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Michael Tooley has developed important and sophisticated evidential versions of the argument from evil that aim to circumvent sceptical theist responses. Evidential arguments from evil depend on the plausibility of inductive inferences from premises about our inability to see morally sufficient reasons for God to permit evils to conclusions about there being no morally sufficient reasons for God to permit evils. Tooley's defence of this inductive step depends on the idea that the existence of unknown rightmaking properties is no more likely, a priori, than the existence of unknown wrongmaking properties. I argue that Tooley's arguments beg the question against the theist, and, in doing so, commit an analogue of the base rate fallacy. I conclude with some reflections on what a successful argument from evil would have to establish.

The Problem of Evil

Many people have the intuition that the existence of God is incompatible with the existence of evil, or with the existence of particular appalling evils, or that the existence of evil or particular appalling evils make it very unlikely that God exists. However, converting this intuition – one which, after all, isn't shared by all or even most people – into a successful argument against the existence of God has proven difficult. Few now hold that there are convincing deductive arguments from premises about the nature of God and uncontroversial premises about the existence of evil which show that the existence of God is logically incompatible with the existence of evil.[1] Instead, a variety of *evidential* arguments from evil have been proposed. Undergirding evidential arguments from evil is the idea that the existence of evil (or terrible evil, or some particular evils) show that theism is unlikely, and hence defeats entitlement to theism.[2]

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[1] See Mackie (1955) for a classic statement of this kind of argument.

[2] See (e.g.) (Rowe 1979; 1991; 1996; 1998) for classic statements of inductive arguments from evil, Draper (1989) for a Bayesian formulation, and Tooley (2015) for some recent objections to these.

Michael Tooley (Plantinga and Tooley (2008), Tooley (2012)) has developed a sophisticated and rigorous evidential argument from evil, immune to objections often levelled against other arguments from evil. This makes understanding the argument a particularly important task. Despite this, it has so far received relatively little attention in the literature.[3] Tooley's own argument is *concrete*, *inductive* and *deontological*. That is to say, it argues from particular actual evils rather than the presence of evil (of a kind of evil, or an amount of evil) more generally; it argues that the existence of God is improbable given these evils, and not that it is logically incompatible with these evils; and it focusses on the rightness of wrongness of acts rather than on the goodness or badness of states of affairs. In fact, Tooley gives two arguments. The first takes a single concrete evil – the Lisbon Earthquake – and argues that it is more likely than not that God did not exist at the start of the Lisbon Earthquake. The second makes a cumulative case from many concrete evils, and argues that the existence of God is very unlikely indeed. I'll be focussing on Tooley's stronger, second argument (though what I say applies, in slightly modified form, to the first) but it will be useful to look briefly at the first to get a sense of his general strategy. Tooley's arguments, I will argue, beg the question against the theist, and so, even if sound, cannot provide warrant for the conclusion that God does not exist.

Tooley's First Argument

Before we can get a grip on Tooley's arguments, we will need to set out some of his terminology. Key here is the idea of *rightmaking* and *wrongmaking* properties. An action which has only rightmaking properties is morally permissible or obligatory, and an action which has only wrongmaking properties is morally impermissible. An action can possess wrongmaking properties, but still be morally right (permissible or obligatory) overall, so long as its rightmaking properties outweigh its wrongmaking properties. Similarly, an action can possess rightmaking properties but still be morally wrong (impermissible) overall, so long as its wrongmaking properties outweigh its rightmaking properties. To account for this, rightmaking and wrongmaking properties, as Tooley understands them, are also *quantitative* 'so that there are numbers associated with rightmaking and wrongmaking properties that represent the moral weight, or seriousness, of the properties in question.' (Plantinga and Tooley (2008, 116)) Tooley takes this to be necessary if acts with both rightmaking and wrongmaking properties are to have a determinate moral status.[4] The next step is to note that, for

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[3] See Alvin Plantinga's contribution to Plantinga and Tooley (2008), Otte (2013), and Langtry (2015) for discussion of the argument.

[4] This isn't quite right. It could be the case that some moral reasons can *trump* others without it being the case that they have numerically describable values which can be added to one another. Moral reasoning could be nonmonotonic without being quantitative. In which case, actions could have both

any act, we can subdivide right- and wrongmaking properties of that act into those of which we have knowledge and those of which we do not. An action then is *prima facie* wrong 'if the weight of its known wongmaking properties, taken together, is greater than the weight of its known rightmaking properties, taken together.' (Plantinga and Tooley (2008, 116)) Tooley treats permitting events to occur, that are within one's power to prevent, as an action. The action of allowing the Lisbon earthquake to occur has the wrongmaking property of allowing more than 50,000 ordinary people to be killed. Keeping these points in mind, we can set out Tooley's first argument.[5] Tooley wants to justify the inductive step from p to q:

> p: The action of intentionally allowing the Lisbon earthquake to occur has a wrongmaking property that we know of, and there are no rightmaking properties known to be counterbalancing.

