



## Two caricatures, II: Leibniz's best world

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**Abstract.** Leibniz's best-of-all-possible worlds solution to the problem of evil is defended. Enlightenment misrepresentations are removed. The apparent obviousness of the possibility of better worlds is undermined by the much better understanding achieved in modern mathematical sciences of how global structure constrains local possibilities. It is argued that alternative views, especially standard materialism, fail to make sense of the problem of evil, by implying that evil does not matter, absolutely speaking. Finally, it is shown how ordinary religious thinking incorporates the essentials of Leibniz's view.

When Leibniz maintained that the solution to the problem of evil was that this was the Best of All Possible Worlds, the almost universal reaction was that his theory combined the lack of rationality exhibited by Pascal's Wager with a repulsive failure of compassion possible only in an unfeeling Enlightenment mathematician. It was argued in an earlier article<sup>1</sup> that Pascal's Wager had been widely caricatured, that it had merit, and that it was a central part of thinking about faith. The present article argues that the same is true of Leibniz's best-world theory.

Where Pascal's argument motivates the first step in the journey to faith, Leibniz's argument comes into play at the last. We should imagine the seeker having examined the claims of religion with a suitable combination of sympathy and scepticism, and found them of some force. Perhaps he has found the traditional arguments for the existence of God satisfying (assuming they have been cleared of the barnacles of travesty, accreted over the centuries through the untiring efforts of the Enlightened). Or some particular religion has seemed a sound candidate for an argument to the best explanation, being a coherent explanation of all facts (including moral ones) superior to alternatives. Or perhaps the logical tension has just become too great between a materialistic view of the world which implies that humans do not matter, and moral statements, which imply they do. Or maybe God's grace has acted directly in the manner Pascal promised. The last hurdle is then the problem of evil.

Leibniz's *Theodicy* offers a simple solution to the problem of evil: that this is the best of all possible worlds.

Our view of Leibniz's suggestion is impeded by the famous caricature of it in Voltaire's *Candide*. So it is necessary first to distinguish caricature from reality.

**Leibniz caricatured:**

If we but knew it, everything is marvellously arranged for our good. The world is ordered for our felicity, pigs are made to be eaten, noses are designed to support eyeglasses.<sup>2</sup> Little difficulties are obstacles for us to overcome, exercises for our virtue: how could there be courage without dangers to overcome? Good often comes out of tragedy, and triumph out of adversity. All is rosy, in the best of all possible worlds.

**What Leibniz said:**

The world may not be good, absolutely speaking. But making it better is much harder than it appears. The limitation of our intellects makes it seem to us easy to imagine this or that thing being better, without our understanding the necessary interconnections between things which make it impossible – logically or mathematically impossible – to realise all these improvements at once.

Though humour is hardly appropriate to the subject matter, the difference between the caricature and the real Leibniz is well captured by the old joke, “An optimist is someone who thinks this is the best of all possible worlds, and a pessimist thinks the same.”

Leibniz's solution would certainly be an attractive one, if it could be made to work. It provides God with a perfect excuse for the evil left in the world: the absolute impossibility of anything better. It is in tune with the obvious thought: “If God is doing his best, then this must be the best he can do.” Even if, as Islamo-Calvinist thinking has it, God cannot strictly speaking be under obligation, surely there is something ridiculous, if not demeaning, in the idea that he tosses off a creation less than the best he can do. Indeed, the more praise heaped on him, and the more emphasis placed on his transcendence, the more unexpected would be a defective creation from his hand.

Leibniz's theory is also attractive for its quick disposal of the alleged incompatibility of the triad of propositions: God is good; God is all-powerful; Evil exists. Since in the Leibnizian scenario all three are true, they cannot be incompatible (if, that is, the Leibnizian scenario is a possible one).<sup>3</sup>

The main reason why Leibniz's solution has not proved popular is, plainly, that it seems simply obvious that the world could be better than it is. Anyone can suggest improvements. Some think that the whole point of religion and ethical endeavour is to *make* the world better, which would seem to be impossible if it were already as good as it could be. Indeed, the crux of

the problem of evil is that there are evils, that is, things whose removal is desirable. So why should God not remove them, resulting in a better world? Any defence of Leibniz's solution must concentrate on this difficulty.

