Should Liability Be Based on the Harm to the Victim or the Gain to the Injurer?

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Should the level of liability imposed on an injurer be based on the harm he caused or instead on the gain he obtained from engaging in the harmful act? There is a strong reason to favor liability based on harm rather than gain when account is taken of the possibility of legal error. Notably, even a small underestimate of gain can lead an injurer to commit a harmful act when the harm greatly exceeds his gain, resulting in a large social loss. In contrast, a comparable error in the estimate of harm will not lead an injurer to engage in the harmful act when the harm significantly exceeds his gain. The general superiority of harm-based liability holds under the rules of negligence and strict liability and regardless of whether potential injurers know the error that will be made.

1. Introduction

Should the level of liability imposed on an injurer be based on the harm he caused or instead on the gain he obtained from his misconduct? For example, if a person's failure to take a precaution that costs $1,000 results in a harm of $10,000, should he be liable for the $10,000 harm or the $1,000 he saved? If a firm violates a regulatory requirement and thereby increases its profit, should the firm's liability equal the harm caused by the violation or its additional profit?

The answer the law provides to such questions is not uniform. In tort and contract disputes, liability generally is based on the victim's harm,[1] although sometimes the injurer's gain is taken into account (for instance, in determin-

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1. See, for example, American Jurisprudence (1988: 35, footnote omitted): "Generally, a person who, tortiously or in breach of a contractual obligation, does an act which has injurious consequences is liable for the damage caused by such wrongful act."

ing punitive damages in tort law and restitutionary damages in contract law).[2]
In public enforcement contexts (including environmental and financial regula-
tion), liability often depends on harm, but also frequently on gain.[3] Notably,
under guidelines promulgated by the United States Sentencing Commission,
courts are required to consider in determining the amount of a fine "the need
for the . . . sentence to reflect the seriousness of the offense (including the
harm or loss to the victim and the gain to the defendant) . . ."[4]

In this article we evaluate the efficacy of harm-based liability and gain-
based liability as means of deterring socially undesirable acts—acts for which
an injurer's gain is less than the victim's harm.[5] Either measure of liability
will deter such acts in a legal system in which harm and gain are correctly
assessed. Harm-based liability accomplishes deterrence because the harm
from a socially undesirable act, and therefore the level of liability, will exceed
the injurer's gain. Gain-based liability achieves the same result by making the
injurer disgorge his gain (or a little more).

We will emphasize, however, that the two approaches differ significantly
when account is taken of errors that the legal system may make in calculating
gain and harm. In particular, gain-based liability will be shown to be seriously
flawed in the presence of legal error because it fails to deter many socially
undesirable acts. Harm-based liability, however, is not as susceptible to this
criticism and therefore generally is superior.

The problem with gain-based liability is that any underestimation of the
gain will in principle lead an individual to commit an undesirable act, no
matter how great the resulting harm may be. Suppose, for example, that an act
would produce a gain of $1,000 for an individual and that the gain is slightly

2. Regarding punitive damages, see, for example, *Pacific Mutual Life Insurance Co. v.
Haslip,* 499 U.S. 1, 21–22 (1991) (in which the U.S. Supreme Court endorsed a list of seven
factors considered relevant to the size of a punitive damage award, one of which was "the
profitability to the defendant of the wrongful conduct and the desirability of removing that profit
and of having the defendant also sustain a loss"). Regarding restitutionary damages, see, for
example, Farnsworth (1990: 150–51) ("[T]he object of restitution is . . . the prevention of unjust
enrichment. The focus is on the party in breach rather than on the injured party, ... The party
in breach is required to disgorge what that party has received in money or services").

3. Penalties for noncompliance with laws governing air quality can be set at a level at least
equal to "the economic value which a delay in compliance . . . may have for the owner" of the
source of pollution. See United States Code, Title 42, Section 7420(d)(2)(A). Violators of
the securities laws can be made liable to the government for an amount equal to their gain from
the violation. See *Securities and Exchange Commission v. Paul A. Bilzerian, et al.,* 814 F.Supp.
116, 121 (1993) (an action by the SEC successfully seeking the disgorgement of profits obtained
by defendant Bilzerian through certain securities transactions). Also, under the RICO (Racketeer-
Influenced and Corrupt Organizations) Act, "a defendant who derives profits or other proceeds
from an offense may be fined not more than twice the gross profits or other proceeds." See United
States Code, Title 18, Section 1963(a)(3). Gain is taken into account as well in calculating
penalties under the Internal Revenue Code, the Clean Water Act, and the Toxic Substances
Control Act.