> q: The total wrongmaking properties of the action of intentionally allowing the Lisbon earthquake to occur outweigh the total rightmaking properties of that action—including rightmaking properties of which we have no knowledge.

Tooley then provides his attempted justification of this step. Central to Tooley's justification is a *symmetry principle* with respect to *unknown* rightmaking and wrongmaking properties:

> Given what we know about rightmaking and wrongmaking properties in themselves, for any two numbers, M and N, the probability of there being an unknown rightmaking property with a moral weight between M and N is equal to the probability of there being an unknown wrongmaking property with a (negative) moral weight whose absolute value is between M and N. (Plantinga and Tooley (2008, 129))

In other words, there may be unknown rightmaking properties that attach to acts that are *prima facie* wrong, but it is just as likely that there are unknown *wrongmaking* properties that attach to these acts, and, moreover, these rightmaking properties are not more likely to be weightier than these wrongmaking properties (or vice versa).

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rightmaking and wrongmaking properties, whilst still being determinately right, or wrong, even if rightmaking and wrongmaking properties are not quantitative. Langtry (2015) makes the point that some wrongmaking properties could be defeated by properties which were not themselves rightmaking properties. I will ignore these complications; my objection here does not depend on whether Tooley's argument could be reformulated to take account of them.

[5] In fact, Tooley's first argument is set out in more than twenty steps. What I provide here is a sketch, though one that keeps the main joints of the argument clearly in view.

Unknown deontological properties need not pull in the theist's favour, and are just as likely to pull away from it. This is a crucial step in providing a rejoinder to the sceptical theist. Sceptical theists argue that our cognitive limitations are such that we are not in a position to rule out (in Tooley's terminology) unknown rightmaking properties for events that it would be *prima facie* wrong to permit – rightmaking properties sufficiently weighty to make to make the event overall right to permit.[6] For instance, though permitting the Lisbon earthquake had the wrongmaking property of allowing over 50,000 ordinary people to be killed, perhaps there are unknown countervailing rightmaking properties attached to permitting the Lisbon earthquake, which would outweigh this and other known wrongmaking properties. Tooley's point here is that this may well be true, but lopsided. Our cognitive limitations are also such that we are not in a position to rule out unknown *wrongmaking* properties for events that it would be *prima facie* wrong to permit – wrongmaking properties that add further weight against the permissibility of the *prima facie* wrong event. Why think that something like the *symmetry principle* holds? Tooley argues for the symmetry principle on the basis of three considerations:

1. Judged from a purely a priori point of view, the mere existence of wrongmaking properties is no less likely than the existence of rightmaking properties.
2. Judged from a purely a priori point of view, the likelihood that there exists a rightmaking property with a moral weight whose absolute value is equal to M is no greater than the likelihood that there exists a wrongmaking property whose absolute value is equal to M.
3. Judged from a purely a priori point of view, the likelihood that there is a rightmaking property with a moral weight whose absolute value is equal to M that is relevant to the moral status of the action in question, given the knowledge and power of the agent, is no greater than the likelihood that there is a wrongmaking property whose absolute value is equal to M that is relevant to the moral status of the action. (Plantinga and Tooley (2008, 127–8))

Roughly speaking, our a priori grasp of rightmaking and wrongmaking properties is such that there are no a priori reasons to take there to be more rightmaking properties than wrongmaking properties (or vice versa), to take it to be more likely than not that rightmaking properties are weightier than wrongmaking properties (or vice versa), or to take it to be more likely than not that *relevant* rightmaking properties are weightier than relevant wrongmaking properties (or vice versa). 1–3 underwrite the symmetry principle with respect to unknown rightmaking and wrongmaking properties, which in turn underwrites the symmetry principle (C1):

[6]See Wykestra (1984) and Alston (1991) for representative early statements of this idea.

