Proportionality's Lower Bound

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Abstract
Many philosophers have raised difficulties for any attempt to proportion punishment severity to crime seriousness. One reason for this may be that offering a full theory of proportionality is simply too ambitious. I suggest a more modest project: setting a lower bound on proportionate punishment. That is, I suggest a metric to measure when punishment is not disproportionately severe. I claim that punishment is not disproportionately severe if it imposes costs on a criminal wrongdoer which are no greater than the costs which they intentionally caused to others. I flesh out the implications of this *Lower bound* by discussing how to measure the costs of crime. Methodologically, I claim that different costs should be compared by considering preferences. Substantively, I claim that many proportionality judgements undercount the costs of crime by focusing only on the marginal and not the average cost. I suggest that we may hold defendants causally responsible for their contribution to the costs of that type of crime.

Proportionality leads a double life. Criminal law theorists have noted a range of severe difficulties for any attempt to proportion punishment severity to crime seriousness. It requires selecting a common metric of gravity across all crimes and punishments. This metric must offer both relative and absolute proportionality judgements. No-one claims to have resolved these difficulties. And yet, despite this, many sentencing codes purport to make such proportionality judgements with little apparent difficulty. In practice, almost all agree that murder is more serious than robbery, which in turn is more serious than petty theft. Setting a relative scale of gravity has not proven controversial. There's less consensus as to how to anchor this scale to

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absolute figures. But many sentencing codes have been enacted without too much dissent. What explains the mismatch between this practical ease and those theoretical difficulties? The answer, I think, is that criminal law theorists are ambitious. They want to uncover a full theory of proportionality which can *explain* these proportionality judgements (or explain why they are mistaken).[1]

Unfortunately, no full theory has resolved those theoretical difficulties. I will not propose another full theory of proportionality. Instead, I'll start with obvious and uncontroversial proportionality judgements, and then work up to a wider principle from there. This is easier said than done. Only a small range of punishments are precisely proportionate, whereas everything else is disproportionate. So, I will only offer *approximate* judgements.[2] In practice, most theorists are concerned with disproportionately severe punishments, not those that are disproportionately lenient. So, I will only consider cases where some punishment is obviously *not disproportionately severe.* (Throughout, this is what I mean by 'proportionate'). Within these limitations, I'll generalise from uncontroversial cases to reach a *lower bound* for proportionate punishment. That is the aim of Sect. 1.

This lower bound will not apply to every potential punishment, from parental discipline through to international sanctions. That would be too ambitious. Instead, I'll limit my attention only to punishments imposed in response to criminal wrongs committed without any defence.[3] (I'll mention other limitations in Sect. 2).

In the final sections, I'll flesh out what this lower bound implies in practice.

In addition to avoiding a full theory of proportionality, I also want to avoid reliance on any particular theory of (the justification for) punishment. I want to start with an *ecumenically* uncontroversial case of proportionate punishment. This requires some defending. Isn't it true that whether some punishment is proportionate to a crime depends on the underlying theory of punishment at work?[4] If punishment aims to impose deserved suffering on the offender, then it should inflict a proportionate amount of suffering. By contrast, if punishment aims to deter future potential wrongdoers, then it is proportionate insofar as it causes the right amount of deterrence. These metrics conflict. Hence: proportionality judgements cannot be neutral as between different theories of punishment.[5] That's the concern. But there are two

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[1] Almost all of the contributors to this volume and an earlier edited collection raise significant challenges with proportionality judgements. See Michael Tonry (ed.), *Of One-Eyed and Toothless Miscreants: Making the Punishment Fit the Crime* (Oxford: Oxford University Press, 2020).

[2] I take it that proportionality judgements will be approximate due to epistemic limitations. Some claim a stronger view, in which such judgements only specify a proportionate range. See Göran Duus-Otterström, "Weighing Relative and Absolute Proportionality" in Tonry (n 1), pp. 32 and 47.

[3] More fully, I assume that each crime is a justifiably criminalised culpable wrong.

[4] This is suggested by Matt Matravers, "The Place of Proportionality in Penal Theory" in Tonry (n 1).

