Incomparability, Consequentialism, and Risk

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Introduction

It’s plausible that some things are morally incomparable. That is, they may be neither better than, worse than, nor equal to each other in moral value. Take for instance a mild headache and a mild stomachache. It is plausible that the moral (dis)value of the headache is neither better than, worse than, nor exactly equal to the moral (dis)value of the stomachache. While both are morally bad, they are bad in such qualitatively different ways that neither is worse than nor equal to the other.¹

Such incomparability can make determining the moral permissibility of our actions more complicated. For instance, suppose that John is unconscious due to a bacterial infection that will take his life if left untreated. Fortunately, he can be treated with either of two drugs: H or S. H will cure John of infection, but leave him with a mild headache as a side effect. S will also cure John, but leave him with a mild stomachache instead. What are we morally permitted to do here? Given that the outcomes of each treatment are morally incomparable, we might be at loss about what action morality prescribes. Nonetheless, it’s plausible that we would be morally permitted to treat him with either drug, given that neither outcome is morally worse than the other and both are morally better than leaving him untreated.

Suppose though that the situation is changed so that S is unavailable, but another drug called Risky S is. Risky S is very likely to cure John of his infection and leave him with a mild stomachache, but also has a small chance that it will instead cause a fatal allergic reaction. When faced with a choice between giving John drug H or Risky S, it seems clear that we are morally required to treat him with H and morally prohibited from treating him with Risky S. After all, H guarantees an outcome that is no worse than any other possible outcome since the headache is not worse than either the stomachache or death. Risky S on the other hand risks an outcome that is worse than the headache (i.e. death) without offering any possibility of an outcome that is better (since the stomachache is incomparable to the headache). In this way, Risky S imposes an uncompensated risk of harm while H involves no such risk. This is so regardless of the specific (non-zero) probability of death associated with Risky S. So we should always treat John with H rather than Risky S, regardless of how low the (non-zero) probability of death from Risky S is.

While this verdict is intuitively compelling, I will argue that it cannot be accommodated by any act consequentialist theory that takes the headache and stomachache to be morally incomparable. That is, no act consequentialist theory will be able to morally condemn all instances of treating John with Risky S rather than H. Rather, whether the act consequentialist will proscribe the use of Risky S will depend on the non-zero probability of death involved even though that risk will always be uncompensated. More generally, no act consequentialist that accepts moral incomparability will be able to morally condemn all uncompensated risks of harm.

¹ Other plausible examples of moral incomparability include comparing the partial paralysis of an individual to the moderate traumatic brain injury of another, or, comparing a public policy that increases access to pre-k education to another that increases access to healthy foods.
Incomparability of Moral Value
It is important to first get clear on the sort of moral incomparability under consideration here. What I have in mind here is incomparability between two items that exhibits three key features. The first is that the two items are such that neither is better than, worse than, nor equal to the other with respect to overall moral value. Taking the symbols ‘≻’, ‘≺’, and ‘~’ to represent the relations of moral betterness, moral worseness, and moral equality, respectively, and the symbols ‘⊁’, ‘⊀’, and ‘≁’ to represent the absence of those same relations, respectively, we can represent the incomparability of the mild headache and mild stomachache as follows:


The second characteristic is that this moral incomparability persists even if one of the items is slightly improved or worsened. For instance if the mild stomachache were made slightly more painful, it would still be incomparable to mild headache:


The third feature is that this moral incomparability does not persist if one of the items significantly improved or worsened. For instance if the mild stomachache were made significantly worse so that it was an excruciating stomachache, it would no longer be incomparable to the mild headache. Rather the mild headache would be morally better than the excruciating headache:


What’s important about these two latter features is not there are some stomachaches that are only worse than the original stomachache, but not worse than the original headache, and other stomachaches that are worse than both. Rather, what’s important is that there are some items that are worse than only one of the original pair, and other items that are worse than both. Whether these items are stomachaches or something else is not of any importance. So the item that is worse than both the original headache and stomachache might be an excruciating foot injury, or, a terrible heartbreak, or even death. More generally, these three features of moral incomparability can be schematically represented as follows:
Figure 1: Schematic Illustration of Moral Incomparability

This figure represents the moral incomparability of the mild headache and mild stomachache by placing them on different continua. The mild headache (H) is placed on the left continuum while the mild stomachache (S) is placed on the right continuum. All items on the same continuum are either morally better than, worse than, or equal to each other. So the mild headache (H) is better than the slightly more painful headache (H-) and worse than the slightly less painful headache (H+). Likewise for the mild stomachache (S), slightly more painful stomachache (S-), and slightly less painful stomachache (S+). Each of the three headaches though are morally incomparable to each of the three stomachaches since they lie on different continua. Importantly, item A lies on both continua and is morally better than each of the headaches and stomachaches. So item A here might be having neither a headache nor a stomachache. Likewise, item D also lies on both continua, but is instead morally worse than each of the headaches and stomachaches. So item D here might be death. Now that the structure of the moral incomparability under consideration here has been articulated, we can turn to the implications of this incomparability on risk.

