$100M to Company *B*, leaving the rest of the competitors with nothing (even though they also lost their chances to file for the patent and enjoy the subsequent profits). We argue that this “loser takes all” type of solution underappreciates the complexities of the proof of causation in multiple claimants’ restitution cases and produces inappropriate results. Even if Company *B* is able to prove that it was *more likely than any other competitor* to have been the first to file (after the cheating Company *A*), it does not follow that it had a *fifty percent chance or higher* of doing so, as required to prove its claim beyond the required preponderance of the evidence. In this case, its claim in restitution will be denied, and Company *A* will get to keep the ill-gotten profit.

To illustrate such a scenario, assume that Company *B* can prove, to a 40% probability, that it would have been the first to file for the patent (after Company *A*). Similarly, assume also that each of the other three competitors can prove the same, however only at 20%. These assumptions illustrate a possibility in which Company *B*, although more likely to be the first to patent compared to any other competitor, is nevertheless unable to prove its claim beyond the required fifty percent threshold. In these conditions, even if Company *B* seems to be a stronger claimant compared to the others and the more likely candidate to be second in line to patent, it might not be enough to justify its claim. On the other hand, if Company *B* is granted restitution of \$100M in these terms,⁷⁶ it would be unjustly enriched at the expense of the other claimants, each of which might have filed for the patent first, but its chance to do so was taken from it by Company *A*’s fraudulent behavior.

75. Scotchmer & Green, *supra* note 74, at 133.

76. Even if it cannot prove its case beyond 50%, Company *B*’s claim can be supported under the Maximum Likelihood Rule suggested by David Kaye. See David Kaye, *The Limits of the Preponderance of the Evidence Standard: Justifiably Naked Statistical Evidence and Multiple Causation*, 7 AM. B. FOUND. RES. J. 487, 508–13 (1982) (explaining how according to this rule, suggested in connection with multiple wrongdoers in tort cases, a “dominant defendant” can be held liable for all the damages, even if its dominance does not reach the 50% probability threshold; adjusting this idea to the mirror restitution case, which stands at the focus of this Article, Company *B* can sue in restitution as a “dominant plaintiff.”).

B. Denying Restitution

When none of the claimants can prove its claim beyond a fifty percent probability, as described above, a second solution would be to deny a remedy altogether. According to this solution, if Company *B* can prove its claim only to a 40% probability and each of the other competitors can only prove its claim to a certainty level of 20%, they all should be barred from any amount of recovery. As discussed above, we find that this solution is also inappropriate, as it denies a remedy where one should be granted.⁷⁷ Company *A* obtained its patent through fraud, and by so doing, it also infringed on its competitors' right to have a chance to file first. Restitution is therefore justified in order to correct the injustice that resulted from Company *A*'s misconduct. Furthermore, it is also a necessary means to prevent a problem of under-deterrence, which would inevitably result if Company *A* is allowed to keep its ill-gotten gains.⁷⁸

C. Probabilistic Restitution

Probabilistic restitution resolves the difficulties that arise under the "loser takes all" rule and the rule denying restitution. Probabilistic restitution duly compensates the competitors of Company *A* for the infringement of their right to have a fair chance to file for the patent first.⁷⁹ Accordingly, each competitor is entitled to a restitutionary award in an amount correlating with the right taken from it. The measure of restitution should therefore be divided between Company *A*'s competitors, in accordance with their ability to prove their ex-ante chances of being the first to file for the patent. Thus, Company *B* would be entitled to restitution in the amount of \$40M, and each of the other three claimants would be entitled to the amount of \$20M. This solution is not only just but also deters companies and individuals from fraudulent patent filing, since Company *A* is stripped here of all illegal profits.

