Negative Liability

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Abstract

Negative and positive externalities pose symmetrical problems to social welfare. The law internalizes negative externalities by providing general tort liability rules. According to such rules, those who cause harm to others should pay compensation. In theory, in the presence of positive externalities, negative liability should apply: those who produce benefits should be paid a compensatory award by the gainers. Nevertheless, the legal system does not display such general negative liability rules. Rather, it tackles the problem of internalizing positive externalities by implementing a set of different and often indirect solutions. My explanation for this asymmetry in legal remedies rests on three features of a negative liability regime, relating to intent, incentives and evidence. These features explain the scope and design of restitution rules, liability for nonfeasance and other mechanisms for the internalization of positive externalities.

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Nemo beneficia in calendario scribit[1]

Seneca, *De Beneficiis* (I, 2)

It is a fact of common experience that a person may benefit from the effort and expenditure of others without incurring an obligation to pay.

Restatement (Third) of Restitution and Unjust Enrichment (2000, § 2)

1 Introduction

The notion of negative liability can be best introduced by comparison with the ordinary concept of (positive) tort liability. In the spirit of Calabresi (1970), tort liability may be regarded as a way to internalize negative externalities,[2] in situations in which high transaction costs prevent parties from finding a contractual solution. From an economist's perspective, the problem of internalizing negative externalities is perfectly symmetrical to and as essential as the problem of internalizing positive externalities. Both types of externalities bear on social welfare and lead to symmetrical departures from the socially optimal use of resources: if not internalized, negative externalities result in oversupply of some dangerous activities, while positive externalities result in undersupply of some beneficial ones.

It may be a matter of empirical investigation to inquire whether in reality one type of externality occurs more frequently or is more harmful than the other, but on the theoretical level, there is no *a priori* reason to believe that society should only take care of one and disregard the other. From the perspective of Coase (1960), when transaction costs are high, society fails to internalize both the positive and the negative external effects of its members' actions through contracts, making legal intervention necessary.

All western legal systems provide for positive (tort) liability—the duty to pay for harm inflicted on others—as a general and systematic way to deal with the negative-externality problem. However, we do not find a comparably general system, which we may call *negative liability*[3]—the

[1] "Nobody makes an entry of his good deeds in his daybook".

[2] See Sidgwick (1901, pp. 401-423) and Pigou (1912, pp. 148-171; 1932, pp. 172-203) for early analyses of the externality problem.

[3] This notion is also adopted in Parisi (2003). Wittman (1984) alternatively refers to this rule as reverse liability or as restitution for benefit. I prefer to use the notion of negative liability to stress the nature of the rule (a liability rule in the traditional sense) and to distinguish it from the quasi-contractual approach adopted by Calabresi and Melamed (1972),

right to collect for benefit conferred to others—dealing with the positive-externality problem. For example, one can be held liable for polluting, but cannot generally claim compensation for cleaning up an otherwise polluted area;[4] likewise, one can be held liable for libel or slander, but cannot recover if one's statements have beneficial effects. In general, positive-externality problems are commonly regarded as a justification for public goods provision, subsidies or regulation, rather than for liability. Only in specific cases does the law deal with positive externalities through a liability rule; however, it does so by means of a diverse set of case-specific rather than general rules. This apparent anomaly calls for an explanation, which I will attempt to provide in this article. More specifically, I will tackle a number of puzzles concerning the internalization of positive externalities:[5] (1) intentional injurers must pay damages in tort, while intentional benefactors have no claim in restitution; (2) restitution is measured by the cost to the benefactor, while damages are measured by the harm to the victim; (3) there is restitution for some benefits and not for others; (4) liability for nonfeasance is rarer than liability for misfeasance; and (5) many positive externalities are not internalized through the liability system but rather by other means.

The latest word on these issues is that they are not satisfactorily resolved by existing economic analyses (Hershovitz, 2006).[6] I will try to overcome this argument by advancing a new, more general economic approach to the problem. Before addressing these questions, the notion that

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which is traditionally referred to as reverse liability and consists of a compensatory payment by the victim to a polluter (injurer) equal to the polluter's cost of precaution in exchange for the promise not to pollute. In Wittman (1984), reverse liability refers instead to a general situation in which the gainer compensates the benefactor, which does not perfectly overlap with the specific case discussed in Calabresi and Melamed (1972). The question of whether compensation should be based on costs or benefits is also discussed in Wittman (1985), with reference to information asymmetries, and Polinsky and Shavell (1994), with reference to errors. My analysis differs from these contributions, since I claim that positive and negative liability are asymmetric means of internalizing externalities irrespective of a lack of information or legal errors. For an account of the various explanations of reward versus punishment, see Wittman (1984, p. 60-61).

[4] "A owns a flooded limestone quarry. Draining A's quarry will also drain a neighboring quarry owned by B. A proposes to B that they share the cost of draining the quarries, but B refuses. A drains both quarries, thereby increasing the value of B's property. B is not liable to A in restitution." Restatement (2000, § 2, illustration 5).

[5] Posner (2003, p. 191) observes that "the common law is much more chary about compensating people for rendering external benefits than it is about making them pay for the external costs they impose". He justifies this conservative pose with reference to the administrative costs of the system, implicitly arguing that compensation for benefits would occur more frequently than it does for harm. Wittman (1998) also notes that restitution (i.e. negative liability) cases are rare if compared to tort liability cases, even though the rewarding of external benefits is necessary for the production of optimal incentives. In contrast to my analysis, he focuses mainly on the long-term effects in explaining why rewards are less likely to be observed than punishments. Levmore (1985) explains restitution by reference to four economic principles: valuation difficulties, the search for the better bargainer, the problem of wealth dependency, and market encouragement. He does not address the issue of how to measure restitution. Moreover, his focus is on explaining restitution, while mine is on explaining how the law deals with positive externalities. These two perspectives are only partially overlapping as explained in section 2.

[6] The author counters the arguments brought forth by Levmore (1985) and argues that there is a moral distinction between harm and benefit. Such a moral distinction is legally relevant and explains why tort is "more robust" than restitution. See further note 63 below for an example of a case that cannot be explained by the traditional economic approach but fits the

general negative liability does not exist needs to be qualified, a task I will undertake in section 2. In section 3, I will initiate the analysis from a very theoretical level. I will present a model illustrating how a hypothetical system of negative liability—constructed as the mirror image of positive (tort) liability—would function in theory, both when parties move simultaneously and when they move sequentially. In doing so, I will show that there are three main differences between the existing system of positive (tort) liability—dealing with negative externalities—and the hypothetical system of negative liability—dealing with positive externalities:

Intentional versus unintentional externalities. Tort liability applies both to intentional and to unintentional negative externalities. In the former case, liability is aimed at internalizing external effects; in the latter, liability is instead aimed at discouraging the voluntary bypassing of the market. In contrast, negative liability should only apply to unintentional externalities. The reason is that allowing a party to collect for benefits voluntarily conferred would encourage, rather than discourage, the voluntarily bypassing of the market. Thus, the domain of application of negative liability is more limited than that of positive (tort) liability.

Incentives for care versus activity levels. Within this more limited domain, only including unintentional externalities, a liability system faces the problem of controlling both the parties' care—which is verifiable before the court—and their activity level—which is not verifiable before the court.[7] In positive (tort) liability, the parties' care can be controlled by means of negligence standards and the parties' levels of activity can in turn be influenced by how the residual loss—the loss that occurs when both parties are nonnegligent—is shared.[8] In contrast, in a system of negative liability, the control of the parties' care cannot be disentangled from the control of their levels of activity, because the way in which the gain is shared affects the parties' decisions whether to comply with the negligence standards. As a result, negative liability rules always require a certain sharing of the gain, which limits the possibility to control activity levels and makes liability rules more complex to draft.

Evidence concerning positive versus negative externalities. The plaintiff in negative liability claims is in a disadvantaged position with respect to the production of evidence, if compared to tort claims. This is due to the fact that a tort plaintiff—the party who suffered harm—is close to the

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theory proposed in this paper.

[7] Shavell (1980). See also Dari-Mattiacci (2005).

[8] Note that this is different from comparative negligence, which shares the loss when both parties are negligent.

externality. In contrast, a negative liability plaintiff-benefactor is far from the externality, because the benefit accrues to the defendant-gainer. Most likely, while information on a negative externality rests with the plaintiff in a positive (tort) liability claim; information on a positive externality rests with the defendant in a negative liability claim. *Ceteris paribus*, providing evidence is tougher for a negative liability plaintiff than for a tort plaintiff.

In section 4, I will analyze the design and scope of restitution rules, tort liability for misfeasance and other legal devices for the internalization of positive externalities. The three asymmetries just discussed will be used to disentangle the puzzles proposed above. In particular, intent is discussed at a theoretical level in section 3.1 and then the findings of this section are applied and discussed in section 4.1.1. An analogous correspondence exists between sections 3.2 and 4.1.2, concerning incentives, and sections 3.3 and 4.1.3, regarding evidence. Section 4.2 discusses tort—in particular nonfeasance *versus* misfeasance—intellectual property and government intervention. In section 5, I will offer some concluding remarks.