[5] On the view sketched, proportionality judgements are *outputs* of a theory of punishment. But on some views, they may be *inputs*. Perhaps the most popular theory of punishment is side-constrained instrumentalism. Such a view may require that punishment (a) serves some instrumental good, but (b) may not be disproportionately severe. If (b) is not to collapse into (a), then this proportionality judgement must be independent of those instrumental goods. But even here the shape of the theory may drive the content of the proportionality judgement. It will be quite different from a purely instrumental proportionality judgement, for example.

ways to remain ecumenical. Either a proportionality judgement is favoured by *all* theories of punishment, or else it is *more fundamental* than those theories of punishment. I will suggest that at least one of these explanations is true of my uncontroversial case of proportionate punishment.

1 Lower Bound

Consider:

   Theft: D intentionally steals £100 from C

Some punishments are obviously and uncontroversially disproportionate to the theft of £100. A death sentence is disproportionate.[6] Unfortunately, this conclusion is not very useful as a guide to real-world cases.[7] We are looking for a conclusion that is both obvious and potentially useful. Consider:

   Restitution: It is not disproportionate to require D to return the £100[8]

This conclusion offers modest guidance for real cases. It sets a bound that is not wholly removed from the criminal fines available in many jurisdictions.

   This judgement should appeal to all stripes of punishment theorist. Restitutionary theories should be on board, for obvious reasons. Consequentialists will follow suit: insofar as any punishments serve good ends, merely stripping criminal gains must count for the incentive effects alone. (Criminals may be poorer than their victims, and so benefit from increasing marginal utility. But incentivising negative-sum transactions cannot be the best solution). Retributivists will accept that D deserves at least that much suffering. True, D may have a benign motive, or else suffered too much in other areas of life, such that depriving him of that £100 compounds his aggregately undeserved suffering. But the criminal law cannot hope to give everyone what they deserve in full generality, and it would be an implausible retributivism which demanded it.[9] Pluralists can tell the same story. Either D deserves that punishment, and it is not retributively disproportionate, or else D does not deserve that punishment, yet it is proportionate according to other dimensions of the justification

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[6] We can imagine worlds in which littering, or the failure to punish littering, would result in extremely bad outcomes which might render such drastic measures proportionate. But I consider the real world.

[7] In attempting to offer practically useful proportionality judgements, I follow eg Andrew von Hirsch and Nils Jareborg, "Gauging Criminal Harm: A Living-Standard Analysis", 11 *Oxford Journal of Legal Studies* (1991): pp. 11–12.

[8] Throughout I assume neither duress nor necessity. There is the deeper question of the justification of private property, especially under conditions of historical injustice. But I assume that the criminal law should leave aside such issues.

[9] In this symposium Göran Duus-Otterström offers an ambitious reply: that desert is indexed to a particular contextual reference class. My answer is less ambitious. Regardless of whether desert itself is localised, the criminal law must treat it as if it were, as the alternative would be completely impracticable. For critics of this localisation, see Victor Tadros, *The Ends of Harm: The Moral Foundations of Criminal Law* (Oxford: Oxford University Press 2011) p. 68ff and Adam Kolber, "The Time-Frame Challenge to Retributivism" in Tonry (n 1).

of punishment.[10] If any theory of punishment disagrees, then I take that not as a mark against *Restitution*, but instead as a mark against such a theory. The strength of the intuition supporting *Restitution* is at least as strong as any intuition on which such a theory might rest.

Restitution requires that D return the stolen money. This conclusion is not frustrated if D happened to mix the stolen notes with his own notes, with no means of distinguishing the two. D must return the *value* of £100, not the very same notes. Nor is the conclusion frustrated if D happened to have spent (or lost) the money. He remains obliged to repay that value, even if this requires that he earn it first.[11] If we accept *Restitution*, then we should accept:

> *Compensation*: It is not disproportionate to require D to repay the value of £100

We might doubt whether *Compensation* amounts to punishment.[12] Compensating is usually what happens before punishment kicks in. Compensation judgements justify the loss to D in part by balancing it with the gain to C. By contrast, punishment judgements focus only on the loss to D. True, many theories of punishment justify punishment in virtue of the benefits it provides to others. But most theories set certain side-constraints on the pursuit of those ends. Proportionality judgements are one such constraint. Third-party gains may be relevant to the all-things-considered permissibility or justification for punishment. But proportionality judgements are more restricted. They focus on the detriment to D and not the gain C. So, if we accept *Compensation*, then we should accept:

> *Disgorgement*: It is not disproportionate to deprive D of the value of £100

Disgorgement is supported by the following cases. Imagine that C promptly dies alone and intestate, and thus cannot be compensated. This may extinguish D's relational duty to compensate C. But it remains permissible to confiscate D's stolen money. Or imagine that C would immediately burn the £100 once compensated. Again, the absence of gain for C does not make confiscation inapt. It is not disproportionate to deprive D of the stolen money.