(C1) If A is an action that, judged by known rightmaking and wrongmaking properties, is prima facie very seriously wrong, then the probability that action A is morally wrong, all relevant rightmaking and wrongmaking properties considered, both known and unknown, is greater than one half. (Plantinga and Tooley (2008, 130))

(C1) is then applied to justify the inductive step from p to q. As noted above, Tooley's argument is concrete, appealing to actual, specific evils, and, in particular, the Lisbon earthquake. Substituting A for 'the Lisbon Earthquake' in (C1), we can combine it with the premise:

Permitting the the Lisbon Earthquake is an action that, judged by known rightmaking and wrongmaking properties, is prima facie very seriously wrong.

to get:

The probability that permitting the Lisbon Earthquake is morally wrong, all relevant rightmaking and wrongmaking properties considered, both known and unknown, is greater than one half.

From here it's very easy to see how the rest of the argument goes, for a morally perfect being, with knowledge of all rightmaking and wrongmaking properties and the power to prevent the Lisbon earthquake, would not permit the Lisbon earthquake if doing so is was morally wrong, all things considered. Since the Lisbon earthquake in fact took place, if permitting the Lisbon earthquake is morally wrong, all things considered, then a morally perfect being, with knowledge of all rightmaking and wrongmaking properties and the power to prevent the Lisbon earthquake, did not exist at the time of the Lisbon earthquake. And if the probability that permitting the Lisbon Earthquake is morally wrong, all things considered, is greater than one half, then the probability that a morally perfect being, with knowledge of all rightmaking and wrongmaking properties and the power to prevent the Lisbon earthquake, did not exist at the time of the Lisbon earthquake, is greater than one half. Assuming that a being like this did not come into existence since the Lisbon earthquake, then no such being exists.

Tooley's Second Argument

The first argument aims to show only that, given the Lisbon Earthquake, it is more likely than not that God doesn't exist. But Tooley thinks there is a stronger argument to be had: that multiple *prima facie* seriously wrong evils have a cumulative impact. The

second argument makes use of three key bits of conceptual machinery, due to Carnap (1962): *state-descriptions*, *structure-descriptions*, and predicates that are *maximal* with respect to a set of properties.

Before we turn to more of the details however, it's worth characterising, in an intuitive way, the idea behind this argument. For brevity, we will refer to events such that, judged by *known* rightmaking and wrongmaking properties alone, it would be wrong for God to permit, as *prima facie wrong* events. Similarly, we will refer to events such that, judged by both *known and unknown* rightmaking and wrongmaking properties, it would be permissible for God to permit, and *permissible* events. Say there are *n* prima facie wrong events in our world, and *k* unknown right- and wrongmaking properties. Take all the possible worlds where those *n* events obtain and where these *k* properties might be instantiated. Only a subset of those worlds will be such that *all* the *n* prima facie wrong events are in fact permissible. In this subset of worlds, the unknown right- and wrongmaking properties are always such that they tip the balance in favour of events being permissible (by God); *viz.* the total rightmaking properties associated with permitting any given event to take place always outweigh the total wrongmaking properties associated with permitting that event to take place. Moreover, if we assume that unknown right- and wrongmaking properties are evenly distributed across worlds (as Tooley's considerations 1–3 suggest), then the larger *n* is – the more *prima facie* wrong events there are – the smaller the proportion of worlds in which *all* these events are in fact permissible. The probability that our world is permissible is given by the ratio of permissible worlds to the total number of worlds; the *proportion* of worlds which are permissible. If one in ten worlds, for example, are permissible, then there is a 0.1 probability that the actual world is permissible.

With this intuitive characterisation in hand, we can turn to some details of Tooley's argument, and firstly to the idea of a *state description* (Carnap (1962)). Given a first-order language *L* with logical expressions '&' and '¬', unitary predicate symbols 'P', 'Q', 'R' etc., and constants 'a', 'b', 'c', etc., a state description is a sentence of *L* that assigns every predicate or its negation to every constant. Putting this more intuitively, though in a more metaphysically loaded way, given a set of individuals and a set of properties, a state-description is a proposition that specifies for each individual whether it has each property. In other words, a state-description characterises a possible world; it is a description, within a language, of a possible world.