4. See United States Sentencing Commission (1987: 5.15). These guidelines apply to indi-
vidual defendants. Sentences for organizational defendants also take both harm and gain into
account.

5. We also consider compensation issues briefly in comment (f) of Section 5 below.

underestimated—say it is thought to be $950. Then the individual will be led to commit the act—he would profit by $50—regardless of the harm, whether it is $2,000, $20,000, or $200,000. In contrast, under harm-based liability, the individual is not likely to commit the act when the harm greatly exceeds his gain of $1,000, because his liability is likely to exceed $1,000 even if the measurement of harm is subject to substantial error.

We will show that harm-based liability is superior to gain-based liability under quite general assumptions about the probability distribution of legal error and regardless of whether individuals know the magnitude of the error before deciding whether to engage in the harmful act. Section 2 describes the basic framework of the analysis. Section 3 presents the results under the negligence rule and Section 4 briefly considers the strict liability rule. Section 5 contains concluding remarks.[6]

2. Basic Framework

Each individual in a population of risk-neutral individuals decides whether to engage in an act that will result in a harm and a gain with certainty.[7] Both the harm and the gain vary among individuals. Let

g = gain to an individual who engages in the act, $g > 0$;

h = harm caused if the individual engages in the act, $h > 0$;

and assume that the joint probability density over g and h is positive for all positive g and h. Individuals know their own g and h.

If the social authority responsible for setting the level of liability makes errors in observing the gain and/or the harm, the values it observes are assumed to take the forms $g + \gamma$ and $h + \eta$, where

γ = error in observing the gain;

η = error in observing the harm.

These errors have a mean of zero and are independent of one another.

An individual will engage in the harmful act if and only if his gain exceeds his expected liability.[8] The latter depends (in ways described in Sections 3 and

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6. Wittman (1984, 1985) considers liability based on harm and liability based on gain, but does not make the point that we emphasize here. His focus is on which party—the injurer or the victim—should decide how much care the injurer exercises. Parker (1989: 554–63) and Gruner (1992: 234–63) informally discuss harm-based and gain-based liability in the context of criminal sentencing policy for organizations. In addition, a number of authors have studied the effects of legal errors on individual behavior under liability rules, but take for granted that the level of liability is based on harm. See, for example, Craswell and Calfee (1986).

7. That this choice is discrete and that the harm and the gain occur with certainty is assumed only for simplicity. See comments (c) and (d) in Section 5 below.

8. We assume for convenience that the individual will not engage in the act if his gain equals his expected liability.

4) on the applicable liability rule and on whether he knows before committing the act what errors the social authority will make in observing his gain and harm.

Social welfare is taken to be the sum of the gains less the harms associated with the subset of individuals who commit harmful acts. In the first-best outcome, every individual whose gain exceeds harm will engage in the act, and every individual for whom the reverse is true will refrain from the act.

3. Analysis Under the Negligence Rule

Under the negligence rule, an individual is liable if and only if he is found negligent. An individual will be found negligent when the act committed is judged socially undesirable, that is, when his observed gain, $g + \gamma$, is less than the observed harm, $h + \eta$.[9]

We will consider two alternative measures of liability under the negligence rule: *gain-based liability*—equal to the observed value of the injurer's gain, $g + \gamma$—and *harm-based liability*—equal to the observed value of the victim's harm, $h + \eta$. These measures will be compared first when there are no errors in estimation (when γ and η are identically zero), then when there are errors and their values are known by individuals before they decide whether to engage in the harmful act, and finally when there are errors but their values are not known by individuals in advance.

3.1 No Errors

In this case, an individual will be found negligent if and only if $g < h$; liability then will be g under gain-based liability and h under harm-based liability.

Under gain-based liability, an individual will be deterred from engaging in the act whenever $g < h$, for if the act is committed, his gain will have to be surrendered.[10] Similarly, under harm-based liability, an individual will be deterred from engaging in the act whenever $g < h$, for if he engages in it he will have to pay the harm, which exceeds his gain. Under both measures an individual will engage in the act whenever $g \geq h$, since he will not be found negligent. Thus, *if there are no errors in observing gain or harm, the two measures of liability are equivalent*. Moreover, the first-best outcome is achieved.

3.2 Errors Anticipated

We now assume that the social authority makes errors and that individuals know what the errors are before deciding whether to engage in the harmful act.