**Incomparability and Risk**

The first step to showing how act consequentialists cannot accommodate both moral incomparability and the condemnation of all uncompensated risks of harm is to draw a link between the moral incomparability of certain items and the moral incomparability of certain lotteries. Lotteries are items with multiple possible outcomes, each of which has some fixed probability of occurring, but where only one will be actualized. For example, the toss of a fair die where ‘1’ results in a $1 gain and any other number results in $0 is a lottery. Such lotteries can be represented more simply using the notation [p, x, y] where ‘x’ and ‘y’ are the possible outcomes of the lottery and ‘p’ is the probability of x actualizing (and so 1-p is the probability of y actualizing). So the lottery just mentioned can be represented as [1/6, $1, $0].
In this section, I will demonstrate how it must be the case that if a mild headache is incomparable to a mild stomachache (as illustrated in Figure 1), then the mild headache is also morally incomparable to a lottery that has the mild stomachache as a possible outcome and death as the alternative. To do this though, I have to make two further assumptions about moral value. The first assumption is that moral value is weakly continuous:

**Weak Continuity:** For any items \( x, y, z \), if \( x \succ y \succ z \), then there is some \( p^* \) between 0-1 (exclusive) such that \([p^*, x, z] \succ y\) and there is some \( p^{**} \) between 0-1 (exclusive) such that \( y \succ[p^{**}, x, z]\)

What this means is that for any three items where the first is morally better than the second and the second morally better than the third, there has to be at least one non-degenerate lottery with the best and worst items as possible outcomes that is morally better than the second item, and, there has to be another such lottery that is morally worse than the second item. So for instance, having no headache (A) is morally better than having a mild headache (H), which in turn is better than death (D). So, \( A \succ H \succ D \). Weak continuity then says that there has to be some non-degenerate lottery with no headache and death as the possible outcomes, represented as \([p^*, A, D]\), such that this lottery is morally better than the mild headache. That is, \([p^*, A, D] \succ H\).

Here \( p^* \) might be extremely high so that this lottery virtually guarantees no headache but does include a very small risk of death. Even so, it’s entirely plausible that this lottery would be morally better than the headache. Put another way, it is plausible that it is morally better to take an aspirin that will very likely relieve a headache but run a very slight risk of death than it is to not take the aspirin and suffer the headache.\(^2\)

The second assumption needed is that moral value is transitive:

**Transitivity:** For any items \( x, y, \) and \( z \), if \( x \succeq y \) and \( y \succeq z \), then \( x \succeq z \).

Here the symbol ‘\( \succeq \)’ represents the disjunctive relation of being morally better than or equal to. So what this means is that for any three items where the first is morally better than or equal to the second, and the second is morally better than or equal to the third, the first must also be morally better than or equal to the third. Transitivity is generally taken to be a property of betterness relations in general, so it’s natural to think that moral betterness bears this property as well.

Given these two assumptions about moral value and holding the mild headache to be incomparable to the mild stomachache (as illustrated in Figure 1), we can now demonstrate how the mild headache must also be incomparable to some lottery with a non-zero probability of death as an outcome and the mild stomachache as the alternative.

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\(^2\) Weak continuity also says that there has to be some non-degenerate lottery between the best and worst outcomes that is morally worse than the middle item. So there has to be a lottery, represented as \([p^{**}, A, D]\), that is morally worse than the mild headache. That is, \( H \succ[p^{**}, A, D] \). Here \( p^{**} \) might be extremely low so that this lottery virtually guarantees death but does have a small chance of resulting in no headache. In this case, it’s clearly plausible that such a lottery is morally worse than the headache and that it is morally better to suffer the headache than it is to take an aspirin that has such a high risk of death.
P1. \( S \succ S^{-} \succ D \) (from Figure 1)

P2. For any items \( x, y, z \), if \( x \succ y \succ z \), then there is some \( p^* \) between 0-1 (exclusive) such that \([p^*, x, z] \succ y\) and there is some \( p^{**} \) between 0-1 (exclusive) such that \( y \succ [p^{**}, x, z]\) (Weak Continuity)

C1. \([p^*, S, D] \succ S^{-}\) (from P1, P2)

P3. For any items \( x, y, \) and \( z \), if \( x \succeq y, \) and \( y \succeq z \), then \( x \succeq z \). (Transitivity)

C2. If \( H \succeq [p^*, S, D] \), and, \([p^*, S, D] \succeq S^{-}\), then \( H \succeq S^{-}\) (from P3)

P4. \( \neg (H \succeq S^{-}) \) (from Figure 1)

C3. Either \( \neg (H \succeq [p^*, S, D]) \), or, \( \neg ([p^*, S, D] \succeq S^{-}) \) (from C2, P4)

C4. \( \neg (H \succeq [p^*, S, D]) \) (from C1, C3)

P5. \( H \not\succ [p^*, S, D] \) (assumption)

C5. \( H \not\succ [p^*, S, D] \), and, \( H \not\prec [p^*, S, D] \), and, \( H \not\prec [p^*, S, D] \) (from C4, P5)