2 Negative liability *versus* restitution

Given the symmetry in the externality problem, one could expect law books and especially law and economics textbooks to discuss two symmetrical liability systems: one, dealing with the internalization of negative externalities; and another concerned with positive externalities. However, even a summary examination of codes and textbooks leads to the puzzling discovery that, while the former exists (tort), the latter is missing. Restitution[9]—including doctrines of unjust (or unjustified) enrichment, quasi contract and constructive trust—is the most likely candidate for the role of counterpart of the law of tort, but fails to meet expectations. “The most obvious comment about the American law of restitution is that it lacks any kind of system” (Dawson, 1951, p. 111-112).[10] The literature on restitution is dwarfed by writing dealing with tort. In fact, starting in the

[9] Palmer (1978 and 1984); Levmore (1985 and 1998); Dobbs (1993, ch. 4). Wonnell (1996 and 2000) has argued for a disunited view of the unjust enrichment principle, as a set of different legal rules without a unitary underlying logic. Bouckaert and De Geest (1995 and 1998) have argued in favor of the identification of a unitary economic principle behind the different practical applications of the law of restitution: they remark that quasi contracts are the equivalent of liability rules in the terminology of Calabresi and Melamed (1972). My approach is different as I ask why a unitary principle is embedded in a diverse set of rules in the case of positive externalities versus a uniform set of rules (the law of torts) in the case of negative externalities. Elkin-Koren and Salzberger (2000) focus on cases in which the gain is generated by the gainer but attributed by the court to the benefactor. See also Posner (2003, p. 191) and Wittman (1998) cited in note 5.

[10] Levmore (1985, pp. 65, 68) notices that “the law of nonbargained benefits is most easily described with a general rule

1960s, the subject has become a rarity in American law schools, where restitution is now studied in connection with other disciplines rather than as a separate, unitary subject.[11] The American Law institute considers the Restatement of Restitution as the least known and the least understood of its Restatements, lamenting that "a substantial portion of the American bench and bar today could not comfortably explain what 'the law of restitution' is or how it works."[12] Moreover, while tort liability provides a systematic apparatus almost entirely devoted to the internalization of negative externalities, restitution deals with three different problems: negative externalities, pure transfers and positive externalities.

Restitution for negative externalities. Part of the law of restitution aims at reinforcing the deterrent effect of tort law, criminal law and various types of statutes and regulations by providing a mechanism for the disgorgement of illegal gains. As a result, these rules provide incentives for the internalization of negative rather than positive externalities. This goal is advanced by tracing or "accounting for profits" rules, stating that one who wrongfully appropriates another's resources and subsequently invests in them or otherwise employs them in a profitable activity is liable for both the value of the resources and the gain that he has extracted. Accordingly, restitution is available for victims of fraud, duress or undue influence,[13] trespass, conversion, misappropriation of financial assets, interference with intellectual property and similar rights, violation of a fiduciary duty or other legally protected interests,[14] and deliberate breach of contract.[15] Restitution also applies in cases of lethal (the Slayer Rule) and nonlethal interference with donative transfers.[16] In these cases, restitution and tort liability have the same purpose of discouraging the production of negative externalities.[17]

The case of illegal contracts is more complex because it tackles a double-sided problem: both parties need to be discouraged from entering into an illegal contract. Restitution is denied under the doctrine of *pari delicto* or unclean hands,[18] arguably because the law refrains from protecting the

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and a long list of exceptions that seem on the verge of consuming the rule." However, he later argues that "although restitution is hardly the neatest of fields, it is also not the chaotic mass that it first appears to be."

[11] Epstein (1994, pp. 1369-1371). An examination of the courses offered by the top ten American law schools—which are actually eleven due to ties (US News & World Report, 2007)—reveals that only the University of Michigan Law School lists a seminar—not a course—on restitution.

[12] Restatement (2000, Reporter's Introductory Memorandum). See also Rogers (2007).

[13] Restatement (2001, §§ 13-15).

[14] Restatement (2004, §§ 40-44).

[15] Restatement (2004, § 39).

[16] Restatement (2004, §§ 44-45). See Restatement (2005, §§ 47-48) for the three-party case.

[17] Levmore (1998, pp. 644-665); Bowles, Faure and Garoupa (2000). See also note 32 below.

[18] Restatement (2002, § 25, illustration 17).

interests of plaintiffs involved in illegal deals. However, restitution is allowed if the plaintiff carries no blame for the illegality. This solution provides the defendant with incentives to avoid illegal transactions. Restitution is also allowed if the plaintiff has only performed the legal part of his obligation, stopping short before committing the illegal act (doctrine of *locus poenitentiae*). This doctrine encourages repentance on the part of the plaintiff.[19] Be it allowed or denied, in all of these cases restitution serves the purpose of deterring negative externalities and not of inducing the production of positive externalities.

Restitution for pure transfers. Another important subset of restitution rules deals with pure transfers originated by mistake,[20] made on the basis of an obligation that does not exist[21] or that no longer exists (an invalid or avoided contract,[22] a reversed or avoided judgment or an illegally collected tax[23]), consisting of the discharge of another's obligation, or made by a transferor lacking capacity or authority.[24] In these cases, the parties' interaction results in no externality, but rather in a simple transfer of resources from one to the other, which cannot be undone under tort or contract law. Restitution prevents the creation of economic rents associated with such transfers, which in turn might produce perverse incentives if left unchecked—for example, incentives to induce the other party in error.

Restitution for positive externalities. Finally, the remaining portion of the law of restitution deals with positive externalities. Only this part is relevant for the notion of negative liability developed in this article. Remarkably, the most general rule in this set of cases is that restitution should be denied for positive externalities: officious intermeddlers cannot generally recover for benefits conferred. This is perhaps the most striking difference with the law of tort, where the general principle is exactly the opposite: those who inflict harm on others must pay damages. A series of exceptions make it possible for benefactors to recover from gainers under some circumstances. These rules will be examined in some detail in section 4; here it suffices to notice that only a relatively small portion of the law of restitution actually deals with the internalization of

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[19] This is the case if the plaintiff was ignorant of the illegality, he was victim of fraud, duress or similar misconduct, he is a member of a class for whose protection the transaction was made illegal, the illegality is only collateral or incidental to the plaintiff's claim, or public policy considerations suggesting that restitution should be allowed. Dobbs (1993, pp. 68-72, 877-880).

[20] Restatement (2001, §§ 5, 9-13, and 2002, § 27). See Huber (1988) for an economic analysis of the law of restitution with special focus on mistaken transfers.

[21] Restatement (2001, §§ 6,19). See Restatement (2005, §§ 47-48) for the three-party case.

[22] Restatement (2004, §§ 31-36). In contrast, Restatement (2004, §§ 37-38) contains typical contract remedies.

[23] Restatement (2001, §§ 18-19).

[24] Restatement (2001, §§ 7, 16-17).

positive externalities and does so in an unsystematic way. Levmore (1985, p. 67) observes:

> "Restitution occupies the crucial ground between its much-studied neighbors, tort and contract. Restitution deals with nonbargained benefits; tort law with nonbargained harms; contract law with bargained benefits and harms. Whereas the law of torts regularly 'creates' bargains by assigning liability where the parties would have exacted payment if able to bargain, the law of contracts (and restitution) does not obviously intervene and create bargains among strangers who might be expected to wish for such agreements. The law of benefits is apparently not the counterpart of the law of harms".

Explaining this puzzle is the purpose of this article. Bell and Parchomovsky (2001) have recently lamented an analogous lacuna in takings. If the government is obliged to pay for seizure of private property (a taking), why should it not be allowed to collect a fee when its action results in an enhancement of the value of private property (a *giving*)? Not only do these authors regard the absence of jurisprudence in the domain of governmental givings as an unfortunate oversight, but they also argue that if it were to be implemented in a profitable fashion, there would be no obstacle to its juridical consistency.[25] Compensating for takings amounts to positive liability for harm, while compensating for givings is a form of negative liability for benefit. The nonexistence of a givings jurisprudence parallels and most likely derives from the absence of a general treatment of negative liability in the law. In this article, I treat these two puzzles as one and hence attempt to explain both of them using the same framework of analysis.

Before moving on, let us further note that the asymmetric features of legal remedies can be easily coupled with a similar asymmetric conceptualization in the economic literature. Most generally, market failures of the negative-externality type have traditionally been used as a reason for corrective taxes or positive (tort) liability.[26] In contrast, market failures of the positive-externality type have been mostly paired with public provision of goods and services or with subsidies, but not with the liability system. This asymmetric intellectual systematization is also reflected in the pedagogic pose of law and economics textbooks. While examples of negative externalities are commonly drawn from the set of cases that we believe should trigger liability

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[25] Bell and Parchomovsky (2001) indicate a number of examples of givings (e.g. "upzoning", relaxation of environmental standards, licensing) and argue that charging for givings would reduce interest-group politics, enhance the efficiency of governments and improve the fairness of the property system. The authors focus on the theoretical possibility of a givings jurisprudence. In this article, I instead ask the further, related question of why negative liability, of which givings are an instance, is a nonexistent branch of law and why, when it exists, it is so different from its "celebrated twin" (takings and, more in general, positive tort liability). See also Hupp (1979) assessing the need for mechanisms to internalize positive externalities in land use.

[26] According to Mishan (1971, p. 1), the interest in negative externalities increased even further during the postwar period, nourished by the urgency of problems created by environmental spillovers. See also Coase (1960, p. 28-44).