Importantly for Tooley's argument, the number of unique state descriptions in a language *L* depends on the the number of predicate symbols and constants in *L*. If *L* contains one predicate 'P' and one constant 'a', then *L* produces two state descriptions:

Pa
¬Pa

If *L* contains one predicate 'P' and two constants 'a' and 'b', then *L* produces four state descriptions:

Pa & Pb
¬Pa & Pb
Pa & ¬Pb
¬Pa & ¬Pb

Similarly, if *L* contains one predicate 'P' and three constants, 'a', 'b', and 'c', then *L* produces eight state descriptions:

Pa & Pb & Pc
Pa & Pb & ¬Pc
Pa & ¬Pb & Pc
¬Pa & Pb & Pc
Pa & ¬Pb & ¬Pc
¬Pa & ¬Pb & Pc
¬Pa & Pb & ¬Pc
¬Pa & ¬Pb & ¬Pc

This is crucial, because being able to *count* state descriptions is what makes it possible to provide the ratio of permissible worlds to the total number of worlds, and hence the *proportion* of worlds which are permissible, and hence the probability that our world is permissible. Each state description has a probabilistic weight (possibly all the same), and the probability of a statement is the sum of the weights of the state descriptions it is true in. Take *L* to contain one predicate 'P' and three constants, 'a', 'b', and 'c', and give each state description an equal weight. Then, since Pa is true in half of the state descriptions p(Pa) = 0.5. Since, 'Pa & Pb & Pc' is only true in one state description, p(Pa & Pb & Pc) = 1/8 = 0.125. For reasons to do with induction, Tooley doesn't assign equal weight to state descriptions, but to *structure descriptions*. Structure descriptions provide structural information about how many objects have each given property.[7] Two state descriptions have the same structure description if they are isomorphic. Let the structure description of a sentence ϕ be designated $[\phi]$. Then, for instance, [Pa & Pb & ¬Pc] = [Pa & ¬Pb & Pc] = [¬Pa & Pb & Pc] since each

[7]Take the eight state descriptions in the last example above. Carnap wants to make it the case that if we learn (e.g.) that Pa and that Pb, this increases the probability that Pc. However, if we assign equal probabilistic weight to all state descriptions, then the two remaining state descriptions ('Pa & Pb & Pc' and 'Pa & Pb & ¬Pc') are both equally likely. Assigning equal probabilistic weight to structure descriptions means that learning that Pa and that Pb *does* make Pc more likely. (Note this gives the odd result that it is inherently more likely that all the objects in a world will have a given property than that some of them will; e.g. it is inherently more likely that Pa & Pb & Pc than that Pa & ¬Pb & Pc.)

of these state descriptions characterises two objects as having P, and [Pa & ¬Pb & ¬Pc] = [¬Pa & ¬Pb & Pc] = [¬Pa & Pb & ¬Pc], since each of these state descriptions characterises one object as having P. Tooley's argument now involves finding a way to count the total number of relevant structure descriptions. This will give us the total number of relevant possible world-structures. Then we will need to find a way to count the number of structure descriptions in which all the prima facie wrong events are in fact permissible. Given this, we can calculate the ratio of permissible world-structures to world-structures in total, which will allow us to say how likely it is that the actual world is a permissible world.

What structure descriptions are relevant? What features will *L* have? We are not interested here in *every* metaphysically possible world. What we are considering are all the possible worlds that contain all the actual-world prima facie wrong events. So *L* will contain a one constant for every prima facie wrong event that has taken place in the actual world. Call the number of prima facie wrong events *n*. The total number of structure descriptions will depend on the size of *n*. But to calculate both the total number of structure descriptions and the number of permissible structure descriptions we will also have to know more about the predicates of *L*.

Predicates in the language used to characterise structure descriptions can be deontological. In other words, structure descriptions can attribute rightmaking properties and wrongmaking properties to events, and hence can characterise possible worlds as being either permissible or impermissible, in the sense that it is either permissible or impermissible for God to allow that possible world to be actualised. A structure description is *prima facie* impermissible if at least one of the events in it is *prima facie* wrong for God to allow. And a structure description is *in fact* permissible if none of the events are morally wrong (for God to allow) once all the right- and wrongmaking properties, both known and unknown, are taken into account. As such, structure descriptions that are *prima facie* impermissible cannot be *in fact* permissible unless there are unknown rightmaking properties strong enough to counterbalance the wrongmaking properties, both known and unknown. What Tooley is interested in here is the set of structure descriptions that contain all the prima facie impermissible events contained in the actual world. (The actual world is after all, according to Tooley, one that is characterised as prima facie impermissible, due to it containing events that are prima facie impermissible. The Lisbon earthquake is an example of one such event, but Tooley thinks that there are a great many such cases, including the ageing and death of human beings.)[8] The probability that our world is *in fact* permissible, all things considered, can be found if we compare the total number of structure descrip-

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[8]'[E]veryone undergoes the evil of death, and a high proportion of people undergo the evil of aging, and given the rightmaking and wrongmaking properties of which we are aware, allowing either is surely unjustified, except in a small proportion of cases.' (Plantinga and Tooley (2008, 142))

tions that contain all the prima facie impermissible events contained in the actual world with the number of all-things-considered-permissible structure descriptions that contain all the prima facie impermissible events contained in the actual world. The probability that our world is permissible is given by the ratio of permissible structure descriptions of this sort to the total number of structure descriptions of this sort; the *proportion* of structure descriptions of this sort which are permissible.