This argument proceeds by first assuming the moral betterness relations, or lack thereof, illustrated in Figure 1. While the mild stomachache is morally incomparable to the mild headache, it is still morally comparable to certain other items in Figure 1. In particular, the mild stomachache is morally better than the slightly more painful stomachache, which is in turn morally better than death (P1). Weak continuity (P2) is then applied, allowing us to conclude that there is some non-degenerate lottery involving the mild stomachache and death as possible outcomes, \([p^*, S, D]\), that is morally better than the more painful stomachache (C1). Transitivity (P3) is then assumed, which allows us to conclude that if the mild headache is morally better than or equal to \([p^*, S, D]\), and \([p^*, S, D] \succeq S^{-}\), then \( H \succeq S^{-}\) (from P3). However, the headache is not morally better than or equal to the more painful stomachache, since the two are morally incomparable (P4). It follows then that either the headache is not morally better than or equal to \([p^*, S, D]\), or, \([p^*, S, D]\) is not morally better than or equal to the more painful stomachache (C3). We’ve already established though that \([p^*, S, D]\) is morally better than the more painful stomachache, so it follows that the headache is not morally better than or equal to \([p^*, S, D]\) (C4). We can also safely assume (P5) that the mild headache is not morally worse than \([p^*, S, D]\), since it is not morally worse than the mild stomachache, which is clearly better than \([p^*, S, D]\). So it must be that the headache is neither better than, worse than, nor equal to \([p^*, S, D]\) with respect to moral value (C5). In short, the mild headache is morally incomparable to a lottery that has the mild stomachache as a possible outcome and death as the alternative.

It is important to note here that the conclusion reached in this section is an axiological one. It makes claims about the comparative moral value of different items, but says nothing about what we morally ought or ought not do. To reach conclusions about what morality prescribes or proscribes, we need to turn to moral theories that connect right action with moral value. In the next section, we turn to consequentialist moral theories that do precisely that.
Consequentialism, Incomparability and Risk
Consequentialism refers not to a single moral theory, but to a diverse family of moral theories. In what follows, I will focus on a particular subgroup called act consequentialism. What all forms of act consequentialism have in common is a tight connection between the moral rightness of an action and the moral value of the consequences of that same action. In particular, all act consequentialist theories endorse the following:

Deontic Supervenience Principle: If two available actions differ in deontic status, there must be some difference in the moral value of the available actions that favors the deontically superior option.

The idea here is that all act consequentialist moral theories hold the moral permissibility of an action to depend only on the moral value of the available options. So if there is a difference in the moral permissibility of two possible actions, this can only be because there is some difference in the moral value of those options that favors one of the actions over the other. Because all act consequentialist moral theories endorse this Deontic Supervenience Principle, we can then use it as the last step in showing how act consequentialist theories cannot adopt an axiology that admits of moral incomparability while also morally condemning all uncompensated risks of harm.

Q1 – H is morally incomparable to \([p^*, S, D]\)
Q2 – If two available actions differ in deontic status, there must be some difference in the moral value of the available actions that favors the deontically superior option. (Deontic Supervenience Principle)
D – In a choice situation between H and \([p^*, S, D]\) there is no deontic difference between choosing one rather than the other.

This argument proceeds by first appealing to the axiological conclusion reached in the last section, namely that the mild headache is morally incomparable to a lottery that will result in either the mild stomachache or death (Q1). We then invoke the Deontic Supervenience Principle just discussed (Q2). It then follows then that since there is no moral difference between H and \([p^*, S, D]\) that favors one over the other, there must also be no deontic difference between choosing H and choosing \([p^*, S, D]\) in a choice situation between the two. So it cannot be less permissible to choose \([p^*, S, D]\) rather than H.

Return now to the example from the beginning of the paper where we were considering whether to treat John with H, which would cure his infection but leave him with a mild headache, or Risky S, which would very likely cure his infection and leave him with a mild stomachache but also had a chance of causing a fatal allergic reaction. There it seemed morally impermissible to treat John with Risky S because it risks an outcome that is worse than the headache (i.e. death) without offering any possibility of an outcome that could serve to offset that risk. Choosing

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3 The most common form of act consequentialism is maximizing in nature, holding that the right action is that which brings about the most moral value. However, there are also satisficing versions of act consequentialism that hold an action to be morally permissible just in case it brings about some sufficient level of moral value. Both endorse the Deontic Supervenience Principle.
Risky S involves taking an uncompensated risk of harm, whereas choosing H does not. So it seems morally permissible to choose H, but morally impermissible to choose Risky S.\footnote{Or at the very least there seems to be a deontic difference between the choosing H and choosing Risky S that favors choosing H.}

We can see now though that \([p^*, S, D]\) is simply one possible version of Risky S. So choosing \([p^*, S, D]\) involves taking an uncompensated risk of harm, whereas choosing H does not. However, we’ve just seen that every act consequentialist theory must hold these two options to be deontically identical given their commitment to the Deontic Supervenience Principle and the moral incomparability of H to \([p^*, S, D]\). So no act consequentialist that holds the mild headache to be morally incomparable to the mild stomachache can morally condemn choosing \([p^*, S, D]\) in favor of choosing H. More generally, no act consequentialist theory that accepts moral incomparability can morally condemn all uncompensated risks of harm.