Disgorgement applies to *Theft*. But we can generalise the conclusion in three ways. First, £100 is arbitrary. It is not disproportionate to deprive D of *whatever value* D stole from C. Second, per above, it makes no difference whether D retained the gain from his crime. It is clearer, then, not to talk of 'depriving' D of value, but rather of *imposing costs* on D. Third, the costs which defendants cause victims

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[10] This kind of move is readily available to those with a *deflationary* view of proportionality's import, such as Douglas Husak, "The Metric of Punishment Severity" in Tonry (n 1) pp: 120–123.

[11] Assuming that doing so is not dangerous, etc. Does this reasoning lead us to the debtor's prison? Yes and no. No: I've said nothing about responding to non-criminally incurred debts. Yes: if D cannot (nor will not) repay his criminally-incurred debts, then this might justify further coercive measures to force him to do so, possibly including carceral sentences. But if this is a problem, then so is our practice of putting thieves in *regular* prison. The view according to which criminals incur obligations to their victims is in part inspired by Tadros's Duty View: Tadros, *The Ends of Harm* (n 9) ch 12.

[12] Thanks to Kim Ferzan for this point.

are not confined to theft. The same conclusion applies to any harms intentionally inflicted. Thus generalised, if we accept *Disgorgement*, then we should accept the following metric of punishment proportionality:

> *Lower bound*: Punishment is not disproportionate if it imposes costs on D no greater than the costs which D intentionally caused to others.

2 Clarifying *Lower Bound*

Lower bound is a limited thesis. It is not a claim about what amount of punishment is optimal or positively proportionate. It merely states a bound at which punishment is *not* disproportionately severe. It applies only to crimes involving intentionally inflicted costs. It says nothing about costs which do not eventuate, nor those not intended. This is deliberate. It is controversial how exactly to weigh culpability with harm.[13] A full theory of proportionality must grapple with such cases. But I am not attempting to offer a full theory of proportionality. I focus only on the maximally uncontroversial case of legitimate punishments: punishments imposed in response to intentionally inflicted costs.[14]

Even thus limited, the generalisation from *Disgorgement* to *Lower bound* faces difficulties. The cost imposed by D in *Theft* was denominated in money. *Disgorgement* used the same currency to identify a proportionate punishment. But most crimes and punishments lack this symmetry as to the kind of costs imposed. To be useful, *Lower bound* must offer a common currency of cost.[15]

Some doubt that there can be a common currency. Gardner claims that criminal harms are incomparable with harms imposed by punishment.[16] But, if true, this

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[13] Jesper Ryberg calls these the challenges of *specifying* harms (eg whether to include *risks*, or diffuse costs), and *weighing* harm and culpability: Jesper Ryberg, "Proportionality and the Seriousness of Crimes" in Tonry (n 1).

[14] A simple extension would be to risk-weight the costs of crime and multiply by variable culpability quotient. By default, say 1 for intended harms, and 0.7 for reckless crimes, subject to further modification for relevant culpability-affecting factors. In *Theft*, the equation is £100 harm*1 probability*1 culpability, for £100 of non-disproportionate punishment. In *Attempted Theft*, the equation might be £100*0.5*1, for £50 punishment. In *Reckless Damage*, it might be £100*1*0.7 for £70. Obviously this is crude, and subject to various potential objections. (Several are considered by Ryberg (ibid)). But the limited context of *Lower bound* seems to me insulated from many of these objections.

[15] We could specify punishments in the same currency as the crime: an eye for an eye. *Lower bound* would bless these as proportionate. But it does not follow that such punishments are *permissible*, all things considered. Such punishments may be impermissible for reasons of mercy, humanity, etc. Even Kant, who thought it mandatory to kill killers, drew a line at torturing torturers. Jeremy Waldron once argued for more creative punishments to match crime to punishment. But he emphasised that *lex talionis* requires punishments *similar to* the crime, not identical. What counts as similar then depends on a difficult evaluation of the morally salient features of the crime. Jeremy Waldron, "Lex Talionis" 34 *Arizona Law Review* (1992) p. 25.