(pollution, car accidents, nuisance, etc.), the notion of positive externality seems to be somewhat more elusive and the most common examples may appear sophisticated (painting one's house is a positive externality for one's neighbors) or a myth (one's bees pollinating the neighbor's apple trees).[27] Better examples of positive externalities (national defense, education, immunization against infectious diseases, infrastructures, innovation, etc.) are labeled as public goods and are not discussed in connection with liability.[28]

3 A positive theory of negative liability

In this section, I will employ the formal tools developed in the law and economics literature for the analysis of (positive) tort liability in order to describe a hypothetical system of negative liability and oversee its theoretical functioning. As I will show, there are at least three important asymmetries between positive and negative liability. These asymmetries will be used in section 4 to analyze legal rules concerning positive externalities.

3.1 Intentional *versus* unintentional externalities

The first asymmetry between positive and negative liability emerges when taking into account the difference between intentional and unintentional production of external effects. Some preliminary considerations on how law and economics scholars have conceptualized such a distinction are in order. Since Calabresi and Melamed (1972), the position that bypassing the market—where the term "market" simply stands for a mutually agreed-upon contract—is undesirable because it generates a waste of administrative costs and because it possibly leads to open-ended (re)negotiation has gained widespread consensus.[29] From this observation, it follows that parties

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[27] *New York Times*, Wednesday 9th June, 2004, "Hives for Hire Stop Only to Pollinate" by Norman Vanamee, "Each spring, the Hackenburgs and a dozen or so other East Coast beekeepers embark on a six-month journey from Florida to Maine. Along the way they stop in orange groves in Florida, apple orchards (and squash and pumpkin fields) in Pennsylvania, blueberry barrens in Maine, cranberry bogs in Massachusetts, (clover field in upstate New York) and other places favored by bees. Farmers pay the beekeepers to place hives in blossoming fruit and vegetable fields. The bees pollinate the plants (greatly improving crop yields), and the beekeepers keep the honey made from the collected nectar. Out West, a similar migration is made by beekeepers who drive through Texas, the Dakotas, California and Oregon […] The migratory pollinating business started about 50 years ago, when improved roads and increased demand made it practical to truck bees long distances." The bees' example was introduced by Meade (1952) and criticized by Cheung (1973) for being far from reality. Coase (1974) brought a similar criticism to the also very common lighthouse example.

[28] More examples will be provided in section 4.

[29] See Shavell (1987, p. 263) on the former point and Kaplow and Shavell (1996, p. 765) on the latter (the authors refer to this problem as one of multiple potential takers of a single good).

should be discouraged from using the liability system when transaction costs do not impede voluntary contracts. The notion of high *versus* low transaction costs can then be employed to define what behavior counts as intentional. Under this interpretation, intent does not refer to the behavior itself but rather to the bypassing of the market. Therefore, the question whether a party has intentionally generated an externality is replaced by the question whether that party has intentionally bypassed the market or, which is the same for our purposes, whether transaction costs were low or high. For instance, a doctor who attends an unconscious victim of a car accident intentionally produces a (positive) externality but does not intentionally bypass the market; in fact, a contract was prevented by visibly high transaction costs and, hence, the use of the liability system is justified.[30] From this analytical framework, it follows that the function of the law changes depending on the circumstances. When transaction costs are high, the law should internalize externalities by allowing—or even inducing—the parties to bypass the market. Vis-à-vis low transaction costs, the law should discourage bypassing the market.

We will now examine how the law can discourage the voluntary bypassing of the market by injurers and benefactors;[31] let us start from the former. In order to discourage reliance on the liability system,—and induce parties to contract with each other—intentional torts are often punished more harshly than those that are unintentional; thereby, a criminal or otherwise punitive sanction,—a "kicker" in Calabresi and Melamed (1972 p. 1226)—such as punitive damages, is often added to tort liability, as the gain to the injurer could be larger than the loss to the victim.[32] This additional sanction, due to the voluntary character of the externality, adds up to the total bill presented to the injurer.[33]

In contrast, in the case of positive externalities, reliance on the liability system when transaction costs are low is best discouraged by denying compensation to an intentional benefactor (an officious intermeddler). In this way, the potential benefactor is induced to negotiate with the

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[30] See Restatement (2002, II.3.1 Introductory Note).

[31] These considerations apply both to unilateral situations—where victims and gainers are passive—and bilateral ones. In the latter cases, victims and gainers also should be discouraged from voluntarily bypassing the market. A victim could in fact throw himself in harm's way or a gainer could willfully exploit the activity of the benefactor, as it happens when an artist uses someone else's copyrighted material or a producer employs patented components. Tort law deals with these cases by barring compensation through notions of consent and assumption of risk (Keeton, Dobbs, Keeton, and Owen, 1984, pp. 112 ff., 480 ff.). In the law of restitution, most of these cases fall under restitution for negative externalities—where the gainer willfully exploits the benefactor—examined in section 2.

[32] Haddock, McChesney and Spiegel (1990); Landes and Posner (1987, pp. 160-163); Arlen (2000, p. 696).

[33] Posner (1985) discusses the role of criminal law as a sanction system for market-bypassing activities. Hylton (1998) advocates a similar role for punitive damages; on punitive damages as a way to compensate for low apprehension rates see Polinsky and Shavell (1998).

gainer. Were the benefactor allowed to collect from the gainer, he would have incentives to bypass the market. Note that the same goal is reached in two opposite ways: in the negative-externality case, bypassing the market leads to a possibly even greater positive (tort) liability; instead, in the positive-externality case, bypassing the market requires that negative liability does not apply.

	Positive (tort) liability for negative externalities	Negative liability for positive externalities
Unintentional (low transaction costs: the goal is to internalize externalities)	Positive liability	Negative liability
Intentional (high transaction costs: the goal is to discourage the bypassing of the market)	Positive liability	No liability

Figure 1: Intentional versus unintentional production of externalities

As a result, positive (tort) liability applies to both the intentional and the unintentional production of negative externalities, because both the goal of avoiding the bypassing of the market (when transaction costs are low) and the goal of internalizing externalities (when transaction costs are high) are served by imposing liability on the injurer. Instead, negative liability should only apply to the unintentional production of positive externalities, as the intentional production of negative externalities is best discouraged by denying any form of compensation. These considerations suggest that the domain of application of negative liability is more limited than that of positive (tort) liability (see figure 1).

3.2 Incentives for care and activity levels: 'divide et impera' *versus* sharing strategies

A second asymmetry concerns the control of the parties' care and activity level. In contrast to the previous section, this section narrows down the focus of the analysis and concentrates on unintentional externalities. The economic literature has shown that any fault-based tort liability rule can induce both parties to take the optimal levels of care (Landes and Posner, 1980),[34] that the

[34] The authors show that a negligence rule with optimally set levels of due care induces both parties to take such optimal levels of care irrespective of whether only one party or both parties are subject to the negligence inquiry, whether the residual bearer is the victim (as for instance under simple negligence) or the injurer (as under strict liability with defense of contributory negligence), and whether the loss is shared between two negligent parties (as under comparative

sharing of the accident loss among negligent parties does not affect this result,[35] and that sharing the accident loss among nonnegligent parties does not affect this result and can be freely used to control the parties' levels of activity (Shavell, 1980).[36]

To illustrate this point, in the case of torts, the social objective is usually taken to be the minimization of the sum of the expected accident loss $l(x, y)$ and of the precaution expenditures x, for the injurer, and y, for the victim:

$$\min_{x,y}\left[l(x,y)+x+y\right] \tag{1}$$

Let us consider a general fault-based liability rule under which the due care standards are optimally set at the levels x^* and y^*, which minimize (1).[37] We can easily construct a very general framework that encompasses all of the known fault-based liability rules. Accordingly, let us consider the following rule: if only one party is negligent, that party pays the entire accident loss; if they are both negligent the loss is shared according to shares $0 \le \theta \le 1$ for the injurer and $1 - \theta$ for the victim; if they are both nonnegligent the residual loss is shared according to shares $0 \le \sigma \le 1$ and $1 - \sigma$, respectively.[38] The results mentioned above can be formally restated by saying that parties will take x^* and y^* for any θ and σ in a unique Nash equilibrium.[39]

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negligence) or there is no sharing (as under contributory negligence). This result has come to be known as the *allocative equivalence* or *efficiency equivalence theorem*. Brown (1973) partially anticipates this result but does not provide a satisfactory analysis of comparative negligence.

[35] The opinion of early writers about loss sharing among negligent parties was largely negative. Landes and Posner (1980) and Haddock and Curran (1985) prove instead that comparative negligence is as efficient as any other fault-based rule, and opened the debate on a different problem, that of explaining why, given this equivalence, the most common rule is comparative negligence. See Bar-Gill and Ben-Shahar (2003) for a review and an assessment of the literature.

[36] Shavell (1980) defines activity level as any precautionary measure that does not enter the determination of negligence. This author shows that no negligence rule is apt to provide both parties with incentives optimally to reduce the levels of their activity and that such levels depend on which party is the residual bearer of the accident loss when both are nonnegligent. This result is sometimes referred to as the *activity level theorem*.

[37] As usual, let $l > 0$, $l_x < 0$, $l_y < 0$, and let l be strictly convex; x and y are nonnegative and are assumed to be positive at the optimal levels.

[38] To illustrate, simple negligence—under which the injurer pays damages if he is negligent and the victim bears the loss otherwise—is characterized by $\theta = 1$ and $\sigma = 0$; comparative negligence–which is similar to simple negligence but the loss is shared if both parties are negligent—has $0 < \theta < 1$ and $\sigma = 0$; strict liability with defense of contributory negligence—under which the injurer bears the loss unless the victim is negligent—has $\theta = 0$ and $\sigma = 1$. All other ordinary liability rules can be brought under this umbrella. Strict rules, such as no liability and strict liability, are not considered because, since they only target one party, they always fail to provide incentives to the other party and, thus, they are not a good solution in the bilateral precaution setting analyzed here.