To calculate this, Tooley makes use of an ingenious idea due to Carnap. Call predicates that are *maximal* with respect to unknown rightmaking and wrongmaking properties – i.e. that, for any given action and all rightmaking and wrongmaking properties, attribute to that action either those properties or their negations – Q-predicates. Let U be the set of all *unknown* rightmaking and wrongmaking properties. We can then say:

- A Q-predicate P is **positive** iff considering only the properties in U, any action to which P applies is neither morally neutral or morally impermissible.
- A Q-predicate P is **negative** iff considering only the properties in U, any action to which P applies is morally impermissible.
- A Q-predicate P is **neutral** iff considering only the properties in U, any action to which P applies is morally neutral.

Let us say that P will *justify* a prima facie wrong action *a* if and only if P is a Q-predicate that applies to *a* and is sufficiently weighty to counterbalance the extent to which *a* is prima facie wrong, given the known wrongmaking and rightmaking properties that apply to *a*. Clearly then, only positive Q-predicates are such that they can justify prima facie wrong actions. However, not all positive Q-predicates will justify some prima facie wrong action, since (given Tooley's assumptions about rightmaking and wrongmaking properties) not all Q-predicates will be sufficiently weighty to counterbalance the extent to which that action is prima facie wrong. So the predicates that justify a given action will usually be a proper subset of the positive predicates. Calculating the relative cardinalities of the set of justifying Q-predicates and this subset would be difficult. But we can ignore this complication if we aim to calculate an *upper bound* on the probability that unknown rightmaking properties are sufficient to counterbalance the prima facie wrongness of the prima facie wrong events we are considering. To do *that* we need to consider the total number of structure descriptions versus the number of structure descriptions in which every action is assigned a positive Q-predicate.

Because we're talking about *maximal* predicates (predicates that are exhaustive with respect to unknown rightmaking and wrongmaking properties), each prima facie impermissible action (i.e. each constant of *L*) gets "paired" with exactly one Q-predicate in U – each Q-predicate in U gets attributed to exactly one action. So the

task is equivalent to finding out how many ways there are to pair a given number of predicates with a given number of constants. Appealing to maximal predicates, then, turns this into a combinatorics problem. Quite generally, the number of sets of n objects that can be chosen from N objects is equal to

$$\frac{N!}{n!(N-n)!}$$

Carnap (1962, 159–60) shows that if there are m maximal predicates, then the number of structures descriptions is equal to the number of ways of choosing $(m-1)$ things from a set of $(n+m-1)$ things. Plugging these values into n and N then, the total number of structure descriptions is equal to

$$\frac{(n+m-1)!}{((n+m-1)-(m-1))!(m-1)!}$$

which can be written as

$$\frac{(n+m-1)!}{n!(m-1)!}$$

Take the set of all Q-predicates of actions. The cardinality of this set must be a power of 2, because, given Tooley's symmetry considerations, there is a one-to-one correspondence between negative predicates, on the one hand, and positive predicates, on the other hand. Because of this, we can call the number of Q-predicates $2k$, and we can divide the set of Q-predicates into two other sets, S and T of cardinality k, such that all the positive Q-predicates and some neutral Q-predicates are in S, while all the negative Q-predicates and the remaining neutral Q-predicates are in T. Recall that for m maximal predicates and n singular terms, the total number of structures descriptions is equal to $\frac{(n+m-1)!}{n!(m-1)!}$. It follows that total number of structure descriptions ascribing Q-predicates (i.e. Q-predicates from $S \cup T$) to actions is equal to

$$\frac{(n+2k-1)!}{n!(2k-1)!}$$

and the number of structure descriptions assigning Q-predicates from S is equal to

$$\frac{(n+k-1)!}{n!(k-1)!}$$

Use P(k,n) to designate the upper bound on the probability that none of the n

prima facie evils is wrong in fact wrong. P(k,n) is the ratio of total relevant structure descriptions to permissible ones. This is given by dividing the latter equation by the former. Tooley shows that this is equal to:

$$P(k, n) = \frac{(2k - 1)(2k - 2)...(k + 1)(k)}{(n + 2k - 1)(n + 2k - 2)...(n + k)}$$

It can be shown that:

1. $P(k, n)$ is a monotonically decreasing function of n.
2. $P(k, n,)$ is a monotonically decreasing function of k, except where $n = 1$, when the value of $P(k, n)$ is the same for all values of k.