[16] John Gardner, *Offences and Defences* (Oxford: Oxford University Press 2007) p. 234. (Gardner says incommensurable, but I follow Ruth Chang's terminology of comparability, for reasons explained by Nien-hê Hsieh, "Incommensurable Values" in Edward N Zalta (ed.), *Stanford Encyclopedia of Philosophy* (Spring 2016) §1.2). Gardner further objected to weighing *wrongs*. Even *lex talionis* cannot make punishment's harms perfectly mirror criminal harms in all ways. The deontic feature of *being wrong* must distinguish crimes from justified punishment, a point made by Waldron (ibid) pp. 33–34.

implies that the (many) sentencing codes purporting to implement proportionate punishment are simply confused. Moreover, a strong version of this thesis would reject even the most obvious proportionality judgements, such as that death is disproportionate to littering.[17] That seems implausible.

How should we compare different kinds of costs? von Hirsch and Jareborg proposed that criminal harms be compared according to the degree to which those harms impact the average person's capacity to attain certain living standards. That, in turn, was to be judged in four ranks, across four interests: physical, material, dignity, and privacy.[18] As Bagaric and McConvill fairly point out, however, this specification and categorisation of relevant interests may be idiosyncratic.[19] Bagaric and McConvill therefore proposed a more scientific common currency: *happiness*, as measured by empirical psychology.[20]

Both proposals face a dilemma. Imagine two facts. First: their proposed harm rankings rate harm A as worse than harm B. Second: on average, people would prefer to suffer harm A rather than harm B. Here's the dilemma. If the proposer insists that harm A is worse, then this seems mistaken. People do not prefer to suffer worse harms.[21] But if the proposer accepts that harm B is worse, then their proposed ranking is inferior to a (simpler) preference-based ranking.[22] *Preferences* offer the most straightforward way to compare different kinds of cost. The lesser cost between a £100 fine and a day in prison is simply whatever D would prefer.

Still: *whose* preferences? Imagine that D intentionally breaks C's nose. C may value her nose not being broken at £100. By contrast, D might value his nose at £1000. Which is the relevant metric? A related difficulty is often raised as an objection to retributive theories of proportionality. On retributive theories, deserved suffering is the common currency of punishment severity.[23] But ensuring that equal

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[17] In extreme cases we have no difficulty comparing severity (death for littering), but in closer cases our intuitions overlap (prison for assault). This implies that the alleged incomparability is better explained by vagueness. This, indeed, is how some philosophers explain all apparently incomparable value judgements. See Hsieh (ibid) §2.1.

[18] von Hirsch and Jareborg (n 7).

[19] For example, von Hirsch and Jareborg define their most serious rank as those harms which implicate 'subsistence', and their least serious rank as those harm which implicate only our 'enhanced well-being'. Does this imply that thieving a £1 loaf is worse than stealing £1000 loafers? Presumably not: their examples of subsistence-affecting harms are murder, maiming, and being made destitute. But even terrible maimings do not necessarily risk life, and thus may apparently fall outwith their top tier.

[20] Mirko Bagaric and James McConvill, "Giving Content to the Principle of Proportionality: Happiness and Pain as the Universal Currency for Matching Offence Seriousness and Penalty Severity" 69 *The Journal of Criminal Law* (2005) p. 50.

[21] Bagaric and McConvill question whether it is even coherent to talk of preferring less happiness: 'It normally leads to a suspicion that the agent is either confused, irrational or disingenuous' (ibid) p. 63. But counterexamples abound. One might well prefer to suffer and struggle for meaning than to sit in contended idleness. Friedrich Nietzsche is the obvious philosophical enemy of happiness as intrinsically valuable. See, eg, Brian Leiter, *Nietzsche on Morality* (London: Routledge, 2002) pp. 129–134.

[22] Just as Bagaric and McConvill emphasise the large happiness literature in empirical psychology, we could emphasise the large preferences literature in empirical economics. Focusing on preferences also resolves von Hirsch and Jareborg's difficulty with consensual harms: von Hirsch and Jareborg (n 7) pp. 33–34.

[23] But not (necessarily) crime seriousness.

suffering is imposed for equal crimes leads to a dilemma. Equal sentences may produce differential suffering. A small prison cell makes Tall suffer more than Short. That is objectionable. On the other hand, equal suffering may require differential sentences. As Socialite suffers more from imprisonment than Hermit, it follows that Hermit requires a much longer sentence to be caused equal suffering. That too is objectionable. We reach an impasse.[24] Some reject retributive theories of proportionality for this reason.[25] And these objections seemingly apply with equal force to my claim that we should weigh the costs of crime and punishments according to preferences, for preferences are no less variable than propensity to suffer.