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9. Although acts that are socially undesirable are described here as negligent, the reader also could interpret them as criminal or as violations of regulatory standards.

10. Recall that we have assumed for simplicity that an individual will not engage in the act when he is indifferent. This assumption can be interpreted as capturing the fact that liability slightly in excess of gain would make the injurer strictly prefer not to engage in the act.

Suppose first that only the gain is observed with error.[11] Then if $g + \gamma \geq h$, negligence will not be found and the measure of liability will be irrelevant. Assume, therefore, that $g + \gamma < h$, so negligence will be found.

Then under harm-based liability, since liability is h, an individual will engage in the act if and only if $g > h$. Under gain-based liability, an individual will engage in the act whenever the gain is underestimated—that is, whenever $\gamma < 0$. Relative to the outcome under harm-based liability, this results in a social loss of $h - g$ if $g < h$, and is equivalent to the outcome under harm-based liability if $g \geq h$. If the gain is overestimated, an individual will be deterred under gain-based liability as well as under harm-based liability; the latter result follows because $\gamma > 0$ and $g + \gamma < h$ (the maintained assumption that negligence will be found) imply that $g < h$.

The preceding discussion shows that *when gain alone is observed with error and the error is anticipated, harm-based liability is superior to gain-based liability.* In particular, if gain is underestimated, the gain-based measure will lead an individual to engage in the harmful act even when his gain is less than the harm (possibly much less than the harm); but under harm-based liability, an individual never engages in the act when his gain is less than the harm.

Now suppose that both gain and harm are observed with error. When $g + \gamma \geq h + \eta$, negligence will not be found and the measure of liability will be irrelevant, so again assume that negligence is found—that $g + \gamma < h + \eta$.

If $g \leq g + \gamma$, an individual will be deterred under both measures of liability (since $g \leq g + \gamma < h + \eta$). Conversely, if $g > h + \eta$, an individual will engage in the act under both measures. Only when $g + \gamma < g \leq h + \eta$ will the two measures of liability differ in their effect—an individual will engage in the act under gain-based liability but not under harm-based liability.

The extra inducement to engage in the act under the gain-based measure may in principle be undesirable or desirable. It will be undesirable if $g < h$. This clearly is possible since $g + \gamma < g < h < h + \eta$ can occur if $\gamma < 0$ and $\eta > 0$; and $g + \gamma < g < h + \eta < h$ can occur if $\gamma < 0$ and $g - h < \eta < 0$. The added incentive to engage in the act will be desirable if $g > h$. This also is possible because $g + \gamma < h < g < h + \eta$ can occur if $\gamma < h - g < 0$ and $\eta > g - h > 0$; and $h < g + \gamma < g < h + \eta$ can occur if $h - g < \gamma < 0$ and $\eta > g - h > 0$. Thus, without further assumptions, it is not possible to say which measure of liability is preferable.

Notwithstanding that the two measures cannot be ranked unambiguously when both gain and harm are observed with error and the errors are anticipated, there is an important sense in which harm-based liability is superior to gain-based liability: Let γ_M be the maximum error that can occur in observing gain and η_M be the maximum error that can occur in observing harm. It can be shown that, for any γ_M, harm-based liability is superior to gain-based liability

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11. Because our principal interest is in errors in estimating the gain, we do not consider in the text the situation when harm alone is subject to error. However, this case is discussed in notes 13, 16, 17, and 18 below.

when η_M is sufficiently low.[12] However, the converse is not true; gain-based liability may be inferior to harm-based liability no matter how small γ_M is (as long as it is positive).[13] These results are demonstrated in the Appendix.

The explanation is in essence that even a small error in estimating gain can cause a large social loss because such an error can lead an individual to commit a harmful act when his gain is much less than the harm. In contrast, a small error in estimating harm can cause only a small social loss because an individual will commit the act only if his gain exceeds the estimate of the harm, which (by hypothesis) is relatively close to the harm.