### **How credible is it that the world could not be better?**

There are many reasons for being sceptical about our initial apparent facility in imagining a better world. Some of them have been advanced in the context of the problem of evil, some not. Their effect is cumulative, in that the more reasons for doubting the deliverances of unreflective imagination, the greater the effect. These reasons come in two main kinds. In the first kind are ones that do not concern good and evil as such, but simply recall the existence, familiar especially to mathematicians, of necessary connections between local and global structure: the ways in which it is easy for things to happen here or there, but impossible for them to happen together. The second kind of reasons concerns certain long-known considerations that suggest necessary linkages between some goods and some evils – that some goods cannot possibly exist without concomitant evils.

A classic example of the difficulties of achieving a global best result because of purely mathematical difficulties is tuning and temperament in music. As soon as harmony – the playing of two notes at once – is introduced into music, the problem arises of what choice should be made for the pitches on instruments of the notes between one octave and the next. As is well-known, notes sound harmonious or consonant if there is a simple integer relation between the frequencies of their sound waves. Thus two notes an octave apart have a ratio of 2:1; the next simplest ratio is 3:2, which is called the fifth and is the next most consonant in sound. To the ear, a very slight mistuning is acceptable, but ratios as close to 1 as 81:80 sound severely dissonant. If one tries to fill in the octave with a small number of notes (such as twelve, the standard number of notes between octaves on a piano), with allowance made for the fifth, the major third (5:4), and the major sixth (5:3), it turns out to be mathematically impossible to have them all exactly tuned. Some compromise has to be made, and the normal modern choice has been the system of “equal temperament”, which makes each pair of consecutive notes on the piano differ by an equal amount, one twelfth of an octave (that is, the ratio of their frequencies is always  $\sqrt[12]{2}:1$ ). This means that none of the main ratios between notes is exactly correct, except for the octave itself. The major sixth in particular is substantially too sharp, a problem particularly evident on instruments of purer tone like the organ.<sup>4</sup> Some compromises are better than others, but there is no way to avoid making *some* compromise.

Let us take another example. It is impossible to build a circular or nearly-circular staircase that goes up all the way round and ends at its starting point. (The famous Escher drawings which seem to show this kind of thing happening are thus impossible to realise in three dimensions.) The impossibility is not just empirical, since no change in the laws of nature would make such a staircase possible. There is a purely mathematical fact underlying this impossibility, namely, that there is no continuous function from the circle to the real numbers which is increasing all the way round. (The proposition has therefore nothing to do with the Euclideanness or otherwise of space; in any space where ‘up’ makes sense, the statement is true).<sup>5</sup>

There are many similar examples in the “formal sciences”, the disciplines like operations research, control theory, statistics and theoretical computer science that have emerged in the last sixty years at the interface between mathematics and engineering.<sup>6</sup> There are many examples in these fields of the restrictions that mathematical truths impose on any possible design of real objects, such as the results on the limits of computer power proved in computational complexity theory, and the results in Shannon’s information theory on the limits on information transmission in communication channels. The flavour of these results is easily visible in the first investigation of this kind, Euler’s eighteenth-century paper on the bridges of Königsberg. The citizens of Königsberg noticed that it seemed to be impossible to walk across all seven bridges over the River Pregel, without walking across at least one of them twice:

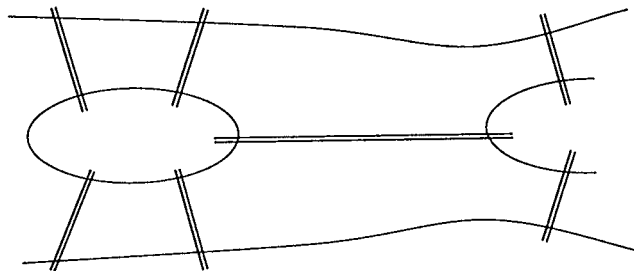


Figure 1. The Königsberg bridges

Euler proved their conjecture correct, using the simple idea that if one enters and leaves a land area, one uses up two of the bridges. Thus, all the land areas (except the two chosen for the start and finish) must have an even number of bridges leaving them, or there will necessarily be bridges left over, no matter what route is chosen.<sup>7</sup> But in the example, all four land areas have an odd number of bridges leaving them, so a path going across all the bridges exactly once is impossible. No idealisation of the situation is

needed to obtain this mathematical result; Euler's proof applies directly to the system of islands and bridges. Although God could make bridges, islands or citizens differently, he could not make them the same while at the same time making it possible for the citizens to walk over all the bridges once and once only.