The standard solution to this dilemma is to standardise. We focus on *average* suffering, average living standards, average happiness, or average preferences.[26] Ryberg points out that standardising is a distinctly second-rate solution for retributivists. They want to proportion punishment severity to the particular defendant's desert, not the average defendant's desert.[27] But there is simply no alternative but to standardise.[28] I suggested above that what D deserves to suffer will depend on the severity of his crime, and the severity of his crime will in part depend on the costs he caused to others. Regardless of the metric chosen, there is no way to compare costs to C against costs to D without standardisation. But this is not unique to counting costs, nor to a preference-based currency. The infinite variety of pre-legal wrongs are standardised by crime definitions: theft, robbery, murder, and so on. Every shade of culpability is standardised by mens rea categories: intent, recklessness, negligence, and so on. It should come as no surprise, and offer no objection, that the same holds when it comes to identifying the costs of crime.[29] We should consider average preferences. This does not entail that the idiosyncratic costs to particular victims are irrelevant. The best way to implement this standardisation may be to set the average costs of that type of crime as a starting point, but to allow further evidence as to any deviations in a particular case. If D harms C knowing that C will be harmed more than the average victim, then D intends that additional harm to C, and *Lower bound* says that more-than-average punishment is not disproportionate.[30] But, absent that information, we must settle for the average costs of that type of crime.

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[24] Fines which scale to a defendant's means offer a neat compromise and are lauded as such by Douglas Husak in this volume. But getting the upside of both positions comes with their downsides too. Rich defendants may pay exorbitant fines for minor transgressions, while poor defendants may pay trivial fines for major offenses.

[25] Adam Kolber, "The Subjectivist Critique of Proportionality" in Larry Alexander and Kimberly Kessler Ferzan (eds.), *The Palgrave Handbook of Applied Ethics and Criminal Law* (Palgrave Macmillan, 2019).

[26] Bagaric and McConvill (n 20) claim that determinants of happiness are, in fact, fairly invariant.

[27] Ryberg (n 13).

[28] A point emphasised in Frederick Schauer, *Playing by the Rules* (Oxford: Oxford University Press, 1991).

[29] Sentencing decisions are personalised, but only within broad buckets.

[30] See Sect. 4, below.

The same is true in principle for punishments, though there are powerful reasons to resist accounting for D's characteristics.[31]

This suggests a (mostly) objective currency of cost. That should be unsurprising, for we have already seen such a metric in action. *Restitution* said that D must return the stolen £100. That applied regardless of whether D was rich or poor. It may be that D, being poor, suffers greatly from losing that £100. Perhaps much more than C suffered in losing it. Still, it seems clear that depriving D of that money is not disproportionate. As such, at least some proportionality judgements sound in an objective metric. It does not follow that it is impermissible to make the rich pay *more*. But *Restitution* does set an objective floor of permissible punishment.

I have suggested that preferences offer the most parsimonious metric with which to measure the costs of crime and punishment. This also allows us to draw on the deep economic literature which attempts to measure those costs. This is not to say that measuring these costs is easy. It is not. Preferences may be inchoate and subject to revision. They may be means-ends irrational. Stated preferences may differ from revealed preferences. Different measurement strategies may come to different estimates as to the costs of crime. But the complexity of preferences and their identification reflects the complexities of the subject matter. We should not expect that comparing the very different and very subtle costs of crimes and punishments would be easy. I can offer no expertise in identifying these costs. But, in the next section, I will suggest which *categories* of costs we ought to consider.

3 The Costs of Crime

Lower bound says that punishment is not disproportionate if it imposes costs on D no greater than the costs which D intentionally caused to others. This requires that we know (1) what costs D caused, and (2) of those, which D intended. This section addresses (1).

My claim is that we *undercount* the costs of crime. Most writing on proportionality focuses on the *direct* cost of crime. In *Theft*, that was £100. But this is far from the whole cost. Sometimes the *marginal* cost is noted. D caused C not just the loss of £100, but also anguish. And not just to C, but most likely her loved ones too.[32] D caused various criminal justice costs: the costs of police, prosecutors, lawyers, judges; their administrators, buildings, equipment, and travel. These are sometimes, if not always, recognised. But very rarely mentioned is the *average* cost of crime.[33] Many people take precautionary measures against being victimised, measures like taking taxis and buying security devices. These costs are not taken in response to

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[31] In addition to the value of (perceived) equality before the law, there are moral hazard considerations, epistemic limitations as to D's personal sensitivity, and so on.