The advantage of harm-based liability can be illustrated by the following numerical example. Suppose that there are one million individuals in the population, that the gain from engaging in the harmful act varies uniformly among them from $1 to $100 (by increments of a dollar), and that the resulting harm also varies uniformly and independently from $1 to $100 (by increments of a dollar). Then the level of social welfare in the first-best outcome— equivalently, the outcome when there are no errors in observing gain or harm—can be calculated to be $16.665 million. Suppose the errors, both positive and negative, in observing gain and harm are uniformly distributed (by increments of a dollar) from zero to some upper bound—γ_M for gain and η_M for harm.[14] If $\gamma_M = \eta_M = \$1$, so that both gain and harm are observed with only a small error, social welfare falls 32 percent under gain-based liability, to $11.270 million, but less than 1 percent under harm-based liability, to $16.658 million. Holding γ_M (the maximum error in observing gain) at $1 but raising η_M (the maximum error in observing harm) to $25 does not significantly affect this result: social welfare then is $10.795 million under gain-based liability (a 35 percent reduction from the first-best level) and $15.948 million under harm-based liability (a 4 percent reduction). In other words, even when the errors with respect to harm are large and the errors with respect to gain are small, harm-based liability is strongly preferred to gain-based liability.

3.3 Errors Not Anticipated

In this case, we assume that individuals do not know what the social authority's errors will be when deciding whether to engage in the harmful act; they know only the distributions of the error terms.

With this information, an individual can compute the probability that he

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12. Note that this result implies that harm-based liability is superior to gain-based liability when the gain alone is subject to error, for then $\eta_M = 0$.

13. In the special case in which only the estimation of harm is subject to error, gain-based liability and harm-based liability are equivalent: both result in deterrence whenever negligence is found (for $g < h + \eta$ implies that an individual will not engage in the act regardless of whether his liability is g or $h + \eta$). This does not contradict the result stated in the text, since when harm alone is subject to error, $\gamma_M = 0$.

14. We assume that the maximum possible error is reduced whenever, given the true value of the injurer's gain and the victim's harm, the observed values of gain or harm otherwise would be less than $1 or greater than $100.

will be found negligent if he engages in the act—that is, the probability that $g + \gamma < h + \eta$ given his g and h. Let $p(g, h)$ represent this probability. If $p(g, h)$ is zero, the measure of liability is irrelevant, so we will consider only g and h such that $p(g, h)$ is positive.

An individual also can calculate the probability distribution of the level of liability if there is a finding of negligence. Let $Eg(g, h)$ denote the expected value of the individual's liability under the gain-based measure, conditional on negligence being found; and let $Eh(g, h)$ be the corresponding expected value under the harm-based measure.[15]

Since $g + \gamma < h + \eta$ whenever negligence is found, it follows that $Eg(g, h) < Eh(g, h)$, so that $p(g, h)Eg(g, h) < p(g, h)Eh(g, h)$. In other words, the individual's expected liability is lower under the gain-based measure. If $g < p(g, h)Eg(g, h)$, the individual will be deterred from engaging in the harmful act under both measures of liability; and if $g > p(g, h)Eh(g, h)$, he will engage in the act under both. The measures differ only if $p(g, h)Eg(g, h) < g < p(g, h)Eh(g, h)$—in which case an individual will engage in the act under gain-based liability but not under harm-based liability. But then, engaging in the harmful act lowers social welfare since $g < p(g, h)Eh(g, h) \leq h$; the latter inequality follows from the fact that if an individual were always found liable, his expected liability under the harm-based measure would be the unconditional expected value of $h + \eta$, which is h.

We conclude, therefore, that *when both gain and harm are observed with error and the errors are not anticipated, harm-based liability is superior to gain-based liability.*[16] Note that the present argument favoring harm-based liability is stronger, since it is unambiguous, than the argument when errors are anticipated. In both cases, the problem with gain-based liability is that it provides an added inducement to engage in the harmful act when an individual's gain is less than the harm.

4. Analysis Under the Strict Liability Rule

Under the rule of strict liability, an individual is liable whenever he causes harm (regardless of whether he is negligent), which means, within our framework, whenever he commits the harmful act. It might seem peculiar to consider the gain-based measure of liability under this rule because making an injurer always disgorge his gain would cause him never to engage in the harmful act, even when his gain far exceeds the harm. For completeness, however, we will briefly compare the gain-based measure to the harm-based measure under strict liability when gain and harm are observed with error (in which case an individual would not always be deterred from engaging in the harmful act).

Suppose first that the errors are anticipated. Under the harm-based mea-

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15. In other words, $Eg(g, h)$ equals the expected value of $g + \gamma$ conditional on $g + \gamma < h + \eta$; and $Eh(g, h)$ equals the expected value of $h + \eta$ conditional on $g + \gamma < h + \eta$.