Similar considerations are familiar in economics, in the impossibility of fulfilling certain kinds of demands. The supply of material goods like food can be increased to meet demand, but no amount of increased wealth can permit everyone to enjoy the privileges of the rich of the 1920s, such as domestic servants, spacious grounds, easy access to positions of power, and driving on traffic-free roads. Those items are "positional goods" and are of their nature in short supply: the possession of them by one person necessarily restricts their possession by others, in the same way as one person's being President means another person's not.<sup>8</sup>

The point of the wide range of examples is that there is more to Leibniz's suggestion than the mere possibility that "for all we know" there may be reasons justifying any particular evil. Global mathematical constraints on local possibilities are ubiquitous in the modern mathematical sciences (though little appreciated outside them).

With that background, we can turn to some more special considerations that have been advanced in the debate about the problem of evil, such as the "free-will defence". These all argue that certain human goods or virtues are impossible without some attendant evils. It would be possible to attempt a solution to the problem of evil by putting together all such considerations that have been thought of.<sup>9</sup> There are many difficulties in the face of that project, involving the balancing of likely good and bad effects in conditions where knowledge is lacking. That is not Leibniz's plan; for him, the external reasons for believing in a good God create a presumption that the observed world is the best possible; particular necessary connections between goods and evils are simply examples of the total interconnections. It is important that the conclusion that there are necessary interconnections between goods and evils may survive, even if these lines of reasoning, individually or in total, do not give a solution to the problem of evil.

The "free-will defence" argues that many evils are a necessary consequence of granting humans the important good of free will. It is not very useful for actually solving the problem of evil (since it is not applicable to natural evils like earthquakes), but it does well illustrate the necessary connections between goods and evils. The same is true with "obstacle" defences, which point out that certain human virtues like courage cannot be exercised without evils to overcome. It is true that these defences are easily overstated. Ronald Knox's satire is entirely just:

There is no progress in Humanity, without the surmounting of obstacles; thus, we are all now agree'd that *Satan*, far from meaning any harm to our Race when he brought Sin into the World, was most excellently dispos'd towards us, and desir'd nothing better than that we, having some good stout Sins to overcome, should attain an eventual and exciting sort of Virtue, instead of languishing for ever in that state of respectable Innocence, which is so little creditable to the Angels, who alone practise it.<sup>10</sup>

The satire shows that best-world theodicy faces a dilemma. Either its arguments about the necessary connections between good and bad stay on an abstract plane, in which case it appears to lack contact with real evils, or it attempts detailed likely explanations of individual evils, in which case it descends into farce. But the dilemma is psychological, not logical. Any apparent abstractness is a result of our lack of knowledge of the fabric of the universe. If there are good effects of all evils, and we were to come to know them, we would not complain about the abstractness of the connections.

Nevertheless, it is possible to be concrete about a few of the necessary connections involved in being human. The difficulty of being human in a vacuum should not be underestimated. Psychoanalysts and their more empirically based successors have emphasised the need for a "reality principle" that places limits on the young child and thus contributes to its becoming a person. Longinus in his work *On the Sublime* says of Homer that he made his gods men and his men gods,<sup>11</sup> meaning that the immortality of the gods rendered their conflicts trivial. The need to trust others goes deep in human life, but trust necessarily involves vulnerability. Freya Mora argues that the same is true even of love. To be happy in the way humans are requires love – both given and received – and love as we know it has an element of vulnerability, not easily eliminated.

If it were divinely guaranteed that my child would grow up sound in body, heart and mind, irrespective of my concern and contribution, would my love for him be unchanged? He would certainly no longer need my love or me; would my attitude to him remain unaffected in the light of this?