III. MONEY FRAUDS & PYRAMID SCHEMES

This Part demonstrates the relevance of probabilistic restitution in money fraud scenarios involving multiple victim-claimants. As this Part shows, the proposed restitutionary regime is also appropriate for victims of money schemes who seek to recover their money (or at least what is left of it) out of a common pool, long after the defrauding wrongdoer has become legally irrelevant.⁸⁰ A prominent example of such a scenario is the Ponzi or pyramid scheme.⁸¹

77. See *supra* notes 43–44 and accompanying text.

78. See *supra* note 23 and accompanying text.

79. See *supra* note 48 and accompanying text.

80. Usually, by the time investors understand they have been scammed, the operator of the scheme has become insolvent, and the innocent investors are left to fight among themselves for whatever is left of their money. See *infra* note 81 and accompanying text.

81. These schemes are named after Charles Ponzi, who lured thousands into lending him money by promising to return \$150 for every \$100 loan. Ponzi never invested the money, but instead used new

In such fraud cases, a firm (or individual) is paying its investors with money obtained from deposits by new investors, instead of using money from profits obtained through legitimate business ventures.⁸² By the time investors understand they have been scammed, the lion's share of the funds is usually long gone, the Ponzi operator is insolvent,⁸³ and the innocent investors⁸⁴ are left to fight among themselves for the meager remaining pieces of the pie.⁸⁵ To illustrate the current solutions generally applied in such cases and the difficulties they pose, consider *Example 3* below. This example is based on a simplified model of the unfortunate outcomes that follow from a standard Ponzi scheme.

deposits to pay out older loans. The fraud continued until a petition in bankruptcy was filed. For a thorough description of this scheme, see *Cunningham v. Brown*, 265 U.S. 1, 7–8 (1924).

82. Miriam A. Cherry & Jarrod Wong, *Clawbacks: Prospective Contract Measures in an Era of Excessive Executive Compensation and Ponzi Schemes*, 94 MINN. L. REV. 368, 396 (2009) (describing the general pattern of Ponzi schemes and the dilemma they create for investors after they collapse).

83. Courts usually presume Ponzi scheme operators as insolvent from the inception of the scheme as a matter of law, particularly if they have no other legitimate businesses. See Mark A. McDermott, *Ponzi Schemes and the Law of Fraudulent and Preferential Transfers*, 72 AM. BANKR. L.J. 157, 171–72, 183 (1998).

84. Investors who had sufficient knowledge of the scheme may be perceived as part of an actual fraud and can therefore be stripped of even the principal amount they invested in the fund. RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 67 cmt. f (AM. LAW INST. 2011) (suggesting an illustration demonstrating this principle). The following statement by Judge Posner summarizes courts' attitudes toward investors who should have suspected fraud to begin with: "[o]nly a very foolish, very naïve, very greedy, or very Machiavellian investor . . . would jump at a chance to obtain a return on his passive investment of 10 to 20 percent a month." *Scholes v. Lehmann*, 56 F.3d 750, 760 (7th Cir. 1995); cf. Saul Levmore, *Rethinking Ponzi-Scheme Remedies in and out of Bankruptcy*, 92 B.U. L. REV. 969, 978, 981–87 (2012) (discussing the problem of collective action among investors, as each investor assumes that others must have investigated and found no reason for concern. Levmore therefore suggests a mechanism that will incentivize suspicious investors to exit as soon as possible, in order to accelerate the collapse of the Ponzi scheme).

85. For the purpose of illustrating probabilistic restitution, we kept the example in the text as simple as possible. It should be noted, however, that in reality some investors might have been luckier than others and have recovered their initial investment before the collapse of the scheme. Generally, investors have a claim for restitution only if they have a positive "net equity," that is, only if the amount they withdrew from the fraudulent fund is smaller than the amount of money they originally deposited. See *In re Bernard L. Madoff Inv. Sec., LLC*, 654 F.3d 229, 236–42 (2d Cir. 2011) (discussing the advantages of the "net equity" method provided that all the required references of payments are ascertainable from books and records). Sometimes, these lucky investors, also known as the "winning investors," even receive excessive payments, beyond their original investment amount, before the fraud is discovered. As these excessive payments are not actual profits, but rather contributions by other investors, they may be subject to restitution. See, e.g., *Scholes*, 56 F.3d at 757 (holding that a winning investor must return the profits which are actually stolen from the other investors); *Fisher v. Sellis (In re Lake States Commodities, Inc.)*, 253 B.R. 866, 872 (Bankr. N.D. Ill. 2002) (contending that payments received in excess of amounts invested by the so-called winning investors "are considered fictitious profits because they do not represent a return on legitimate investment activity"). For a profound overview of the legal relationship between the "luckier investors," who received their money back, and those who were not as lucky, see Cherry & Wong, *supra* note 82, at 395–97 (referring to the lucky investors as "winning investors," discussing the loser investors' rights against them, and suggesting a contractual claw-back mechanism to contend with the inequality that the winners-losers investors situation creates).