16. This result implies that in the special cases in which gain alone or harm alone is estimated with error, harm-based liability is superior to gain-based liability.

sure, some individuals whose gain is less than harm will engage in the act—those for whom $h + \eta < g < h$—and some individuals whose gain exceeds harm will not engage in the act—those for whom $h < g < h + \eta$. Likewise, under the gain-based measure, some individuals whose gain is less than harm will engage in the act—those for whom $g + \gamma < g < h$— and some individuals whose gain exceeds harm will not engage in the act—those for whom $h < g < g + \gamma$. Hence, as was the case under the negligence rule, either harm-based or gain-based liability could in principle be superior.

But again, *notwithstanding that the two measures cannot be ranked unambiguously when both gain and harm are observed with error and the errors are anticipated, harm-based liability is superior to gain-based liability in the previously described sense.* Specifically, harm-based liability is preferable when the maximum error with respect to harm, η_M, is below a threshold, but gain-based liability is not necessarily superior to harm-based liability even if the maximum error with respect to gain, γ_M, is small.[17]

Although this conclusion parallels that reached under the negligence rule, the explanation differs somewhat. There the inefficiency of gain-based liability was that it led many individuals to engage in the harmful act when their gain was less than harm. That problem remains under strict liability. In addition, gain-based liability now deters many individuals whose gain exceeds harm.

Now suppose that the errors are not anticipated. In this case, an individual's expected liability under the harm-based measure is h, since the error, η, has a mean of zero. Therefore, an individual will engage in the harmful act if and only if $g > h$, and the first-best outcome will be achieved. Under the gain-based measure, the individual's expected liability is g since the error, γ, has a mean of zero, and so he will be deterred from engaging in the act regardless of g and h. This outcome is undesirable whenever $g > h$. Thus, *when errors are not anticipated, harm-based liability is superior to gain-based liability.*[18]

5. Concluding Remarks

We conclude with several remarks that interpret, extend, and qualify our analysis.

(a) As we noted in the introduction, in practice liability sometimes depends on gains. This might be because an injurer's gain is easier to calculate than the victim's harm. For example, the amount of money saved by not installing pollution control equipment may be more readily ascertainable than the harm suffered by victims of pollution. But it could be a mistake nonetheless to base liability on the injurer's gain. For as we have seen, if the gain is underestimated

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17. In the special case in which gain alone is estimated with error, it is easy to see that harm-based liability always is preferable to gain-based liability. And in the case in which only the estimation of harm is subject to error, it is readily demonstrated that harm-based liability is superior if η_M is sufficiently low.

18. This result also holds in the special cases in which gain alone or harm alone is estimated with error.

—the cost of controlling pollution might be greater than the enforcement authority calculates—substantial harm can occur. As a general policy, it may be better to base liability on a victim's harm even though the harm can only be approximated, because if the harm is great in relation to the gain, the harmful act is likely to be deterred.

(b) Although we have emphasized the deficiencies of the gain-based measure of liability under the negligence rule, it is worth repeating here why that measure is even more problematic under the strict liability rule: the gain-based measure would result in a pronounced chilling effect on socially desirable behavior. It therefore is not surprising that the gain-based measure apparently is not used under the strict liability rule.

(c) In our model we assumed that harm and gain occur with certainty, but our arguments and conclusions are essentially unaltered if harm or gain is probabilistic: wherever harm enters in our analysis, it is replaced by expected harm, and similarly for gain. For example, under gain-based liability, if the injurer anticipates that his gain will be underestimated if gain occurs, then the expected value of the injurer's liability will be less than his expected gain, and he will commit the harmful act even when the expected harm far exceeds his expected gain. Under harm-based liability, however, if the expected harm is high relative to the expected gain, the injurer's expected liability will exceed his expected gain even if the error in estimating harm if harm occurs is relatively large.[19]

(d) We also assumed that injurers make a discrete choice—whether to engage in a harmful act—but our analysis is not affected in any essential way if their choice is along a continuum. Suppose, for example, that injurers choose how much care to take, where the level of care could affect their gain as well as the probability and magnitude of harm. It still would be true that harm-based liability generally is preferable to gain-based liability because the underestimation of gain can lead an injurer to choose a level of care such that the resulting expected harm greatly exceeds his gain.