In general, we love others for their strengths, their excellences. But don't we also love them for their vulnerabilities? It is in relation to their weakness that our love has a function: it is through love that we palliate each other's frailties, engendering in one another both reflections of strength and illusions of safety. If everyone around us were unbreakable, immune to pain, harm, sorrow, death, they would not need to be cherished, nurtured, protected – loved . . . .

The mere love of others is thus not the sole minimal condition for happiness. Reciprocation of that love, in some degree, is normally also required. But again, would God not have overshot His benevolent mark had He so arranged it that reciprocation was guaranteed? . . . The happiness of the lover lies in his belief that he has earned and deserves the respect and desire of the beloved. Were reciprocation assured, willy-nilly, this belief – and its attendant flush of self-affirmation – would not be possible.<sup>12</sup>

Again, this is not to argue that any particular evil is shown to be “worth it”, that foot-binding of women is worth the protectiveness it induces in their suitors, or that one should not accept a divine guarantee that one’s children will be safe. It is not to attribute to God a positive desire to include some evils in the world for the sake of the benefits accruing. The point is a more abstract one: that there are necessary connections between certain goods and certain evils – in this case between human love and vulnerability.

What is appropriate to the divine love for us is even less clear, since it differs from human love at least in being better informed about the results of its actions.<sup>13</sup> We humans can afford to neglect possibilities that our attempts to help someone will through some horrible coincidence result in evil to them. God cannot.

From this point of view, the much discussed standard logical puzzles about God and creation show as much as anything the difficulty of the design phase. Is there a best of all possible worlds (or is there, for every possible world, a better one)? If there is none, should God create none of them, all of them, or a “sufficiently good” one of them?<sup>14</sup> Is there a “paradox of omnipotence”: can God create a being he cannot control or a stone he cannot lift?<sup>15</sup> Are there logical difficulties about creating beings with free will? (Do my counterparts in other possible worlds make the same decisions as me? Can God foresee the results of free actions, including those of beings he could have made but did not?)<sup>16</sup> Does compensation in an afterlife for the ills of this life make any sense? Whatever the answers, if any, to these questions, their existence on the plane of pure logic shows there are many a priori constraints on what may initially seem straightforward design criteria for creation.

Another consideration with the same tendency is the one that distinguishes Thomas Aquinas’ view from Leibniz’s. Aquinas writes that “given the things that actually exist, the universe cannot be better, for the order which God has established in things, and in which the good of the universe consists, most befits things. For if any one thing were bettered, the proportion of order would be destroyed . . . God makes what is best in the whole, but not what is best in every single part, except in relation to the whole.”<sup>17</sup> Aquinas agrees with

Leibniz, therefore, except for asking the question: If the universe is good, why not make a copy? But the answer, if any, to this conceptual puzzle has little bearing on the problem. The question was whether the actual universe could conceivably be regarded as the best possible, a question to which other worlds have little relevance.

**Materialist frivolity: Why the problem of evil should be expected to have a solution**

*“If God exists, whence comes evil?  
If God does not exist, whence comes good?”*  
(Boethius)<sup>18</sup>

The “problem of evil” is an argument. The (main) premise is, “Evil exists.” The conclusion is “A good (powerful) God does not exist.” It is not evident that the premise and the conclusion are logically compatible. Consider, for example, the materialist world-picture, in which, certainly, no good God exists. Is there really evil in the materialist world? Of course, there are animals in pain and distress, but one who takes an absolute perspective can well ask, why does that matter? Ordinarily one thinks that the suffering of a human is a tragedy, but the explosion of a dead galaxy is merely a fire-work. Materialism, though, denies the distinction between the two, since it takes humans to be the same kind of things as galaxies, namely, moderately complicated heaps of matter. If the fate of a galaxy cannot give rise to a problem of evil, because its fate cannot in any absolute sense matter, then neither can the fate of a brain. That is the truth in the Augustinian theory that evil is a “privation of good”; one might better say “parasitic on good”, in that evil makes sense only as something that happens to a thing that has positive worth. In posing the problem of evil, a materialist who does not have positive worth in his ontology is cynically trading on our sense of the importance of those who suffer, knowing he will undermine it later.