Example 3: An investment fund run by Mr. Dubious is exposed as a Ponzi scheme. Currently, the total assets of the fund equal only \$1M. This sum is probably traceable to a single investor, but it is difficult to know for sure. More specifically, assume that Investor *A* recently invested a sum of \$1M into the fund and that it can be proven, at a degree of certainty just slightly over fifty percent, that the money currently held by Mr. Dubious' fund is the same money recently invested by Investor *A*. Alternatively, it is also possible that the money currently held by the fund is a sum put there by any other of a long list of investors, each of which also invested a sum of \$1M at an earlier date. For simplicity, assume five such investors exist (that is, in addition to Investor *A*) and that there is a ten percent chance that the sum in the fund is traceable to each one of them.

This hypothetical illustrates a typical scenario. Mr. Dubious' fund is currently holding a sum of \$1M illegally obtained at the expense of one of its investors. Yet, it is not completely clear which investor is the source of the unjust enrichment held by the fund. In this sense, this problem is similar to those discussed in Parts I and II; in all cases, a wrongdoer benefited through a misconduct, but it is not clear which one out of several claimants was the source of the wrongdoer's enrichment. *Example 3* poses the problem of dividing the remaining funds in the common pool between different victims of the same illegal financial scheme. This problem has been extensively studied by both academics and courts,⁸⁶ with two possible regimes emerging as prominent solutions: tracing⁸⁷ and pro rata division.⁸⁸

A. Loser Takes All & the Tracing Doctrine

In monetary fraud cases, courts utilize the doctrine of *tracing*, when possible,⁸⁹ in order to settle disputes and divide the remaining money between the different fraud victims. The concept of tracing expresses a property-style remedy.⁹⁰ It allows

86. See, e.g., *SEC v. Infinity Grp. Co.*, 226 F. App'x 217 (3d Cir. 2007) (using a pro rata mechanism to distribute the remaining funds among the fraud victims); *In re JD Services, Inc.*, 284 B.R. 292, 298 (Bankr. D. Utah 2002) (illustrating a tracing rule of "lowest intermediate balance," according to which the claimant is allowed to trace money into the commingled fund, that equals the lowest balance reached by the fund between the time at which the claimant's property was added to that fund and the time at which a withdrawal from the fund was made); *Rogers v. Rogers*, 473 N.E.2d 226, 227–28 (N.Y. 1984) (discussing the possibility of relaxing the tracing requirement in circumstances in which the claimant's asset can be reasonably deduced). For a thorough review of prominent court decisions contending with the problem of distributing the remaining funds among innocent fraud victims, see LIONEL D. SMITH, *THE LAW OF TRACING* 183–217 (1997); see also TAMAR FRANKEL, *THE PONZI SCHEME PUZZLE: A HISTORY AND ANALYSIS OF CON ARTISTS AND VICTIMS* 181–87 (2012).

87. The use of tracing in the context of commingled funds is settled in RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 59 (AM. LAW INST. 2011) (describing generally the difficulties of specifying the ownership of particular sums within a fund and the development and implementation of special rules designed to contend with these difficulties).

88. See *infra* note 96 and accompanying text.

89. Identifying a specific contribution to a fund consisting of multiple financial contributions is an extremely difficult, sometime completely impossible, task. See *supra* note 80.