(e) We did not consider victims' incentives to avoid harm in our analysis. Under the negligence rule, this factor favors gain-based liability because, whenever negligence is found, the resulting level of liability will be lower than under harm-based liability, which will induce victims to take more care because they will have more to lose. (Under the strict liability rule, the implication of this factor is ambiguous because the gain-based measure may be greater than or less than the harm-based measure.) However, to the extent

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19. Note, moreover, that if harm is uncertain and gain is certain (a commonly assumed case), harm-based liability is superior to gain-based liability even in the absence of errors in observing harm and gain. Under gain-based liability, an individual will not be deterred from engaging in a socially undesirable act, because he has to disgorge his gain only with some probability (when harm occurs). Under harm-based liability, however, he will be deterred because his expected liability equals the expected harm, which, if the act is socially undesirable, exceeds his gain. For example, consider an act that results in a sure gain of $100 and creates a 50 percent chance of a harm of $500. Under gain-based liability, the individual's expected liability is only $50 (= .5 × $100), which will not deter him, whereas under harm-based liability, his expected liability is $250 (= .5 × $500), which will deter him.

that other legal doctrines, such as the defense of contributory negligence, succeed in controlling victims' incentives to avoid harm, the relevance of this factor to the choice of the measure of liability is limited.

(f) Another consideration omitted from the analysis is risk aversion and compensation. This consideration favors harm-based liability if victims are more risk averse than injurers (because harm-based liability, by definition, attempts to make victims whole) and gain-based liability in the reverse case (because, by removing an injurer's gain, gain-based liability keeps the injurer's utility stable). However, the relevance of risk aversion is attenuated by the general ability of parties to purchase insurance.

(g) We assumed in our discussion of the negligence rule that an individual's liability is determined on a case-by-case basis—that is, taking account of the individual's gain from engaging in the harmful act and the harm that he causes. In some contexts, however, liability is found without regard for the particular circumstances of the case. For example, fines for violating regulatory standards often are exacted without inquiring into the specific facts of the violation. (Liability presumably is imposed because the average harm to victims is sufficiently high in relation to the average gain of injurers.) When the assessment of liability is not case specific, it is as if individuals engaging in the harmful act are strictly liable for the harm. Our analysis of the strict liability rule then is more applicable.

(h) Finally, we did not take into account the costs of imposing monetary sanctions. Such costs often are substantial. For example, in non-auto tort litigation, nearly a dollar of legal fees and related expenses is incurred for every dollar of liability borne by the defendant (Hensler et al., 1987: 25–29). The existence of such costs makes lower levels of liability more appealing, other things being equal. This suggests that a modified form of gain-based liability might be superior to harm-based liability under the negligence rule. Specifically, suppose that the level of liability is set equal to the injurer's gain plus an additional amount sufficient to ensure that deterrence will occur with a high probability even if the gain is underestimated. By design, this variation of gain-based liability will not suffer significantly from the problem of underdeterrence that characterizes the gain-based measure we analyzed. Moreover, presuming that the resulting level of liability is less than the harm, this alternative will generate lower administrative costs than harm-based liability.

Appendix

This appendix proves the results stated in Section 3.2 regarding the sense in which harm-based liability is superior to gain-based liability when both gain and harm are observed with error and the errors are anticipated.

Recall that γ_M is the maximum error that can occur in observing gain and η_M is the maximum error that can occur in observing harm.

It was shown in Section 3.2 that when only gain is observed with error—in which case $\eta_M = 0$—harm-based liability is superior to gain-based liability. It is obvious that as $\eta_M \to 0$, the outcome under harm-based liability approaches the outcome when $\eta_M = 0$. It follows that if η_M is positive but sufficiently small, harm-based liability also dominates gain-based liability.

To explain why gain-based liability does not necessarily become superior to harm-based liability even as $\gamma_M \rightarrow 0$, assume that, for all positive γ_M, the probability that the error regarding gain is negative is at least k for some positive k. (This is a weak assumption and would be satisfied, for instance, by any symmetric distribution of error, in which case $k = .5$.) Then, no matter how small γ_M is (provided it is positive), under gain-based liability the likelihood of the party engaging in the act is at least k for all g, and in particular, for $g < h$. It follows that under gain-based liability, the social loss—the deviation in social welfare from the first-best outcome—is bounded away from zero when aggregated over the situations in which negligence is found.[20] Thus, even if γ_M is very small, the social loss under gain-based liability may exceed the social loss under harm-based liability.

The analysis under the strict liability rule is essentially the same as that under the negligence rule.

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20. There also is a social loss in situations in which negligence is not found. But because the measure of liability is immaterial when negligence is not found, this social loss is the same under both measures. Hence, only the social loss in situations in which negligence is found is relevant to the comparison of the two measures.