It is true that an argument with a conclusion incompatible with a premise is not necessarily vicious: it may be taken as a *reductio ad absurdum*. It is certainly possible to pose the “problem of evil” as a reductio: *if* evil matters, then there can be no (good and powerful) God to whom it matters enough to remove it.

But that is not what the poser of the problem of evil really meant to say. His argument had a moral force behind it. It engaged our attention – and rightly so – by calling our attention to how terrible evil is. Evil matters because it happens to things of great value – at least ourselves and those with whom we share a common humanity that allows us to understand their suffering.



If the conclusion of the problem of evil entails a reductio of *that* notion of value, as well as of the existence of a good God, then it will have undermined itself by “proving too much”. If the poser of the problem is left in the end with the conclusion that evil was really not worth worrying about in the first place, he will rightly be accused of bad faith, and what seemed to be the moral force of his position will be exposed as a mere self-serving indignation. The materialist view of evil is frivolous, in the same way as the relativist view of morality. If what is right according to the mores of your tribe cannot be criticised by my tribe from any absolute moral perspective, there is no longer a standpoint for condemnation of Nazi tribes who practise evil. For the same reason, if all there is to evil is that I have a personal dislike of suffering, there is no moral standpoint from which I can criticise God for failing to alleviate it.

It is not impossible that there may be some picture of the universe that supports a notion of absolute value which makes sense of the premise of the problem of evil, but does not contain a good God. No obvious reasonably well worked out candidates seem to be on offer, however. There are some initially likely candidates, but they have problems on closer examination. On the one hand, the Spinozist, Buddhist and “deep ecology” pictures are coherent, and they do have a notion of absolute value in the absence of a God. On those views, Nature has some of the moral qualities attributed by religions to God. But they tend to dissolve the (human) self to one degree or another, in a way that threatens to undermine the seriousness of evil suffered by individual humans, the kind of suffering central to the problem of evil. That was the point of objections to “deep ecology” based on its quietism in the face of possible asteroid strikes, ice ages or HIV mutations, which are perfectly natural, and from the point of view of the universe, may well clear the earth for a wealth of exciting new evolutionary opportunities.<sup>19</sup> On the other hand, the Absolute Idealism of a century ago did take evil to individuals seriously. But the source of its immense popularity among refugees from orthodox Christianity was its providing some kind of substitute for a personal God, some good and powerful Being with whose Plan one could co-operate. World views with a sense of the seriousness of evil to humans but without Gods seem, on reflection, to be in short supply.

So the very existence of evil as a matter of absolute seriousness is a substantial outside reason to believe there must be some solution to the problem of the evil. That is why one can come to accept Leibniz's confident statement that while it may seem easy to imagine possible worlds without sin and unhappiness, “these same worlds would be very inferior to ours in goodness. I cannot show you this in detail. For can I know and can I present

infinities to you and compare them together? But you must judge with me *ab effectu*, since God has chosen this world as it is.”<sup>20</sup>

### **Leibniz and ordinary religious thinking**

The abstractness of Leibniz’s treatment can give the impression that his considerations are remote from ordinary religious thinking, and would soon evaporate in the face of real suffering. The abstract nature of the reasoning can give rise to a suspicion that anyone who advances it must be blind or uncaring. Karl Barth, for example, accuses Leibniz of having no interest in either the reality of suffering or its relief.<sup>21</sup>

The truth is the opposite. Short of despair, the most natural reaction of the religious to suffering is to put it down as a “mystery”, something that only God can understand. But if the notion of a “mystery” has any meaning in this context, it must be that there *is* a reason for the suffering, but one that only God knows. That is exactly Leibniz’s position. And like the ordinary religious, Leibniz does not in any way downplay sufferings; he is careful to argue that the more abstract goods of the world, such as order and beauty, can only be maximised in conjunction with the maximisation of happiness and minimising of suffering.<sup>22</sup>