[32] Nozick argued that the anguish caused to third parties are the reason why ex-post 'full' compensation for crimes cannot work. (Though the argument only works assuming transaction costs). Robert Nozick, *Anarchy, State, and Utopia* (Oxford: Blackwell 1974) 65–71.

[33] Erin Kelly is an exception: see n 46, below.

any one criminal, but instead in response to all crime of some type. D causally contributes to the need to take such precautions, and hence to the total cost of crime. Finally, we should count not just out-of-pocket costs, but also *opportunity* costs, like the foregone value of walks at night. Together, these costs will *far* exceed the £100 stolen. Focusing on direct costs *strongly* undercounts the costs of crime.

To get a feel for these costs, consider two cases:

City: In a city, D1 steals C's bike. The police inform C that nothing can be done. The total cost of D1's theft sums to £100.

Village: In a village, nobody locks up their bikes. D2 moves into the village and steals one bike. This causes all the villagers change their habits and buy locks. The total costs of D2's theft sum to £10,000.

Both Ds commit the same crime. In *Village*, we can see the full costs imposed by D's crime. A single thief can force a change of routine for an entire community. In *City*, however, those costs are masked. Regardless of D1's conduct, the *City* folk would have raised their defences to other potential thieves.

Now, it would not be fair to hold D1 responsible for the actions of those other thieves. As von Hirsch and Jareborg put it,

Because a burglar is responsible only for his conduct, it is the harm that his conduct causes...that determines the gravity of the offence (not the totality of harm caused by the acts of all burglars, over whom he has no control).[34]

But it would be fair to hold D1 responsible for his *share* of the total cost caused. Imagine that *City* has five bike thieves operating in the area, and, per *Village*, the threat they pose to bike security forces residents to take costly precautions summing to £10,000. If each steals a bike, they together cause £500 of marginal costs. Together, however, they cause an additional £9500 in precautionary costs. This outcome is overdetermined. But that is no bar to finding causal responsibility. Assuming equal causal responsibility, we may fairly attribute to them their share of the total cost: £2000.[35] That is, we may attribute to them the *average* cost of that type of crime.[36]

My claim is that the focusing on the marginal cost strongly undercounts the average cost of crime. This is borne out by empirical work. A recent paper for the British Home Office estimated various costs of crime. The authors distinguish *consequential* costs from costs incurred in *anticipation* of and *response* to crime.

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[34] von Hirsch and Jareborg (n 7) p. 16. See too p. 33.

[35] The criminal law usually claims that any (more than minimal) causal contribution to a prohibited outcome is sufficient to find that D caused that outcome. This apportionment argument, more familiar from civil law, is more conservative.

[36] An objection: identical crimes ought not to receive wildly different punishments. D1 and D2 committed the same crime. To punish one 5×more than the other is inappropriate. Reply: making the severity of one's punishment determined in part by the contingent actions of others is hardly unknown to the law. Bad driving is punished very differently depending on whether or not a pedestrian walks out in front of the car. The law accounts for consequences. But, regardless of its position on moral luck, these crimes are not identically culpable. The *first* crime of its type is especially objectionable, as evidenced by its outsized role in theology, mythology, and popular morality: consider the Fall, original sin, Pandora's box, or Cain and Abel. At any rate, we may want to rule out large within-crime variation in punishment for rea-

Consequential costs are a reasonable proxy for marginal costs, while anticipation and response costs would be included within the average cost of crime.[37] They estimate that, on average, the consequential cost of vehicle theft is £4670. But the total cost, including anticipation and response measures, exceeds £10,000. For arson, the consequences sum to £3000, but the total cost exceeds £8000.[38] The total unit (average) cost significantly exceeds the consequential (marginal) cost.

Cost of crime estimates face formidable epistemic challenges. The Home Office paper tried to estimate the costs of each crime type in a 'bottom-up' way: identifying various costs incurred due to victimisation, prevention, and in response to crime. For example, they estimate the total expenditure on dedicated security products like burglar alarms, then divide that by the estimated number of burglaries. But this does not count, for example, the expenditure on products purchased *in part* for security against crime, like SUVs or taxi services. Nor does it account for the *opportunity* costs of crime: valuable foregone opportunities.