90. SMITH, *supra* note 86, at 170 (observing that proprietary interests can be established in money).

the investors to prove that they are in fact the owners of the remaining funds or any part of them. Tracing thus creates a priority between the different investors based on their ability to trace their assets into the common pool of funds or identify their specific contributions. Whoever can trace her money in the fund's assets is entitled to recover it before other investors who cannot identify such a connection.⁹¹ In this sense, the tracing doctrine in cases of commingled funds endeavors to resolve a problem of causation, as the investors cannot prove which portion of the money left in the common pool resulted from their initial investment. A rigid implementation of the tracing doctrine in *Example 3* calls for full priority to Investor *A*, who can prove, beyond a fifty percent probability, that the sum currently held by the fund resulted from her contribution.⁹² Since Investor *A* can preponderantly prove her contribution to the fund, she is entitled to full restitution in the amount of her entire principal investment of \$1M. Since this amount exhausts all the money remaining in the fund, the other five investors are left with nothing. The simplicity of *Example 3* reveals a severe difficulty that the tracing solution entails. It creates a stark distinction between Investor *A* and all other investors. All investors made similar \$1M contributions to the common pool at different times, and yet, Investor *A* is absolutely preferred over them all. The preference favoring Investor *A* is especially striking, considering the fact that she receives the full recovery of \$1M, even though she was able to prove her ownership of that sum at a level much lower than one hundred percent certainty.

A similar result is achieved when courts apply a solution known as the *Clayton Rule*, named after the claimant in a famous 19th century English case.⁹³ This rule, highly criticized by U.S. courts and scholarship,⁹⁴ created a fiction according to which the funds first deposited in the common pool are also the first to leave it.⁹⁵ Accordingly, in *Example 3* above, the Clayton Rule would dictate that the sum of

91. The ability to trace their assets does not always benefit claimants. See, e.g., RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 59 illus.20 (illustrating a case based on *Gibbs v. Gerberich*, 203 N.E.2d 851 (Ohio Ct. App. 1964) and *In re Hackett's Will*, 46 N.Y.S.2d 415 (1944), in which clients transferred money to an attorney based on his fraudulent promises to invest the money, while he in fact deposited it into his personal bank account. The attorney then withdrew money from his account, leaving only a fraction of it. Later, he deposited money from other defrauded clients in that same account. As the earlier investors were able to trace their money going into the commingled fund and then leaving it, they were entitled to a smaller sum in restitution, compared to later investors whose contributions remained in the attorney's account.).

92. RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 58 cmt. e (observing that when a claimant seeks restitution from other innocent investors in her position, as in the cases we discuss here, the claimant will be subject to the rigid standard of proof as required in civil litigation and will thus need to prove her case to a probability higher than fifty percent).

93. *Devaynes v. Noble*; *Clayton's Case* (1816) 35 Eng. Rep. 781; 1 MER 571.

94. *In re Walter J. Schmidt & Co.*, 298 F. 314, 316 (S.D.N.Y. 1923) (holding by Judge Hand that in cases in which innocent people are jointly interested in a fund held for them by a common trustee, "throw[ing] all the loss upon one, through the mere chance of his being earlier in time, is irrational and arbitrary"). For a similar observation, see also SMITH, *supra* note 86, at 192–93.

95. The rule thus institutes a "first in first out" (FIFO) mechanism. SMITH, *supra* note 86, at 187–88.

\$1M currently in the fund belongs to the later investor—Investor *A*. Thus, according to this rule, Investor *A* should fully recover her \$1M investment, even if she is *unable* to preponderantly prove her entitlement to trace this sum into the fund. In other words, even if Investor *A* was able to prove that the money can indeed be traced to her contribution only to a degree of certainty of thirty percent, or even to a degree of just ten percent, the presumption established by the Clayton Rule would entitle her to restitution of the entire sum of \$1M, as long as she was the last to invest, while all other investors are left with nothing. In this sense, the Clayton Rule manifests a version of the “loser takes all” solution,⁹⁶ as it allows the first-in-line plaintiff to enjoy full restitution, even if it means that the other plaintiffs remain with nothing,⁹⁷ and even if the first-in-line plaintiff is unable to preponderantly prove her claim.