2 shows us that for any n, $P(k, n)$ is a maximum when $k = 1$. So this gives us the all important *upper bound* on $P(k, n)$:

$$\frac{1}{n + 1}$$

Now, given that n = the number of *prima facie* impermissible events in the world, then the upper bound on the probability that these are all permissible is very low. For instance, Tooley takes death to be prima facie impermissible. It's estimated that there are around 100,000,000,000 human beings who have ever been born. Since (presumably) all of these people have or will die, the upper bound on the probability that God exists, given human death, is around $\frac{1}{100,000,000,001}$.

Problems With The Argument

Though Tooley's is an important and potentially powerful version of the argument from evil, I have already noted that there is relatively little by way of response to it. Richard Otte (2013) objects that, by weighing structure descriptions equally, the argument implausibly relies on the idea that possible rightmaking properties for any given *prima facie* wrong event are *independent* of one another. Alvin Plantinga (Plantinga and Tooley (2008)) argues that the symmetry principle explicitly at play in Tooley's first argument is not something we can know to hold (though doesn't provide much in the way of motivation for this). Bruce Langtry (2015) raises a number of difficulties in formulating Tooley's argument, including objections to Tooley's account of properties,[9] and points out that (though he address the issue to some extent in Tooley (2015)) the possibility of a successful theodicy is largely set aside in Plantinga and

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[9]In particular, if Tooley adopts a liberal conception of properties, then there will be infinitely many unknown rightmaking and wrongmaking properties, with the result that P(k,n) would involve dividing infinity by infinity. If, on the other hand, Tooley adopts a sparse conception of properties, he is faced

Tooley (2008) and Tooley (2012). However, even if Tooley could reformulate his argument to remove the idealising assumption that the possible rightmaking properties for any given *prima facie* wrong event are *independent* of one another, and provide an account of properties that addresses Langtry's objections, there remains an even more serious, and revealing, objection to Tooley's formulation of the argument from evil.

In treating each structure description as equally probable, Tooley begs the question against the theist, and, in doing so, commits something akin to a base rate fallacy. Here is an example of the latter:

> You have discovered some strange symptoms; your tongue is covered in blue spots. You visit your doctor who tells you that these symptoms are associated with a rare disease that afflicts 1 in every 100,000 people. Worse, the symptoms are very *closely* associated with a disease: in only 5% of cases in which someone does not have the disease will they manifest blue spots on their tongue. Yet worse still, in *every* case of the disease, the afflicted person will manifest the blue spots.

Given this, what is the likelihood that you have the disease? There is a strong intuitive pull to say that the likelihood is around, or even greater than 0.95. We tend to reason in the following sort of way: the symptom is only misleading in 5% of cases, so there is a 95% chance the symptom is not misleading; in which case, there is a 0.95 probability I have the disease. Despite this intuitive pull, the reasoning here is fallacious. In fact the probability you have the disease is around 0.0002 (i.e. 0.02% or 2% *of* 1%.). How so? It isn't difficult to see where the reasoning goes wrong. 1 in 100,000 people have the disease. Out of a set of 100,000 people, one person will have the disease and correctly be diagnosed with the disease on the basis of their symptoms. Because there are false positives in 5% of healthy people with the symptoms, out of the remaining healthy 99,999, there will be almost 5000 (4999.95) false positive results; i.e. almost 5000 healthy people with the symptoms. For every 5000.95 people with blue spots on their tongues only 1 will have the disease. Of those with blue spots on their tongues, the ratio of healthy to afflicted is 4999.95:1. Given your symptoms then there is only around a 1 in 5000 chance that you have the disease. This is captured in Bayes' Theorem:

$$p(H|E) = \frac{p(E|H)p(H)}{p(E)}$$

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with the task of explaining how the properties Tooley appeals to (such as *Choosing not to prevent the death of over 50,000 people*) is grounded in a sparse set of morally relevant properties.