[39] The proof is as follows. Let us show that (*i*) (x^*, y^*) is a Nash equilibrium (NE) of the game, and that (*ii*) any level of $x < x^*$ and / or $y < y^*$ is not part of a NE. (*i*) If the victim takes y^* the injurer bears $\sigma l(x^*,y^*) + x^*$, if he takes x^*. If he takes $x < x^*$, he will be found negligent and bear $l(x,y^*) + x$, which is minimized by x^*, hence taking less than x^* is not advantageous. If the injurer takes $x > x^*$, his total cost increases, in fact $\sigma l(x,y^*) + x$ is clearly minimized by some $x < x^*$. The same applies to the victim. Thus, (x^*, y^*) is a NE. (*ii*) The former arguments also prove that the two cases in which one party is negligent and the other is nonnegligent—more generally $(x^*, y \ne y^*)$ and $(x \ne x^*, y^*)$—are not NE. Hence, we are left with only one extreme case to rule out: the situation in which both parties are negligent. For $(x < x^*, y < y^*)$ to be

It is further relevant to examine how the loss will be allocated in equilibrium. As both parties have incentives to take due care, the injurer will bear $\sigma l(x^*, y^*) + x^*$ and the victim will bear $(1 - \sigma)l(x^*, y^*) + y^*$. Because σ is irrelevant for the parties to comply with due care, this sharing can be adjusted according to the need to control the parties' activity levels (Shavell, 1980), as indicated in figure 2.

	Victim negligent	Victim nonnegligent
Injurer nonnegligent	Victim pays l	**The sharing σ affects activity levels**
Injurer negligent	Any sharing θ	Injurer pays l

Figure 2: Controlling care versus activity levels in positive (tort) liability

Let us now turn to the symmetrical case of positive externalities. To stay close to the standard model and adopt as general an approach as possible, let us consider two risk-neutral strangers, whom we will call the *benefactor* and the *gainer*.[40] They play the roles that the injurer and the victim, respectively, play in an accident context. In contrast to them, however, the benefactor and the gainer are involved in the joint production of an accidental gain (instead of a loss). As transaction costs are high by hypothesis, absent liability the gain is entirely earned by the gainer—just as the loss deriving from an accident falls entirely on the victim—and is thus considered a positive externality from the benefactor's perspective.

The gain depends on how much care the parties use in their activities. Let x now denote the benefactor's expenditure in care, and y denote that of the gainer. The expected gain g is a strictly concave function of x and y, with $g > 0$, $g_x > 0$ and $g_y > 0$. Note also that we are making no statement concerning whether the parties' care efforts are complements or substitutes.

The social objective is the maximization of the expected gain minus the parties' costs of care. Thus, the optimal levels of the parties' care x^* and y^* solve:

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a NE, the injurer must find it more convenient to be negligent than to be nonnegligent (given that the victim is also negligent), that is $\theta l(x, y) + x < x^*$; simultaneously, for the victim: $(1 - \theta)l(x, y) + y < y^*$. Summing them up we obtain $l(x, y) + x + y < x^* + y^*$, which cannot be true for $x < x^*$ and $y < y^*$, since x^* and y^* minimize the left-hand side by hypothesis. Therefore the case in which both parties are nonnegligent is the only NE of the game, irrespective of the values of θ and σ. This proof extends the original proof given by Landes and Posner (1980, note 51), which was restricted to $\sigma \in \{0; 1\}$.

[40] In legal texts the gainer is often referred to as the recipient or beneficiary.

(2) $$\max_{x,y}\left[g(x,y)-x-y\right]$$

Up to this point, we have simply reversed the standard economic model of accidents in order to describe a situation in which the parties' interaction leads to a gain instead of a loss. Next, we need to examine the functioning of negative liability, under which benefactors can recover from gainers. Assume that the gainer and the benefactor are subject to a general fault-based negative liability rule that is analogous to the liability rule implemented in accident contexts. The notion of negligence is defined in the same way as in tort: a party can be found negligent if he fails to comply with a certain standard of conduct. The negative liability rule is as follows: if only one party is negligent, the other party earns the entire gain; if they are both negligent the gain is shared according to shares $0 \leq \theta \leq 1$ for the benefactor and $1 - \theta$ for the gainer; if they are both nonnegligent the gain is shared according to shares $0 \leq \sigma \leq 1$ and $1 - \sigma$, respectively.

It is easy to see that parties will take x^* and y^* only for some values of σ, that is, only if the gain is shared in equilibrium. In fact, the benefactor and the gainer earn $\sigma g(x^*,y^*) - x^*$ and $(1 - \sigma)g(x^*,y^*) - y^*$, respectively, if both are nonnegligent.[41] The one who unilaterally deviates from this outcome earns no gain and bears no cost.[42] Thus, neither party will have an incentive to deviate and (x^*, y^*) is a Nash equilibrium of the game if and only if each of the parties receives a net share in the gain that is greater than zero. Consequently, the following two conditions must be simultaneously satisfied:

(3) $$\begin{cases}\sigma g(x^*,y^*) > x^* \\ (1-\sigma)g(x^*,y^*) > y^*\end{cases}$$

The sharing of the gain in equilibrium is a necessary condition for any fault-based negative liability rule to provide parties with socially optimal incentives.[43] Rearranging, it is possible to derive the maximum and the minimum values of σ that support a Nash Equilibrium in (x^*, y^*).

[41] If both are nonnegligent, there is no incentive to take more than x^*, since $\sigma g(x, y^*) - x$ is maximized by $x \leq x^*$. The same point can be symmetrically verified for y.

[42] The unilaterally negligent party earns no gain and bears his cost of precaution. Thus, once a party chooses to be negligent, it is optimal for him to take no care at all.

[43] It is easy to show that there always exists a value of σ such that the two conditions in (3) are satisfied. Summing them up, we obtain $g(x^*, y^*) > x^* + y^*$, which is an implicit condition for negative liability to be worth being implemented, as it states that the gain deriving from the parties' interaction overcomes its aggregate cost at the optimal level—where no other level of care can yield a higher net gain. If this were not true, inducing x^* and y^* would result in a social loss.

$$\sigma^{\min} < \sigma < \sigma^{\max}$$

$$(4) \qquad \textit{with} \qquad \sigma^{\min} = \frac{x^*}{g(x^*, y^*)}$$

$$\textit{and} \qquad \sigma^{\max} = 1 - \frac{y^*}{g(x^*, y^*)}$$

Note also that such a sharing does not guarantee that (x^*, y^*) is the unique Nash equilibrium. In fact, an outcome in which both parties are negligent could also be an equilibrium,[44] although a Kaldor-Hicks inferior one.

	Gainer negligent	Gainer nonnegligent
Benefactor nonnegligent	Benefactor earns g	**The sharing $\sigma^{\min} < \sigma < \sigma^{\max}$ affects activity levels**
Benefactor negligent	Any sharing θ	Gainer earns g

Figure 3: Controlling care versus activity levels in negative liability

This analysis shows that in the model of tort liability there is larger freedom in setting accident deterrence: the optimal levels of care can be attained irrespective of σ, a parameter that can thus be used to control the victim's activity level ($\sigma = 0$), the injurer's ($\sigma = 1$), or (partially) both ($0 < \sigma < 1$). In stark contrast, in the model of negative liability, the sharing is crucial for the parties' levels of care and has to be set within a range, as summarized in figure 3. Hence, the policymaker enjoys a lesser degree of freedom in relation to the control of activity levels. This result implies that, in negative liability, care incentives are intertwined with and cannot be easily disentangled from activity level incentives.

To understand the logic of this asymmetry it is convenient to interpret the two liability systems in terms of carrots *versus* sticks.[45] Tort liability provides incentives through the use of a stick—the prospect to pay damages. Consider, for example, simple negligence. The injurer will pay damages unless he takes due care. Since it is optimal for him to take due care, he will do so. In turn, since the injurer pays no damages, the victim faces the same stick and is also induced to take optimal

[44] In an equilibrium in which both parties are negligent, their levels of care ($x^\wedge$, $y^\wedge$) satisfy $\theta g_x = 1$ and $(1 - \theta)g_y = 1$. Neither party has an incentive to deviate and take due care if two conditions are simultaneously satisfied: $\theta g(x^\wedge, y^\wedge) - x^\wedge > g(x^*, y^\wedge) - x^*$ for the benefactor and $(1 - \theta)g(x^\wedge, y^\wedge) - y^\wedge > g(x^\wedge, y^*) - y^*$ for the gainer. This is the case for example when $g(x^*, y^\wedge) - x^*$ and $g(x^\wedge, y^*) - y^*$ are negative, that is, when an increased effort by one party yields very small or no additional gain (the parties' care efforts are complements).

care. In fact, tort liability implements a *divide et impera* strategy: the first party is threatened with the stick, that party complies and the same stick, which is not used on the first party, can be employed to provide the second party with appropriate incentives to take care.

In contrast, negative liability implements an incentive device based on carrots—the prospect of earning the accidental gain—which is unsuitable for a *divide et impera* strategy, and hence requires sharing. To illustrate, imagine that the benefactor is promised a reward if he complies. If he does so, as it is desirable, the reward is paid and there is nothing left to incentivize the other party.