B. Pro Rata Division & the Denying of Tracing

The second possible solution, dominantly utilized by U.S. courts to divide the remaining funds between investors in cases similar to *Example 3*, is based on a simple pro rata mechanism.⁹⁸ According to this solution, Investor *A* should get her share in the fund in proportion to her respective contribution to it, as should the other five investors, despite the fact that Investor *A* has a better claim in tracing her contribution into the common pool.⁹⁹ This rule treats all victims of Ponzi schemes without any distinction, based on the idea that since all of them are victims of the same fraud, there should be no difference between them.¹⁰⁰ For that reason, the pro rata solution completely ignores the tracing doctrine and its property-style logic.¹⁰¹ In its terms, all six investors in *Example 3* are equally entitled to restitution, based on the size of their original contributions to the common pool.

As acknowledged in the *Restatement (Third) of Restitution and Unjust Enrichment*, the pro rata solution is not only inconsistent with the rules of property but also

96. For a discussion of the “loser takes all” solution, see *supra* Section I.A.

97. For a similar observation, see, e.g., *United States v. Durham*, 86 F.3d 70, 72 (5th Cir. 1996) (noting that “all claimants stand equal in terms of being victimized by the defendant defrauders. The ability to trace the seized funds to [specific claimants] is the result of the merely fortuitous fact that the defrauders spent the money of the other victims first.”).

98. See, e.g., *SEC v. Infinity Grp. Co.*, 226 F. App’x 217 (3d Cir. 2007) (reaffirming the district court ruling to pay Ponzi victims according to their investment, even though it was possible to trace assets to a particular investor); *SEC v. Credit Bancorp, Ltd.*, 290 F.3d 80 (2d Cir. 2002).

99. RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT § 59 cmt. g (AM. LAW INST. 2011) (stating that, orthodoxically, courts first turned to pro rata distribution only when tracing was impossible, but that nowadays they do so whenever they see fit).

100. See, e.g., Hanoch Dagan, *Restitution in Bankruptcy: Why All Involuntary Creditors Should Be Preferred*, 78 AM. BANKR. L.J., 247, 275 (2004) (noting that “if involuntariness is a necessary and sufficient condition to accord one type of unsecured creditor a priority over another, there is no reason to give any significance to the divergent abilities of restitution claimants to identify or trace their *res*.”); Andrew Kull, *Restitution in Bankruptcy: Reclamation and Constructive Trust*, 72 AM. BANKR. L.J., 265, 285 (1998) (stating that “[b]etween claimants similarly situated, the equities of restitution (like the equities of bankruptcy) favor ratable distribution.”).

101. See *supra* note 99.

essentially ignores questions of causation.¹⁰² To illustrate this difficulty, assume, for simplicity, that Investor *A* was able to prove with a one hundred percent certainty that the sum remaining in the fund belongs to her.¹⁰³ For instance, suppose that the fund was completely empty one day, and a day after, Investor *A* put a sum of \$1M into the fund —exactly one day before the scheme was exposed and its assets were frozen.¹⁰⁴ When it is so clear that the entire sum belongs to Investor *A*, it seems unjust to divide it among all creditors, whose money is long gone from the fund.

C. Probabilistic Restitution

We argue that courts should apply probabilistic restitution in money fraud cases involving multiple claimants. Thus, in *Example 3* above, probabilistic restitution would mean that Investor *A* is entitled to 50% (or slightly over 50%) of the sum remaining in the fund, while each of the other five investors is entitled to 10% of that same sum. These awards represent the probability that each investor contributed to the \$1M sum currently held in the fund and therefore offer the most appropriate remedial measure.

First, this solution is preferable over the solution based on the existing tracing doctrine and the Clayton Rule. Under these existing rules, Investor *A* is entitled to the full sum of \$1M, even if it is possible (say, a 49% probability) that the money currently held in the common fund actually belongs to another claimant. In fact, under the Clayton Rule, Investor *A* may be entitled to the full sum even in cases in which she was unable to trace the funds beyond the preponderance of the evidence. In the latter case, Investor *A* will be entitled to the full remaining sum simply by being the last to put money into the fund, even if the money remaining in the common pool actually belongs to another investor. These existing rules can therefore easily over-compensate some claimants at the expense of others, who are thus inevitably under-compensated. This outcome is unjust. These problems do not arise under the proposed probabilistic restitution regime, which guarantees each claimant a remedy precisely tailored to the probability that the sums in the fund in fact belong to her.