where 'H' and 'E' stand for hypothesis and evidence respectively, and, for any sentences X and Y, $\ulcorner p(X|Y) \urcorner$ means 'the probability of X given Y'. In our case the hypothesis is that you are ill, and the evidence is your symptoms. Bayes' Theorem makes clear that the likelihood of being ill is a function of (amongst other things) the base rate of ill people p(H). The lower the prior probability of having the disease, the lower the conditional probability that you have the disease given that you have the symptoms, and in this case the prior probability of having the disease is very low indeed. In taking the *posterior* probability that you have the disease to be around 0.95, one is treating the prior probability of having the disease as being equally weighted with the prior probability of not having the disease. We can press this idea further. Imagine that a revolutionary therapy a generation ago wiped out the disease so that *no-one* can be infected. It is still the case that the blue spots on your tongue are, in a real sense, an *indicator* of the disease. In every possible case of the disease, the afflicted person will have these symptoms, and only in a small proportion of possible cases will someone manifest the symptoms without having the disease. However, not only is the environment that you happen to be in not one in which this indicator functions reliably, it is an environment in which the indicator *never* produces the correct result.

Tooley has not argued for any logical or metaphysical incompatibility between the existence of God and the existence of *prima facie* impermissible events. In fact, Tooley affirms the logical or metaphysical possibility that there *are* good reasons for God to permit the prima facie evils of our world:

> [I]f it is logically possible that a single, unimpressive evil might be logically necessary for some greater good, must this not also be possible in the case of a horrendous evil? But, then, if this is possible in the case of a single, horrendous evil, how could it not be so in the case of a multitude of horrendous evils? … As a consequence, it seems to me that the argument from evil needs to be formulated in a different way—namely, not as a deductive argument for a very strong claim, such as that it is logically impossible for both God and evil to exist, or for both God and a certain quantity of evil, or certain types of evil, to exist, but as an inductive (or evidential or probabilistic) argument for the more modest claim that there are evils that actually exist in the world that make it unlikely—indeed, very unlikely—that God exists. Plantinga and Tooley (2008, 100)

There are, according to Tooley's account, possible world-structures (structure descriptions) in which there are many *prima facie* wrong events *and* in which God exists. Instead, Tooley has argued that, out of the totality of possible world-structures (structure descriptions), only a relatively small proportion are ones in which there are many *prima facie* wrong events and God exists. Each state description provides one possi-

ble permutation of how maximal unknown rightmaking and wrongmaking predicates can be assigned to constants denoting prima facie wrong events. Every possible way of attaching predicates to constants is accounted for in the set of state descriptions. Equal probabilistic weight is then assigned to each set of structurally identical permutations. The probability that our world is permissible is given by the proportion of sets of structurally identical permutations that characterise permissible worlds. What we have then is the probability that all prima facie wrong events are in fact permissible, if unknown rightmaking and wrongmaking properties have been assigned to them *randomly*. But, having made this explicit, the fundamental problem with Tooley's argument should be clear. The idea that unknown rightmaking and wrongmaking properties are assigned to events *randomly*, or as good as randomly, is something that can only be held if one has *already* rejected theism.

Theists hold that, out of all the conceptually possible worlds, only a small subset are such that God would actualise them or permit their existence. This is the gist of any notion of divine providence. If God exists, a divine *filtering process* is going on. Though God has permitted many evils, God may very well have prevented many more from taking place. In particular, out of all the possible *prima facie* wrong events, God has only permitted those *prima facie* wrong events which are in fact permissible. It may of course be that, out of all the *conceptually possible* worlds, a higher proportion containing *prima facie* impermissible events are not permissible, but this is neither here nor there. Given theism, and divine providence, the only possible world-structures (relevant structure descriptions) are those that are all things considered permissible: other world-structures are not compossible with the existence of God. In treating the possibility space as including *all* structure descriptions, and weighing these equally, Tooley begs the question against the theist.

In fact, what Tooley has shown at most is that *if God does not exist* – if no filtering is going on – it is very improbable that the evils we see in our world are such that a morally perfect God would allow them. If God does exist, filtering *is* taking place, and Tooley's base of total structure descriptions is too large. If we are unsure whether God exists, then the total number of structure descriptions is something on which we have to remain agnostic. Tooley's argument may be sound, but, as Tooley's assumptions about the total number of structure descriptions are only warranted if one already possesses warrant for atheism, it fails to transmit warrant. We can see this in the analogous case of the diagnostic test. The analogue of theists, in this case, are those who hold that the disease has been eradicated. Although blue spots on the tongue are an indicator of the disease *in some sense*, those who hold that the disease has been eradicated are entitled (and in fact obliged) to hold that all cases of blue tongues are false positives. Weighing *known* rightmaking and wrongmaking properties acts as something like a *wrongness indicator*. Even in an environment under the providential guidance of a morally perfect and omnipotent God, some events will register positively

as being wrong. The problem is that we are not in a position to assess how many of these instances are likely to be false positives (and this could be *every* case) *until* we have settled what environment we are in.