The difference between carrots and sticks is that the former need to be applied to complying parties, while the latter do not and, hence, can be used twice. This mechanism allows (positive) tort liability to give incentives to two parties by using a single punishment (damages), without the need of sharing. In negative liability, instead, the reward necessarily needs to be shared, and each share needs to be at least as large as the party's compliance cost. The need to share the gain under negative liability hinders the possibility to freely control the parties' activity levels, which depends upon the same sharing. As a result, negative liability policies enjoy a lesser degree of freedom than (positive) tort liability.

3.2.1 Simultaneous *versus* sequential externalities

The model presented above deals with parties who interact in a simultaneous fashion. When parties move sequentially, and the second mover observes the move that the first has made,[46] the results provided above need to be reexamined. Straightforward backward induction can be used to show that the equilibrium behavior of the parties does not change when allowing for sequential moves in a positive (tort) liability model. Thus, compliance with due care is also the unique equilibrium when parties move sequentially.[47]

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[45] See Dari-Mattiacci and De Geest (2007).

[46] If parties move sequentially without observing each other's moves we are back to the simultaneous-move model.

[47] Assume that the injurer moves first and re-label otherwise. The analysis of the simultaneous case shows that if the injurer takes x^*, the victim's best reaction is to take y^*; thus, the injurer bears $\sigma l(x^*,y^*) + x^*$ if he is nonnegligent. If the injurer takes $x < x^*$, there are two possibilities. First, the victim will take y^* if $(1 - \theta)l(x, y) + y \geq y^*$. In this case, it is never optimal for the injurer to be negligent, because unilateral negligence costs him $l(x,y^*) + x > \sigma l(x^*,y^*) + x^*$, given that x^* minimizes the left-hand side of the inequality. Turning now to the other possibility, the victim will take $y < y^*$ in response to the injurer's negligence if $(1 - \theta)l(x, y) + y < y^*$. In this case, it would be optimal for the injurer to be negligent if $\theta l(x, y) + x < \sigma l(x^*,y^*) + x^*$. Summing up the previous two conditions we obtain $l(x, y) + y + x < \sigma l(x^*,y^*) + x^* + y^*$, which cannot be satisfied because the left-hand side is minimized by (x^*,y^*). Thus, even in a sequential setting, it is never optimal for the first mover to be negligent and it is in turn never optimal for the second mover to be negligent. Wittman (1981), Shavell (1983) and Grady (1988) study optimal tort liability rules to cope with out-of-equilibrium

In a negative liability framework, matters are slightly more involved. If the first mover—say, the benefactor[48]—is nonnegligent, and the sharing σ is set within its maximum and minimum values, then we know from the previous analysis that the second mover—the gainer—has incentives to be nonnegligent. However, if the benefactor is negligent, the gainer could also find it optimal to be negligent.[49] If this is the case, the benefactor can choose between two possible outcomes—both parties negligent or both parties nonnegligent—by deciding whether to be negligent or nonnegligent and relying on the gainer's reaction to his choice. In turn, the benefactor's choice depends on his share in the gain in these two situations. If θ—his share when both parties are negligent—is large as compared to σ—his share when both are nonnegligent—he might find it advantageous to be negligent and capture a larger share of a smaller gain, rather than to be nonnegligent and be content with a small slice of the pie.[50] Note that he is doing so at the expense of the other party, as the nonnegligent outcome is Kaldor-Hicks superior to this outcome.

The study of sequential moves reemphasizes that the sharing of the gain is a crucial element of the optimal design of negative liability rules and is far more important than the sharing of the loss in positive (tort) liability. When parties move simultaneously, the parties take due care in equilibrium if the sharing when nonnegligent σ is set within a certain range. This setting, however, is not sufficient in sequential cases, as the first mover might find it advantageous to impose an inferior equilibrium on the second mover by being negligent. To overcome this possibility, the sharing when nonnegligent σ could be set close to the bound of the range that is more favorable to the first mover. That is, σ could be set close to its upper bound σ^{max} if the first mover is the benefactor and closer to its lower bound σ^{min} if the first mover is the gainer. This implies making the second mover recover only his care costs or slightly more. Alternatively, or in combination with this policy, the sharing of the gain when both parties are negligent θ could be adjusted. In this case, the party to be favored is the second mover. Thus, θ could be set close to 0—its lower bound—if the first mover is the benefactor, and close to 1—its upper bound—if the first mover is the gainer.

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situations, where it is important to give the second mover an incentive to make up for the first mover's lack of care.

[48] The roles can be reversed without prejudice to the results.

[49] See note 44 and accompanying text.

[50] The gainer is negligent when the benefactor is negligent if $(1-\theta)g(x^\wedge,y^\wedge) - y^\wedge > g(x^\wedge,y^*) - y^*$—where $(x^\wedge,y^\wedge)$ are defined as in note 44. The benefactor prefers the outcome in which both are negligent to the outcome in which both are nonnegligent if $\theta g(x^\wedge, y^\wedge) - x^\wedge > \sigma g(x^*, y^*) - x^*$, which is more easily satisfied for small σ and large θ. Consider for example the case in which σ is so small that $\sigma g(x^*, y^*) - x^*$ is close to zero.

3.3 Evidence concerning positive *versus* negative externalities

In order to adjudicate a claim, the court needs information indicating (1) that there was an externality; (2) that there is a connection between the externality and the parties' behavior; and, (3) under a fault-based rule, how the parties' behaviors compare to the legal standards. In positive (tort) liability, the plaintiff generally needs to prove damage, causation and the defendant's negligence. In the hypothetical negative liability system that we are describing, the plaintiff would have to prove the gain, some form of causation that links his behavior to the externality, and negligence on the part of the defendant.

In theory, the position of the plaintiff appears to be symmetrical under the two forms of liability considered. However, in reality, supporting a negative liability claim could be inherently more cumbersome than supporting a tort liability claim. In fact, in tort liability, the victim is both the party who has suffered the loss and the plaintiff of the tort suit. In other words, in tort claims, the plaintiff is close to the externality; in contrast, in negative liability claims, the plaintiff is removed from the externality. In fact, the gain falls on the gainer, but the plaintiff is the benefactor. Figure 4 illustrates this point. It is plausible that, *ceteris paribus*, providing evidence concerning an externality is, in general, easier for the party closer to the externality. This translates into a disadvantage for negative liability plaintiffs—who need to provide evidence for an externality that occurred far from them—as compared to tort liability plaintiffs—who need to provide evidence of an externality close to them. Overall, this divergence may undermine the confidence in negative liability as a way to internalize positive externalities.

	Plaintiff	Defendant
Negative externality	Victim (*E*)	Injurer
Positive externality	Benefactor	Gainer (*E*)

Figure 4: Externalities and roles of the parties—(*E*) *indicates where the externality falls*

Turning to causation, in tort liability the plaintiff needs to prove a link between his loss and the defendant's behavior; in contrast, in negative liability claims, the plaintiffs needs to prove that there is a causal link between his behavior and the defendant's gain. The causation requirements seem rather symmetric. In both cases, one end of the causal link—either the behavior or the externality—is close to the plaintiff while the other is far from him. In the case of negligence, the plaintiff would generally be required to prove that the defendant was negligent and may occasionally be asked to show that he was not negligent. However, these requirements are the same under both systems.

Opportunely crafted evidence rules might, in fact, mitigate the asymmetry in proving the externality. However, there are two reasons to believe that evidence rules will not be able to solve the problem completely. First, an inversion of the burden of proof generally concerns fault, and it is difficult to envisage a liability rule in which the plaintiff would not have to prove that there has been an externality. Even so, in many cases, the plaintiff might lack information about the existence of positive external effects of his activities and on the identity of the gainers. These shortcomings will clearly not be remedied by shifting the burden of proof. An inspection of torts concerning situations in which the harm is latent or the injurer is unknown shows that these issues seriously undermine the functioning of liability.

Second, even if the evidence rules could be adjusted to make it easier for the plaintiff to support his claim, this should not be considered a valid counterargument. On the theoretical level, the plaintiff's remoteness from the externality translates into a comparative disadvantage that operates *ceteris paribus*. This means that any pro-plaintiff improvement of the negative liability rule could be replicated in a positive (tort) liability system, leaving the comparative disadvantage unaltered.

4 Negative liability in the law

The legal system deals with positive and negative externalities in markedly different ways. In the previous sections, I have shown that, although positive and negative externalities cause symmetrical reductions in social welfare, positive and negative liability exhibit relevant asymmetries in three respects, concerning intent, incentives and evidence. The legal framework currently governing the internalization of positive externalities can hence be examined within this framework, seeking justifications for the design of existing rules granting compensation and for relevant exclusions. This section has two purposes. One purpose is to provide an explanation for the design of those legal rules that are part of the law of restitution and deal with positive externalities. The other purpose of this section is to show that some instances of positive externalities are dealt within ordinary tort liability or other legal institutions, and to provide an explanation.