Secondly, probabilistic restitution is also preferable over the pro rata rule. The pro rata rule compensates each investor based on the size of her original contribution to the fund, while completely ignoring all considerations regarding the tracing of assets into the fund. This rule therefore over-compensates the other investors at the expense of Investor *A*, who does have a stronger claim to that

102. *Id.* (criticizing cases in which courts used pro rata division even though tracing was possible and suggesting that one regard such cases as “the product of error”).

103. Of course, in reality, this would be near impossible. Unfortunately, it is very difficult for investors to accurately trace the sums they originally invested and distinguish such sums from the rest of the money in the common pool.

104. This simple illustration demonstrates a particular tracing rule familiar as the “lowest intermediate balance rule.” See *supra* note 86 and, in particular, the reference to *In re JD Services, Inc.*, 284 B.R. 292 (Bankr. D. Utah 2002).

money. Thus, according to the pro rata mechanism, Investor *A* will have to share the money remaining in the fund equally with all other investors, even if it is clear that only her money remains in the common pool.¹⁰⁵ The probabilistic restitution regime rejects these dichotomous solutions, and offers instead a middle ground solution that assures each investor a remedy tailored not only to the size of her original contribution to the fund, but also to the probability that this original contribution can still be traced into the fund.¹⁰⁶ Probabilistic restitution is preferable because it offers a solution that takes seriously the investors' property rights and their proprietary claims in the common pool fund while also taking into account the unique situation of their being multiple victims of the same fraud. This element is missing in the pro rata method, which bases the idea of proportionality on the original investments' relative sizes and gives no weight to the investors' proprietary claims or to considerations of causation.¹⁰⁷

Finally, note that probabilistic restitution is justified in *Example 3* even though this example does not feature a situation involving a loss of chance. The organizer of a Ponzi scheme steals an actual sum of money from investors, and it is this sum of money (rather than a chance to win it) that investors are seeking to retake. Thus, probabilistic restitution is relevant here not because the different claimants were deprived of a chance to win, but simply because it is unclear who is the true owner of the assets that remained in the wrongdoer's possession. Thereby, this Part demonstrates a broader applicability of probabilistic restitution, which is apparently relevant also beyond the loss of chance cases described in Parts I and II.

CONCLUSION

This Article is the first to identify a new paradigm within the law of restitution, the paradigm of multiple restitution claimants. We show that cases of this type present a problem of causal ambiguity, parallel to the familiar problem of causal ambiguity often created in cases involving multiple tort defendants. The current Article is the first to point out the symmetry between multiple-claimant restitution cases and multiple-defendant tort cases, and to offer a systematic legal answer to the difficulties of causal ambiguity related to restitutionary cases of this type.

We advocate a regime of probabilistic restitution for these cases and demonstrate its advantages over the existing legal arrangements. Such legal arrangements fail to identify the problem of causal ambiguity and therefore generate

105. See *supra* note 102 and accompanying text.

106. As long as the \$1M remains in the common pool fund, the investors can be perceived as responsible towards one another to return the money that they (jointly) hold and that does not belong to them. The sums of recovery resulting from the probabilistic solution do not express the causal connection between a particular investor's right in that sum of recovery and another particular investor who holds that sum not duly hers. See Weinrib, *supra* note 48, at 151–52 (explaining that the doctrine of market share liability reflects distributive justice rather than corrective justice because it aims “to distribute the manufacturers’ liabilities according to the risk of injury that each created to the public at large, rather than to link any manufacturers’ liability to any particular injury”).