It is arguable further that *only* the necessity of suffering can give it any meaning, and can be any sort of consolation for it. For otherwise, the suffering is superfluous and hence pointless. And the worse the suffering, the more the need for such an account of it, without which it is a sense trivialised. That has been a recurrent theme in the Christian tradition. While the compatibility of best-world theodicy with any particular creed is more a matter of theology than philosophy, the Christian position is interesting in showing how apparently abstract speculations can meld with real religious thought. Of all religious texts, the New Testament is probably the most emphatic in insisting that suffering has a point. Jesus is recorded as saying many times that his suffering was “ordained” by “scripture” (that is, was an integral part of the divine plan).<sup>23</sup> And in the Garden of Gethsemane on the night before his crucifixion, he is shown praying that this cup pass away if that is possible.<sup>24</sup> Since the cup did not pass away, the inference is that it was necessary. Why it should have been necessary was speculated on most famously in Anselm’s doctrine of the Atonement, and the overall goodness of the outcome was expressed in Augustine’s naming (possibly not to be taken literally) of Adam’s sin as a “happy fault.” Since this was adopted in the Catholic Easter liturgy, it is clear that ideas of the general tenor of Leibniz’s are not merely the remote speculations of philosophers, but are well embedded in Christian practice.

If the atheist still argues that it is the religious who is trivialising evil by expecting someone who suffers horrendous evils to find consolation in the necessity of those evils for the good of others, some thought experiments are in order. A horrendous evil is one that could well convince one who suffers it that it would be better if they had never been born.<sup>25</sup> The atheist should imagine giving to such a person a button which the sufferer can press to render themselves never born. Will the atheist be happy for the sufferer to press the button? Perhaps. But the more relevant thought experiment involves a button that the sufferer can press to render the whole universe never born. Would the atheist still be happy to hand over the button? If the atheist remains entirely contemptuous of the religious appeal to best-world theodicy, he ought to have no hesitation in handing it over. For hesitation involves weighing the claims of the sufferer against those of others who value their lives – weighing them in the way that God does in creating the actual world, according to the Leibnizian.

More generally, human effort on the side of right can only have meaning in a world similar to the one Leibniz describes. It might at first appear that prayer, for example, is useless in a world that is already the best possible, since there is no point in asking for improvements that God would already have made if they had been possible. But Leibniz is right to say that “God has ordered all things beforehand once for all, having foreseen prayers, good and bad actions, and the rest.”<sup>26</sup> That is, prayers and actions can have an effect, in co-operating with God and making possible aspects of his design that would not have been possible otherwise. It is a more noble role for human action than that envisaged by more transcendent views of God, according to which he could at a stroke accomplish anything we could, but much better. (Our belief that prayers and actions can have a positive effect does, however, produce an illusion to the disadvantage of best-world theodicy, since we easily conclude that God, being more powerful than us, could easily produce those same effects without our assistance; but this again is a problem in the realm of psychology rather than logic.)

Similar considerations apply to the picture of God that arises from Leibniz's solution. Some will not like the image of an accountant God, calculating fine balances of goods and evils. These will be the same people who were found objecting to humans calculating their advantages, especially in important matters like choice of marital partner. They are wrong here for the same reason. With a multiplicity of agents in creation, especially free ones, there comes inevitably complexity of interactions, and with complexity comes calculation of trade-offs. Given that in the actual creation, evil bears so heavily, it is worthwhile for God to fine tune arrangements to alleviate even a small fraction of the evil that exists. It is the least he can do.

## Notes

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18. Boethius, *Consolation of Philosophy* I.iv.
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22. G. Brown, 'Leibniz's Theodicy and the confluence of worldly goods', *Journal of the History of Philosophy* 26 (1988): 571–591; further in C. Wilson, 'Leibnizian optimism', *Journal of Philosophy* 80 (1983): 765–783; C. Wilson, 'Pleniude and compossibility in Leibniz', *Leibniz Review* 10 (2000): 1–20; L.T. Howe, 'Leibniz on evil', *Sophia* 10(3) (1971): 8–17.
23. Matthew 16:21; Mark 8:31; Luke 9:22, 17:25, 24:26; John 3:14, Acts 17:3.
24. Mark 14:35–36; Matthew 26:42.
25. M.M. Adams, *Horrendous Evils and the Goodness of God* (Ithaca, N.Y., 1999), pp. 26–29.
26. Leibniz, *Theodicy*, par. 9.