4.1 The internalization of positive externalities in the law of restitution

In section 2, we have emphasized that the law of restitution can be subdivided into three parts, dealing with negative externalities, pure transfers and positive externalities, respectively. In this section, we will examine the latter portion of the law of restitution, which is the only one qualifying as a negative liability regime. This part of the law of restitution, however, deals with positive externalities in a way that is very different from the broad scope of tort liability in the mirror field of negative externalities. "In reality, the law of restitution is very far from imposing liability for every instance of what might plausibly be called unjust enrichment [severely limiting the applicability of the principle that a] person who is unjustly enriched at the expense of another is liable in restitution to the other" (Restatement 2000, § 1). Exclusions and inclusions will be examined through the lens of the analysis made in the previous sections.[51]

4.1.1 Intentionally conferred benefits

One of the principles of the law of restitution is that "There is no liability in restitution in respect of a benefit intentionally conferred by the claimant on the recipient, unless the circumstances of the transaction are such as to excuse the claimant from the necessity" (Restatement, 2000, § 2(4)). Therefore, for instance, an individual who is qualified as a firefighter/paramedic but is hired by a municipality simply as a firefighter has no claim in restitution against the municipality for performing paramedic services. In contrast, a doctor who treats a patient who is unconscious or lacks capacity can claim restitution from the patient.[52] Arguably, both the firefighter/paramedic and the doctor intentionally confer a benefit on another; yet, the law of restitution reaches different solutions with respect to the compensation for such benefits.

In the light of the distinction drawn in section 3.1, this discrepant treatment can be explained by re-qualifying the notion of intent. What counts is not intent in acting (which both have), but intent in bypassing the market (which the firefighter/paramedic has, but the doctor lacks). The firefighter/paramedic and the municipality could have and, in fact, did negotiate the firefighter/paramedic duties. Transaction costs were low in this context and, as we have argued above, the function of the law is not to internalize externalities but to channel such externalities into contracts by discouraging the bypassing of the market. By denying compensation for any

[51] The material is organized in thematic clusters and does not necessarily follow the same order as in the Restatement (2000-2007).

benefit conferred in excess of what was explicitly agreed upon, the law of restitution provides incentives for the parties to negotiate such benefits.

The doctor case is different because the fact that the patient is unconscious makes transaction costs clearly high and prevents voluntary agreements. When externalities cannot be internalized through contracts, the function of the law is to provide for such internalization. These principles apply to the protection of another's life, health or property under circumstances of emergency.[53] The protection of another's property includes the protection from liabilities that would have arisen under tort law or stemmed from contractual or other duties.[54] Accordingly, paying the rent of a temporarily hospitalized person to avoid eviction gives rise to a claim in restitution as it generates a positive externality (the avoided eviction) that could not be internalized through a contract due to high transaction costs (the hospitalization).[55]

This demarcation between high and low transaction costs seems to blur when examining claims in which the benefactor acts in self-interest.[56] For example, if one, while improving his land, also improves an adjoining parcel, there is no claim in restitution. However, there is a claim in restitution if the owner of the adjoining parcel was obliged to make the improvement by a statute or a contract.[57] What distinguishes these cases from emergency situations is that transaction costs are high, not because parties cannot communicate with each other, but rather because they interact in a bilateral-monopoly situation, in which one party can hold-up the other. The line between low and high transaction costs, however, is much thinner than in emergency cases, in that it is more difficult to establish *ex post* whether the cause for the bargaining failure is to be found in high transaction costs or in other reasons. For instance, the gainer might have refused a deal simply because it was not profitable for him. To obviate this problem, the law restricts restitution to those claims in which the gainer's interest in the deal is so unambiguous that one can reasonably infer that the deal failed because of the high transaction costs; that is, when the benefit is monetary. For example, a lawyer might be able to collect a fee from a nonclient beneficiary of his services if the latter received a

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[52] Restatement (2000, § 2, illustration 2) and Restatement (2002, § 20, illustrations 1-5), respectively.
[53] Restatement (2002, §§ 20-21). Maritime salvage is regulated by the law of Admiralty in a similar way.
[54] Restatement (2002, § 22).
[55] Restatement (2002, § 22, illustration 3). Note that the intentional payment of another's debt is different from the mistaken payment of another's debt. The former triggers compensation in so far as it generates positive externalities, the latter instead is a pure transfer. See section 2 above.
[56] Restatement (2002, § 23).
[57] Restatement (2002, § 23, illustrations 1-7).

money benefit, but not if he receives a nonmoney benefit.[58]

This general principle becomes even clearer when some apparent exceptions are considered. A nonmoney improvement might lead to restitution if the problem of valuing the gainer's interest in the deal—and thereby inferring whether transaction costs where high or low—can be bypassed. In the case of the improvement of an adjoining parcel illustrated above, the presence of a contractual or statutory obligation makes it possible to quantify the nonmoney improvement in precise monetary terms and provides a clear indication that the deal must have failed as a result of high transaction costs; hence, the benefactor has a claim in restitution.[59] Absent such an obligation, the gainer's interest cannot be easily quantified and a claim in restitution is generally barred. Likewise, if one of two cotenants makes improvements on the property, he has no claim in restitution to recover the costs expended. However, if the property is subsequently divided, he can recover in kind, by being awarded the portion of the property where the improvements have been made, or, if the property is sold, he can be awarded a larger share in the price.[60] Following a similar logic, improvements made on a common access road by one of two owners of adjoining lots do not lead to a claim in restitution, while necessary repairs do.[61]

Arguably, the law of restitution excludes claims in which the gainer's interest in the failed deal cannot be unambiguously established, and hence it is not innocuous to infer that the deal failed because transaction costs were high. Within these boundaries, the law of restitution allows specific claims by a benefactor who generates external benefits while protecting his property, performing a joint (indemnity and contribution) or even an independent obligation (equitable subrogation), living as an unmarried cohabitant, performing a contract with a third person, or advancing a common interest (common fund).[62]

Concluding, when transaction costs are low—or, more precisely, when it is not clear that they were high—the law of restitution generally denies compensation, in order to induce parties to resort to contracts. Instead, high transaction costs might give rise to a claim in restitution. Disparities in

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[58] Restatement (2002, § 30 (3.a)).

[59] The benefactor recovers the minimum between his costs and the value of the benefit; this guarantees that only efficient improvements are made. See section 4.1.2.

[60] Restatement (2002, § 23, illustrations 16-17).

[61] Restatement (2002, § 24, illustrations 12-13).

[62] Restatement (2002, §§ 24-26, 28-30). Note that I have classified the frustrated expectation of ownership (Restatement, 2002, § 27) as a mistake and hence treated it along with restitution for pure transfers in section 2. This choice is due to the fact that the improver acts under the assumption that he is improving his property. The gainer's gain derives from a mistake on future circumstances, which has the effect of "transferring' the benefit from the benefactor to the gainer (see Restatement, 2002, § 27(a)). An interesting exception is when the joint obligation follows from an illegal contract (*in pari*

dealing with apparently analogous situations are due to idiosyncratic difficulties in establishing whether transaction costs were high or low; as a result, when transaction costs can be more easily established, claims in restitution are more liberally supported. In contrast, the law of tort awards compensation both in cases of high and of low transaction costs. We have explained in section 3.1 that this asymmetry derives from the fact that the same goal of discouraging the voluntary bypassing of the market requires asymmetric means depending on whether the externality is positive or negative: compensation in the latter case, no compensation in the former. This explains why by reversing many harm cases in which tort law awards compensation into apparently analogous benefit cases—for instance, liability for pollution versus restitution for cleaning up—we often discover that restitution denies compensation.[63]

4.1.2 Benefit *versus* cost as a measure of liability

When there is a claim in restitution, how much should be awarded? The Restatement again offers a general principle: "Liability in restitution is based on and measured by the receipt of a benefit" (Restatement, 2000, § 2(1)). However, further reading of the Restatement provides a different picture. Restitutionary remedies are not always measured by the benefit to the gainer and go from the compensation of the benefactor's costs, to the restitution of the gainer's enrichment, to the disgorgement of the gainer's additional profits derived from the enrichment.[64] These three measures can be connected with the three types of restitution rules, as classified in section 2: restitution for positive externalities, pure transfers and negative externalities, respectively.

The measure of restitution for negative externalities is most favorable to the benefactor and is aimed at disgorging the profit of wrongful conduct. Wrongdoers—for instance, trespassers, converters or infringers—are liable for the maximum between the enrichment and its market value. If the wrongful conduct was conscious—that is, carried out with knowledge actual or imputed of the wrongfulness—then all of the net profits and consequential gains are also disgorged ("accounted").[65] If the conduct does not qualify as wrongful, but is nevertheless blameworthy for other reasons—bad faith, lack of care or other reprehensible circumstances—the gainer might, in

delicto); see the discussion in section 2.

[63] "For example, an intermeddler mechanic who changes the oil in every car he encounters cannot recover the market price for an oil change […]" (Hershovitz, 2006, note 13). The author notes that this case cannot be explained by difficulties in valuing the gain. However, it is easily explained when considering the goal to avoid intentional bypassing of the market as I do in the text.

[64] Restatement (2007, § 49).

[65] Restatement (2007, §§ 51, 53).

some cases, be treated as a conscious wrongdoer for the purpose of quantifying the remedy.[66] I have already argued that the function of this part of the law of restitution is to reinforce the effect of other rules, which aim at deterring the underlying behavior—for instance, a tort, a crime or a breach of contract. The restitution rules involved contribute to the deterrent effect by disgorging the benefit accrued to the gainer and, if "conscious", also the consequential gains.

The measure of restitution for pure transfers, due to mistake or an obligation that ceased to exist, is the benefit received by the gainer. Such benefit is in most cases also equivalent to the costs to the benefactor, because we are examining pure transfers.[67] The law of restitution simply aims at undoing transfers that should not have occurred, and for which no one is to be blamed.