There are ways to estimate these costs. Researchers can ask people how much they are willing to pay to avoid victimisation. More creatively, they can use proxies like house prices to reveal implicit willingness to pay to avoid local crime. These 'top-down' methods often produce estimates between 2 and 5 times greater than 'bottom-up' methods.[39] Consider an example. The Home Office paper estimated the unit cost of domestic burglary as just under £6000. Of this, they noted that household expenditure defending against burglary (eg burglar alarms) cost £320 per burglary.[40] I expect that the average household would happily pay at least this amount to guarantee not being burgled. If I'm right, the real cost of burglary is more like £320 *per household*. And this implies that the true average cost per burglary is closer to £11,000.[41] Using the average cost rather than the marginal cost massively increases the *Lower bound* of proportionate punishment.

Even the most sophisticated causal identification strategies cannot measure the full opportunity costs of crime. That requires not just constructing clever proxies, but also imagining alternative possible worlds. Some opportunity costs are easy to imagine because they were absent in the past. For example, the cost of airport

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Footnote 36 (continued)

sons besides proportionality (eg to maintain an appearance of equal treatment). To repeat, *Lower bound* is not a full theory of punishment.

[37] Strictly speaking, these categories are not coextensive: anticipation and response costs may be specific to the marginal offence, not general offending. But those will be exceptional cases. The main cost of policing, for example, is not the marginal costs of fuel, documentation, etc., but the fixed costs of salaries, buildings, etc.

[38] Matthew Heeks et al., "The economic and social costs of crime" (2nd edn, Home Office Research Report 99, July 2018) Table E1. In most crimes the consequential cost was a higher percentage of the total cost, but even homicide was only 70%.

[39] Mark Cohen and Roger Bowles, "Estimating Costs of Crime" in Alex R. Piquero and David Weisburd (eds.), *Handbook of Quantitative Criminology* (New York: Springer, 2010) p. 158, citing Mark Cohen et al., "Willingness-to-pay for crime control programs" 42 *Criminology* (2004) p. 86.

[40] Heeks et al. (n 38).

[41] (24 million England and Wales households)*£320)/695,000 domestic burglaries. The latter figure is from Heeks et al. (n 38) Table E1.

security checks. (Quick estimate: at least $22bn per year in the US alone).[42] Other opportunity costs are easy to imagine because they've only recently been mitigated. Until recently, it was nigh unthinkable to transact at arms-length with, pay for chauffeuring from, or stay in the home of individual strangers. The unthinkable is now routine, thanks to PayPal, Uber, Airbnb, and other platforms. A major component of the success of these companies lay in assuring people that they would not be scammed or murdered.[43] There was never any insuperable barrier to mail-order transacting or paying strangers for a lift or a room. But would-be scammers and murderers prevented that value from being realised, until these companies could resolve the assurance problem. Their multi-billion valuations and massive consumer surplus are an indicium of the previously-unrealised opportunity cost of such crimes.

A good statistician may be able to estimate the crime-avoiding component of the value such companies generate. But no statistician can measure the value of the companies which *have not* been created, or the rewards to be reaped from solving remaining assurance problems. The hardest opportunity costs to imagine are those we have always and still do suffer. They go *unthought*. But they are no less costs of crime, and quite possibly the largest component of that cost. Almost every crime contributes, in some way, to causing these opportunity costs.

Estimating a particular defendant's contribution to causing these (already hard-to-estimate) costs will be extremely difficult. We must work out the number of offenders, and whether their crime was more or less costly than average. We will have to disaggregate the combined effect of different crime types, such as murder and robbery, to work out their relative contribution to the cost of (say) fear and precautions against violence. And we will have to work out the temporal and spatial extent of these causal contributions. In practice, these will be very rough estimates, subject to more detailed evidence. *Lower bound* cannot offer precision.

A defendant may claim that these costs are too causally remote from their crime. But, with a little imagination, these costs are certainly foreseeable. That meets the usual lawyer's test for causal proximity. Alternatively, D may claim that many of these costs are incurred via the free and deliberate actions of others, actions often said to break the causal chain between D and further consequences. But this rule does not apply to officials reasonably responding to crime, nor to reasonable reactions by victims.[44] All of the costs I have mentioned plausibly fall into those

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[42] The US Bureau of Transportation Statistics reported 1.1bn airline passengers (domestic and international) travelling through the US in 2019 (BTS 14–20). Assuming an hour lost per passenger, valued at the median US wage of $20, gives $22bn. This does not account for the costs of hassle nor enforcement. It does not automatically follow that the terrorists who spurred these measures are causally responsible for them; there is a live question as to whether such measures were reasonable.