It should be clear that the foregoing can be applied *mutatis mutandis* to Tooley's first argument, in particular his symmetry principle:

> (C1) If A is an action that, judged by known rightmaking and wrongmaking properties, is prima facie very seriously wrong, then the probability that action A is morally wrong, all relevant rightmaking and wrongmaking properties considered, both known and unknown, is greater than one half. (Plantinga and Tooley (2008, 130))

(C1) may well be true given atheism, for given atheism there is no reason to think that the events that unfold are, in any way, selected for, or under some kind of providential guidance. Given atheism, there is no reason to think that an event that seems impermissible should be permissible all things considered. However, given theism, the events that unfold *are* selected for, or under some kind of providential guidance. Given theism, the only events that are permitted to take place are those that are permissible, all things considered. (C1) may be plausible given atheism, but it is false given theism. Remaining agnostic between atheism and theism requires remaining agnostic on (C1). On any of these options, the argument fails to transmit warrant.

Retooling Tooley's Argument

The foregoing suggests a more general issue concerning how to formulate the argument from evil. For if the argument leaves open the possibility that all prima facie impermissible events are all-things-considered permissible, then the theist – who holds that God filters out any all-things-considered-impermissible events – is entitled (and in fact obliged) to hold that all prima facie impermissible events are *actually* all-things-considered permissible. It is only probable that some of these prima facie impermissible events are actually all-things-considered *im*permissible if God does not exist. Absent non-question-begging reasons to think any one of these events is *actually* all-things-considered impermissible, this move is always open to the theist.[10] Tooley wants an argument from evil that can affirm two things:

> (1) ◇ [The prima facie impermissible events in our world are in fact all-things-considered permissible].

[10]I assume here that the theist has entitlement to their theism, prior to hearing the argument from evil. The argument from evil, after all, is supposed to defeat entitlement to theism.

    (2) It is (highly) probable that [The prima facie impermissible events in
        our world are *not* all-things-considered permissible].

However, in virtue of granting 1, the theist is entitled to deny 2. Given that there is no metaphysical incompatibility between the existence of God and these prima facie evils, and given that God has ordained which prima facie evils may take place, 2 is defeated. There appear then to be quite general reasons then why an argument from evil that holds 1 and seeks to establish 2 will not in fact transmit warrant to 2. Does this mean that there could be no successful argument from evil? Not quite, for the option is still open to attempt to establish a different kind of claim:

    (1*) It is (highly) probable that [$\neg\diamond$ [The prima facie impermissible events
        in our world are in fact all-things-considered permissible]].

Instead of trying to argue that it is possible but improbable that God has good reasons for permitting the prima facie evils of our world, one could attempt to argue that it is unlikely that it is possible that God has good reasons for permitting the prima facie evils of our world. To do *that* however, one would be required to defend (i.e. show to be probable) a substantive moral theory that entailed that some actual prima facie evils would not be permissible by God under any circumstances whatsoever. Having such a moral theory in hand would allow for a formulation of the argument from evil that takes the following sort of shape:

1. There are no circumstances whatsoever under which it would be permissible for a morally perfect and omnipotent being to allow X.
2. If there are no circumstances whatsoever under which it would be permissible for a morally perfect and omnipotent being to allow X then, if X took place, no morally perfect and omnipotent being existed when X took place.
3. If X took place, no morally perfect and omnipotent being existed when X took place. (1,2 MP)
4. X took place.
5. No morally perfect and omnipotent being existed when X took place. (3,4,MP)

Tooley himself reflects on arguments of this kind:

I do not think that one can establish, without appealing to some substantive, and probably controversial, moral theory, that there cannot be cases where some evil is logically necessary for a greater good that outweighs it. (Plantinga and Tooley (2008, 100))

However, he finds this problematic, because, as we saw above, he takes it that he is obliged to accept 1 – that it is possible that there are morally sufficient reasons for God to permit all the evils in our world – and, presumably, because an argument from evil that relied on a substantive moral theory would always be vulnerable to criticisms of that moral theory. The argument from evil should, by Tooley's lights, be something that does not rely on substantive (and hence contestable) moral premises. But perhaps this is precisely what the argument from evil cannot be.

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