107. *Supra* note 102 and accompanying text.

inefficient and unjust results. Thus, some current restitutionary rules tend to prefer one claimant over all others, often with insufficient justification. We term these arrangements “loser takes all” rules and demonstrate their disadvantages. We then contrast the “loser takes all” rules with another type of existing restitutionary regime, which tends to deny restitution when plaintiffs are unable to prove their claim beyond the traditional preponderance of the evidence threshold. The Article shows that this legal response is also inappropriate, as it unjustly denies a remedy and allows wrongdoers to keep ill-gotten gains. Finally, we show that the proposed regime of probabilistic restitution avoids these pitfalls, as it allows granting restitution (as opposed to denying it) without randomly preferring one claimant at the expense of all others. Instead, this regime allows partial restitutionary remedies tailored to the ability of each plaintiff to prove her claim. Probabilistic restitution thus provides just compensation to claimants and also appropriately deters wrongdoers by stripping them of all ill-gotten gains.

Lastly, we are aware that the proposed regime of probabilistic restitution may come with a price. For instance, in *Example 1* (featuring the tennis tournament), it is not clear if *any* player who competed against Player *A*, while she was using performance-enhancing drugs, should be granted some amount of restitution. Should courts grant restitution even to contestants whose chances of winning are, say, one percent or less? If so, a shift to probabilistic restitution is not only expected to immeasurably increase litigation costs¹⁰⁸ but might also raise practical difficulties of estimation.¹⁰⁹

Such difficulties, however, should and can be addressed, as is now the practice in tort cases, where courts and scholars have long recognized the need to assess damages in probabilistic terms to affront causal uncertainty.¹¹⁰ These difficulties

108. To the extent that the law takes into account efficiency considerations of reducing cost, it must consider also the costs of applying the legal regime. See GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 26–31 (1970) (referring to the administrative costs of accident law as the “tertiary costs” of accident, as opposed to the costs of severity and frequency of accidents referred to as “primary costs;” these observations can be generally applied to all areas of private law).

109. For example, what tools should courts use to estimate that a certain contestant had a 0.5% chance of winning? Could such an inference distinguish between 0.5% and 0.8% chances of winning?

110. See, e.g., Howard M. Erichson & Benjamin C. Zipursky, *Consent Versus Closure*, 96 CORNELL L. REV. 265, 276–79 (2001) (reviewing the litigation concerning Merck’s painkiller Vioxx, in which claimants faced factual difficulties preventing them from preponderantly proving that Vioxx caused their heart attacks and strokes); Saul Levmore, *Probabilistic Recoveries, Restitution, and Recurring Wrongs*, 19 J. LEGAL STUD. 691, 693–96 (1990) (suggesting use of a remedy based on probabilistic recovery to contend with the problem of “recurring misses,” in which there is constant bias due to which the but-for result constantly leads to the conclusion that there is a more than a zero percent but never more than a fifty percent chance that a defendant in similar circumstances is the cause of an injury); Ariel Porat & Eric Posner, *Aggregation and Law*, 122 YALE L.J. 2 (2012) (suggesting that liability be determined based on an aggregation of the established probability of the defendant’s fault and the established probability of the causal link between this fault and the plaintiff’s injury); Rizzo & Arnold, *supra* note 8 (discussing the option of resolving cases of joint tortfeasors by using probabilistic-based-damages).

should not serve as an excuse to keep the current solutions in place, as those not only produce unjust results but also lead to under-deterrence when allowing wrongdoers to keep their ill-gotten gains. Simple rules of thumb might be used to resolve the practical difficulties presented by probabilistic restitution. For instance, in cases that require statistical estimation due to a multiple-stage system, as demonstrated in *Example 1*, we could allow a claim in restitution only to candidates with significant chances of winning, for instance, above thirty percent. Similarly, in flawed tender cases such as *Iconco*,¹¹¹ the suggested probabilistic regime can be restricted to circumstances of equal chances of winning (when in retrospect, it can be proven that two or more bidders were possible next-in-line winners). These sorts of adjustments to the proposed probabilistic regime might lead to results that somewhat diverge from the ideal outcome; however, as demonstrated throughout the Article, these results will still be generally preferable to the existing regime.

111. 622 F.2d 1291 (8th Cir. 1980); see *supra* notes 54–56 and accompanying text.