[43] Histories of the early days of PayPal emphasise that its survival, and success, depended on stemming massive quantities of fraud.

[44] *Pagett* (1983) 76 Cr App R 279. Questions of legal causation ask whether D caused some prohibited outcome for the purposes of attributing that outcome to him. But that is not strictly our question. We are asking whether, *once* D has caused some prohibited outcome, *then* may we attribute to him some *further* consequences? In answering the latter question, we might plausibly accept more inclusive criteria of causal attributability.

categories. It seems fair to hold defendants causally responsible for their contribution to all of these costs of crime.

4 Culpable Costs

I have suggested, however roughly, how we might measure the costs of crime. *Lower bound* then asks us to consider which of those costs D intended.

No defendant sets out to cause all of the costs mentioned above. But we do not only intend our ultimate ends. In law, we are said to (indirectly) intend any known consequences of our intentional actions.[45] In *Theft*, D does not intend to cause harm of merely £100. He also knows, and so intends, to cause C to suffer further consequences. If D knew of his entire contribution to the average cost of that type of crime, then *Lower bound* says that punishments which match those costs are not disproportionate.[46]

In practice, it will be hard to prove exactly what D knows. But a legal system could quite easily *advertise* the average cost of various types of crime, and thereby *make it the case* that defendants must know, and so intend, to cause those costs when offending. (Indeed, a sentencing scale partly fulfils this function by signalling the severity of each crime).

Because *Lower bound* is intended to be maximally uncontroversial, I limited its scope to intention and knowledge. But it could be modified to weaken that assumption and to stretch to recklessly caused costs. That modified version of *Lower bound* would make it easier yet to attribute to D the average cost of that type of crime.

5 What Follows?

If the costs of crime are usually undercounted, then *Lower bound*, which indexes to those costs, may bless as proportionate some punishments which are intuitively quite severe. The Home Office paper suggests that the average personal theft is of goods valued at £180. For this, we may intuitively think that anything much worse than a small fine would be too harsh. English sentencing law agrees. For petty theft below £500, without threatening the victim, offenders are fined 125% to 175% of their weekly income (and must disgorge any additional value of the stolen goods).[47] Assuming that the average petty thief earns about half the UK average (so, £250)

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[45] English law phrases this in terms of foreseen virtual certainties: *Woollin* [1999] 1 AC 82.

[46] Erin Kelly claims that an '*upper* bound' for a 'proper penalty' is scaled to the 'typical harm caused by the sort of crime' D committed sets. If 'scaled to' means 'set by', then this seems wrong. If D deliberately commits a crime much worse than average, on what basis ought his liability to punishment to be capped to a level appropriate to the much more benign average? Erin Kelly, *The Limits of Blame: Rethinking Punishment and Responsibility* (Cambridge, Massachusetts: Harvard University Press, 2018) p. 141.

[47] The Sentencing Council's guidelines for theft grade this as 'medium culpability' and low value stolen.

that is a range of roughly £310 to £440.[48] But the Home Office report estimates the full average cost of theft as £1380. And, given that this is an underestimate, the total cost may easily be several times higher. *Lower bound* would therefore accept fines many times higher than at current levels.

Of course, as I have emphasised throughout, *Lower bound* does not attempt to offer a full theory of proportionality, still less a full theory of permissible punishment. There may be many excellent reasons why fines of that level are a bad idea. Most obviously, many criminals simply cannot pay them.[49] (Indeed, more serious offences quickly result in incarceration as a result). Even if defendants could pay such amounts, there may be good moral and prudential reasons not to further immiserate poor criminals. But *Lower bound* does help us to structure our thinking here. Such objections to more severe sentences should not sound as claims about disproportionality. Rather, they should sound as claims about the instrumental costs and benefits of different punishment regimes.

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[48] Figures from the Office for National Statistics.

[49] Richard Posner suggests that the reason why we have criminal law rather than simply relying on tort law is to get around defendants' insolvency limit. Richard Posner, "An Economic Theory of the Criminal Law" 85(6) *Columbia Law Review* (1985) p. 1193.