The measure of restitution for positive externalities raises an interesting problem. Since, by hypothesis, the benefit to the gainer is greater than the cost incurred by the benefactor, should the remedy be measured on the benefit or on the cost?[68] In tort law, what counts is the harm to the victim. Thus, by analogy, we should expect restitution to be equal to the benefit to the gainer. Instead, the law of restitution limits the remedy to the minimum between cost and benefit.[69] For instance, rescuers can claim restitution for the costs of the rescue operation, but not for the benefits thereof.[70] Similarly, one who takes care of another's obligation, such as a developer who installs improvements for which the individual owners are obliged, can claim the costs of the improvement, but not the money he saves the owners.[71]

This asymmetry between tort and restitution in measuring liability can be related to our previous discussion of the optimal design of a negative liability rule. The analysis has emphasized that, while in tort the sharing of the loss in equilibrium does not affect the incentives to take care, in restitution cases the gain has to be shared in equilibrium, so as to cover the costs to the parties. Moreover, in sequential cases,—emergency interventions are typically sequential— the gain should be shared in a way that favors the first mover. Actual restitution rules are in accordance with the recommendations of the theoretical model as they allow the second mover (the salvor) to recover only his costs.[72]

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[66] Restatement (2007, § 52). See also note 32 above and accompanying text.
[67] Restatement (2007, § 50).
[68] See Farnsworth (1985).
[69] Restatement (2007, § 50).
[70] Restatement (2002, §§ 22, 23, 26, comment *h*, § 28, comment *e*, § 29, comment *g*).
[71] Restitution (2000, § 2, illustration 6).
[72] The same applies to benefactors acting in self-interest; Restatement (2002, § 23). The compensation awarded to successful salvors at sea under admiralty law is larger than under the law of restitution, arguably because of the more

4.1.3 Restitution for some benefits, but not for others

Even when we restrict the set of cases susceptible to restitution to those in which the bypassing of the market was involuntary, one of the core principles of the law of restitution is that receiving a benefit that has been costly to produce by another is only a necessary, but not a sufficient, condition for restitution.[73] A vast set of positive externalities is not captured by the law of restitution, such as when improvements in one's property also improve the value of adjoining property, or when an architect designs a building with distinct features that is subsequently photographed for commercial purposes.[74] More generally, activities having to do with security, defense, education and information generate massive positive externalities, which are not the object of any liability rule, positive or negative.

Moreover, restitution rules that deal with positive externalities include a *requirement of utility*, which implies that benefits exceed costs. This requirement emerges from rules that limit recovery to professional rescuers[75] protecting health and life, or to those cases in which "it is reasonable for the claimant to assume that the defendant would wish the action performed",[76] for the protection of property. Accordingly, improvements made by self-interested benefactors are only compensated if necessary, if they correspond to some obligation or if they can be easily valuated in monetary terms.[77]

This suggests that there is a concern with the fact that gains are not easily provable because, as we have argued in section 3.3, the plaintiff is often far away from the externality. Such concern also emerges in the different treatment of emergency cases as compared to cases in which the benefactor acts in self-interest. As we have noted above in section 4.1.1, the latter set of cases are plagued by additional difficulties in measuring the externality and ascertaining the relevance of transaction costs as an impediment to bargaining; hence, restitutionary remedies are more conservatively awarded.

Reversing the burden of proof does not solve the problem completely. In fact, put aside those cases in which the enrichment can be presumed. In most cases, the plaintiff needs to give at least a

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serious risks involved in salvage at sea and because unsuccessful salvors have no claim in restitution; Restatement (2002, § 21, comment *e*). See Levmore (1994, pp. 1429 ff.) discussing an analogous problem of a potentially unsuccessful salvage.

[73] Restitution (2000, § 2 (3)).

[74] Restitution (2000, § 2, illustrations 4, 5, 7).

[75] Restitution (2002, § 20).

[76] Restitution (2002, § 21, comment *b*).

[77] See notes 56 to 61 and accompanying text. In a similar fashion, admiralty law denies any award to a salvor at sea whose

reasonable approximation of the gainer's gain,[78] which might be difficult. Further proof that evidence problems might be the reason why the scope of restitution law as a whole appears to be more limited than that of tort liability might come from the observation that many positive externalities are dealt with within legal instruments other than restitution. In the following section, we will briefly discuss tort liability, intellectual property and public provision of public goods.

4.2 The internalization of positive externalities in tort, intellectual property and government intervention

Since most negative externalities are not dealt with within the law of restitution, other areas of the law also deal with this problem.

4.2.1 Tort: Discounting positive from negative externalities

At times, negative and positive externalities jointly occur as a result of the same action. Situations of this type have been analyzed in the law and economics literature under the heading of pure economic loss. A loss is said to be purely economic to the extent that the loss to the victim (for example, an investor who bought an overpriced bond) is offset by a gain for another party (the investor who sold that bond). Therefore, the injurer (for instance, a negligent auditor) is truly an injurer to the victim, but turns out to be a benefactor to the gainer.

To the extent that the gainer wins what the victim loses, the victim's loss does not amount to a social loss.[79] As a result, if the injurer were to completely compensate the victim, he would actually be paying damages in excess of the social loss. In turn, this would induce the injurer to take care beyond the socially optimal level. There are two possible solutions to this conundrum. One is to entitle the injurer to claim compensation from the gainer for the gain produced. Such a solution would correspond to negative liability for gain, in addition to positive tort liability for harm.[80] In this case, two independent legal claims would arise from the injurer's behavior, but we have seen that the negative liability claim would encounter problems in its optimal implementation.

A second more practical solution is offered by the pure economic loss approach, under which the injurer only pays damages equal to the victim's harm minus the gainer's gain, instead of fully

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attempts at salvage were unsuccessful. See note 72

[78] Restatement (2007, III.7, Introductory Note) and Restatement (2007, § 59, comment *e* (4)).

[79] The market distortions that negligent auditing causes are instead true social losses.

[80] Bishop (1982, pp. 9-10) refers to this solution as "each-way liability".

compensatory damages.[81] In this way, the injurer internalizes the net effect of his activity. This solution bypasses the need for negative liability by charging (positive) tort liability with two, not necessarily compatible, tasks: internalizing the victim's loss and the gainer's gain. On the one hand, this solution radically eliminates the problems of implementing a negative liability system. On the other hand, it is unlikely that tort law may produce the appropriate incentives for the three parties involved in the game (the injurer, the victim and the gainer), hence only reaching a second-best solution. The victim, in fact, ends up paying for the gainer's gain.[82]

4.2.2 Tort: Externalizing the costs of producing a positive externality

The internalization of external benefits can also be achieved by allowing the benefactor to externalize his costs of care. In this way, even if there is no positive reward for taking action, the benefit comes at nearly no cost for the benefactor, thus making him indifferent between action and inaction. In practice, this solution approaches the theoretically optimal negative liability rule, refunding the benefactor's costs of care when the benefactor moves second. A rule that allows a benefactor to externalize the costs of producing a positive externality is the privilege of defense of others as a waiver of tort liability,[83] which allows the benefactor-injurer to harm the victim in the course of saving the gainer. This solution does not necessarily preclude the possibility that the victim be nonetheless indemnified by the gainer. Even in this case, the gainer still retains most of the gain, which is in line with the theoretical results of the previous section.

4.2.3 Tort: Liability for nonfeasance

An externality can be seen from two perspectives: rescuing a stranger in danger may be seen as a positive externality; conversely, failure to do so may be seen as a negative one. The choice between these two perspectives depends on what we consider as the status quo, which might in turn depend

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[81] Bishop (1982). See also Rizzo (1982) for a different view. Parisi (2003) notices that if the third party gain is higher than the victim's loss, then negative liability should apply: the injurer should be able to collect from the gainer. See Bussani, Palmer and Parisi (2003) for a recent comparative law and economics analysis.

[82] Dari-Mattiacci (2004). In *New York Times Co. v. Sullivan*, 376 US 254 (1964), the US Supreme Court quashed as unconstitutional the imposition of liability on an organ of the press for the mere diffusion of false information, fearing that such a burden would induce self-censorship. Commentators have accordingly argued that ordinary strict liability for libel might over-deter potential critics of official conduct, because criticism produces benefits that are not fully captured by the publisher. Given the impracticability of internalizing these external benefits directly (through a negative liability rule), it has been said that tort liability should be limited. Bar-Gill and Hamdani (2003) argue that making the injurer pay damages equal to the net social benefit of truthful information provides equivalent incentives to imposing damages equal to the harm caused by false information.

[83] Keeton, Dobbs, Keeton, and Owen (1984, pp. 146 ff.).

on the legal allocation of rights. In fact, instead of imposing negative liability for benefit, the legal system could impose positive (tort) liability for failure to produce the same benefit. Two interesting questions arise from this observation. Why is the law of tort more conservative in dealing with failure to produce a benefit (nonfeasance) than with the active production of harm (misfeasance)?[84] In the case of nonfeasance, is tort liability for failure to act a more appropriate incentive device than negative liability for the benefit produced by acting?

We can tackle these questions by assessing positive (tort) liability for nonfeasance against the theoretical framework of section 3. Concerning intent, the considerations made with regard to negative liability also apply to positive (tort) liability for nonfeasance. When transaction costs are low—or if it is not clear whether they were high—liability should be denied if intentional bypassing of the market is to be discouraged. In fact, imposing liability when transaction costs are low would encourage the bypassing of the market in situations in which a contract was instead feasible. Thus, for instance, a cotenant should not be liable for not making improvements that raise the value of the common property if such improvements can be negotiated *ex ante*. In contrast, a cotenant should be—and, in fact, is—liable for activities that decrease the value of the property, irrespective of whether a contract was feasible. It appears that, for this matter, tort liability for nonfeasance is analogous to negative liability and that both implement a solution that is the opposite of that taken in ordinary tort liability for misfeasance, which awards compensation for voluntary bypassing of the market.[85]

The second issue that we address is that of incentives to take care. Note that tort liability for nonfeasance effectively imposes a duty to act without compensation. The incentives to take care are

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[84] Keeton, Dobbs, Keeton, and Owen (1984, pp. 373-374) define nonfeasance as "active misconduct working positive injury to others" and misfeasance as "passive inaction or a failure to take steps to protect them from harm". They observe that "The highly individualistic philosophy of the early common law had no great difficulty in working out restraints upon the commission of affirmative acts of harm, but shrank from converting the courts into an agency for forcing men to help one another. […] Liability for nonfeasance was therefore slow to receive recognition in the common law. […] Liability for "misfeasance", then, may extend to any person to whom harm may reasonably be anticipated as a result of the defendant's conduct […] while for "nonfeasance" it is necessary to find some definite relation between the parties, of such a character that social policy justifies the imposition of a duty to act. [A slow and cautious process of extension is taking place, and] there is reason to think that it may continue until it approaches a general holding that the mere knowledge of serious peril, threatening death or great bodily harm to another, which an identified defendant might avoid with little inconvenience, creates a sufficient relation to impose a duty of action". See also Levmore (1986, p. 880).

[85] Landes and Posner (1978) and Posner (2003, pp. 190 ff.) provide an efficiency justification for limiting liability for nonfeasance. Other commentators (Epstein, 1973, p. 190; Hansen, 1995) have argued against this principle, contending that it is in stark contrast with the provision of efficient incentives to rescue. Harel and Jacob (2002) argue in favor of liability for failure to rescue but justify the divergence in the treatment of misfeasance and nonfeasance in the light of the principle of salience, aimed at avoiding the dilution of incentives that could derive from the simultaneous presence of several potential rescuers, who would be only partially liable in expected terms. None of these authors, however, has proposed to extend liability for nonfeasance beyond the scope defined in the text.

supported by the prospect of tort liability for failure to act. In turn, the other party earns the entire gain, and hence has incentives to take the appropriate level of care.[86] Thus, liability for nonfeasance produces the same incentives to take care as an optimally set negative liability rule.

As to the third issue, that of evidence, the distinction we made between positive and negative liability had to do with the proximity of the plaintiff to the externality. We noted that, in tort liability for negative externalities, the plaintiff is close to the externality, while in negative liability for positive externalities the plaintiff is far from the externality. Hence, other things equal, providing evidence might be more difficult in the latter case. Moving from negative liability to positive (tort) liability for nonfeasance brings the plaintiff close to the externality. In fact, in a tort claim for nonfeasance, the plaintiff is the victim (the potential gainer) and acts to obtain compensation for a loss he suffered as a consequence of the benefactor-defendant's failure to act. Implementing tort liability for nonfeasance instead of negative liability for benefit reverses the roles of plaintiff and defendant, selecting as plaintiff the party who is closer to the externality.

From these observations, we can draw some straightforward implications. First, tort liability for nonfeasance necessarily has a narrower scope as compared with more common forms of tort liability for misfeasance, because it excludes intentional bypassing of the market. This finding might explain why the legal system is much more conservative in implementing tort liability for nonfeasance. Second, implementing tort liability for nonfeasance instead of (or in addition to) negative liability for benefit might have some advantages in that the plaintiff is now the party who is closer to the externality, that is, the victim suffering the consequences of the defendant-benefactor's failure to act. The latter point, however, needs some qualifications. Failure to produce a positive externality might in some cases materialize into an actual loss—such as the death of an individual who could have been saved—while in other cases it might simply amount to a foregone profit—such as the increase in market value of a property that could have occurred if all cotenants had contributed to the improvements. With actual losses, evidence production might be easier under tort liability for nonfeasance. Instead, with foregone profits, evidence production might be easier under negative liability. The reason is that, tort liability for nonfeasance requires applies in the bad state of nature, when actual losses have materialized and foregone profits have not. In contrast, negative liability applies in the good state of nature, when actual losses have been avoided and profits have materialized. This disadvantage of tort liability for nonfeasance, *vis-à-vis* negative

[86] The payment of an indemnity or restitution for the costs incurred by the other party or some sharing of the gain does not

liability, in dealing with foregone profits might neutralize the advantage in terms of the plaintiff's proximity to the externality and hence explain why only some cases of positive externality—namely only those characterized by actual harm to person or property—fall under tort law.[87] That is "If conduct has gone forward to such a stage that inaction would commonly result, *not negatively merely in withholding a benefit*, but positively or actively in working an injury, there exists a relation out of which arises a duty to go forward".[88]

4.2.4 Intellectual property

Inventions offer the clearest examples of positive externalities. Moreover, one can easily think of various kinds of both simultaneous and sequential situations. For example, an inventor and a firm can simultaneously develop a new technology and a new product, respectively, where the latter can be improved by the former. In other cases, the inventor and the firm can act sequentially: the firms might develop a new product based on the inventor technology or vice versa. In principle, these and similar scenarios could be dealt with within the law of restitution. Nevertheless, the legal system categorizes them within the domain of intellectual property and the resulting litigation is not framed as restitution for the production of a benefit, but rather as a violation of a property right.

Hypothetically, a system of negative liability covering inventions or works of art would run into the difficulties emphasized above and, namely, the assessment of transaction cost, the optimal sharing of the gain and the production of evidence. A system of intellectual property rights circumvents these problems by providing institutions that reduce transaction costs, sharing and evidence problems. For example, filing for a patent gives inventors a series of well-defined actionable rights that simplify *ex post* litigation. The question whether and to what extent the gainer benefited from the benefactors' technology is replaced by the narrower question, whether the gainer infringed the benefactor's patent, which is arguably easier to address.[89]

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alter this result.

[87] See Leebov v. U.S. Fidelity, 165 A. 2d 82 (Pa. 1960). Levmore (1994) characterizes *Leebov* as a half-step remedy, granting restitution only if rescue succeeded. This implies a nonnegligible risk of failure, an issue discussed in note 72.

[88] H.R. Moch Co. v. Rensselaer Water Co., 247 N.Y. 160, 159 N.E. 896 (N.Y. 1928), emphasis added.

[89] See Landes and Posner (2003) for an economic analysis of intellectual property law. Specific doctrines deal with some cases in a fashion that is very close to a liability approach. The doctrine of fair use concerns situations of high transaction costs; it allows noncommercial uses of low (e.g., copies for personal use) or unclear (e.g., public library use) individual value to be undertaken irrespective of the previous permission of the copyright holder (the benefactor). In a similar spirit, the Copyright Act of 1976 provides compulsory license for mechanical rights, according to which, under certain conditions, singers can record musical work without the authorization of the copyright holder.

4.2.5 Government intervention

Other examples of positive externalities are provided by activities, such as education, health care, national defense, lawmaking and law enforcement, which are largely provided, subsidized or rewarded by the government. It is evident that these activities are more complex to handle than those examined under the previous sections. Despite the problems already encountered, these activities require a greater amount of coordination and organization that cannot be efficiently induced by a negative liability rule, or have such dispersed benefits that collecting from the gainers through the liability system would generate large administrative costs.

5 Conclusions

Why are we generally obliged to compensate those whom we harm, but can recover from those whom we benefit only under specific circumstances? This paper shows that there is a fundamental asymmetry between the ordinary system of (positive) tort liability—paying for harm—and a hypothetical system of negative liability—being compensated for benefit. Remedies are asymmetrical despite the fact that the problems they tackle are symmetrical—negative *versus* positive externalities, respectively. With the help of a theoretical model, we have identified three asymmetries concerning intent, incentives and evidence and used these results to examine the current treatment of positive externalities in the law.

The portion of the law of restitution that deals with positive externalities—the remaining parts deal with negative externalities and pure transfers—is governed by three principles that sharply distinguish restitution rules from tort law: there is no claim for the intentional production of positive externalities; compensation is measured by the cost to the benefactor rather than by the benefit to the gainer; finally, there is a claim in restitution only for some benefits, but not for others. These features have been shown to be in line with the predictions of the theoretical model.

Those positive externalities that are not internalized by the law of restitution are addressed in other areas of the law, such as tort, intellectual property and regulation. In particular, tort law employs three relevant mechanisms for the internalization of positive externalities: it discounts positive from negative externalities in pure economic loss cases; it allows benefactors to injure third parties in the course of assisting gainers; finally, it punishes failure to produce a positive externality in cases covered by liability for nonfeasance.

Although there are often sharp differences between American law and other legal systems, the general principles highlighted above apply across the board and are also part of the main framework of restitution and tort remedies in ancient Roman[90] and modern European laws.[91] Even a superficial inspection of these legal systems reveals that restitution is limited to unintentional positive externalities, that the measure of restitution for positive externalities is the cost to the benefactor rather than the benefit to the gainer, that only some benefits and not others lead to a claim in restitution, and, finally, that tort liability for omissions (nonfeasances) is more limited in scope than tort liability for commissions (misfeasances) and applies only when harm materializes.

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[90] See Talamanca (1994, p. 610 ff).
[91] See Zweigert and Kötz (1987).

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