

# John B. Dilworth's Commentary on "Cutting Roadside Trees"

Commentary On  
Cutting Roadside Trees

Progress on this case can be speeded up by starting with a comprehensive overview, to avoid any risk of our accidentally failing to 'see the wood for the trees'. But seriously, it is helpful to step back from the specifics of the trees and the road in this case. Some general points about different kinds of risks, and their relation to environmental and other benefits, should help to clarify what is at stake in the case. My main emphasis will be on the complexities of decision-making in a case such as this.

There is a general concern in the development of social policy to achieve an acceptable balance between risks and benefits for people. Another way of raising the same or equivalent issues is to think of individual rights and freedoms (including the right or freedom to do things which may be risky or dangerous) as requiring to be balanced against the potential harms to oneself or to others produced by the exercise of one's freedom.

In balancing risks against benefits, it is useful to distinguish two different kinds or categories of risk. The first of these could be called 'inherent risks', and concerns actions, situations, devices etc. which are inherently risky or dangerous. An extreme example would be a hand grenade which has had the pin removed and has been thrown. Such a device is inherently dangerous to a very high degree, because it almost certainly will quickly explode and devastate everything in its vicinity, no matter what anyone tries to do to prevent it.

A more moderate example of inherent risk is provided by the activity of rock climbing. It is generally agreed that rock climbing is inherently risky, because no matter how one tries to minimize the risks and maximize climber safety (through training, stronger ropes, and so on), some significant degree of risk still remains. This is shown by the fact that good climbers are killed or injured in significant

numbers every year. The inherent nature of climbing risks has the consequence that the only way to avoid the risk of such accidents is not to climb at all.

Now let us look at the other basic category of risks, namely non-inherent or contingent risks. The important point about this category is that the risk for items falling under it depends on other situational or contextual features, so that members of this category have no standard level, nor any minimum level, of risk associated with them.

For example, the level of risk associated with driving an automobile depends upon indefinitely many other factors, such as the age of the car and driver, the speed, the road conditions, traffic density, and so on. Also, arguably there is no definite minimum level of risk associated with driving, that is, no inherent minimum risk associated with driving. (Those obsessed with achieving arbitrarily low risk levels could choose to drive only very slowly on empty or private roads, for instance.)

The significance of the basic distinction (inherent versus contingent risks) for public policy is as follows. With inherently risky activities, the risk is a known quantity, or at least a lower bound can be set on it, so that the activity is at least as risky as that lower bound. (For example, perhaps the lower-bound of risk for rock-climbing is something like 1 accident for each 500 person-days of climbing. Doubtless insurance actuaries would have precise figures on this, or at least on average risks for each activity.)

Given that inherent risks have a strength which is a known, relatively unchanging quantity, it is relatively straightforward to compare and balance them against the potential benefits of allowing them to take place. For example, NASA undoubtedly has good calculations on how likely it is that a space shuttle, or an orbiting satellite, will be involved in a collision with a meteorite sufficiently large to seriously damage the space vehicle and abort its mission. (Such a risk is an inherent one because collisions occur randomly, so it is impossible to remove the risk by any alterations to the vehicle, environment or other factors.) With a reliable estimate of the minimum risk, along with the known potential benefits of a flight, it becomes a very routine matter to make a rational 'go/no go' decision on whether to allow a given flight.

Another public policy example would be a decision as to whether to make an influenza vaccine available. This is inherently risky (at a low level of risk), because an irreducible percentage of people will have adverse reactions to the vaccine. But

again, a positive or negative decision as to use can be straightforward because the standard minimum risk can easily be compared with the specific potential benefits of the treatment.

On the other hand, risk/benefit comparisons in the case of non-inherent, contingent risks have a fundamentally different structure. It might be thought that their only difference from 'inherent risk' cases is that the risk is a variable quantity, with the particular amount in a given case depending on the specific situations or factors that exist. (For example, driving an old car very fast is likely to be much more risky than driving a new car slowly.)

But in addition to the risk being variable, the overall decision to be made (about whether to engage in an activity, given the benefits and risks involved) is now required to be a much more comprehensive, overall decision about a whole set of risk/benefit data pairs. Recall that for inherent risks, the only decision needed is a yes/no decision based on a single risk/benefit pair. But with a contingent risk case, there are now many possible risks, depending on various factors (the benefits might vary also). These many risks, along with the corresponding specific benefits, define many risk/benefit pairs which somehow must be evaluated as a group.

It will help to clarify things further if we re-introduce the main example from the current case, namely the risk(s) to motorists that they might crash into trees along a 3-mile stretch of Forest Drive road. The risks are of course associated with motorists driving cars along the road. It has already been argued that driving is a contingent risk activity (the risk depending on speed, etc.) Let us concentrate on the trees themselves as the only relevant benefit.

Our general question could be expressed as follows: is it worthwhile for motorists to risk crashing into the trees, given the benefits also provided by the trees? Or, acknowledging that the trees are just one additional risk among others associated with driving, we might ask: are the additional risks of having trees (rather than no trees) fully compensated for by the additional benefits of having trees (over not having trees)?

If we assume that no changes to traffic regulations, etc., are to be made, the relevant risk/benefit pairs are defined by all socially possible distinct cases of 'a drive' along the road (given present conditions). Each is distinguished on the risk side by driver factors (age, disabilities, driving record, frequency of driving...), car

factors (new/old, brand, maintenance quality, speed...), road factors (maintenance, traffic density, time of day...), and environmental factors (weather, immediate environment of road including trees...). On the benefit side, arguably this too is variable, for example because very fast trips or night versus day driving make visual enjoyment of the trees difficult or impossible.

Somehow, using this potentially infinite set of risk/benefit pairs, some decision must be made about the overall benefits and risks of allowing the trees to remain uncut. One might consider calculating some sort of average or mean value for the risk and benefit, but an overall decision might be dominated by just a small group of high-risk cases. (Some unlikely situations may be so dangerous that a decision to cut the trees is unavoidable.)

In the current case being considered, the possibility of a successful lawsuit if there is an accident is yet another complication. This risk is not itself involved in the initial set of risk/benefit pairs. Rather, given a decision (based on that set) to leave the trees standing, the lawsuit is one of the risks associated with that specific decision.

As if things are not complicated enough already, yet another whole dimension of the problem must briefly be considered. Since we are dealing with contingent risks, it is very tempting to try to 'mould' the overall situation and the factors involved so as to make a desired outcome (e.g., leave the trees standing) highly likely.

For example, new traffic regulations lowering the speed limit, with automatic radar detection and photography of those violating the regulations, could presumably eliminate virtually all of the original high-risk cases associated with speeding. Or should we use some other method instead? What would be the risks and benefits of each? Notice that we now are forced to somehow compare (formally speaking) the risks and benefits of different risk/benefit sets, in making such a decision.

It might be objected at this stage that 'molding' factors so as to get a desired result amounts to simply ignoring the original problem, which is that of which result is socially or morally most desirable. I would concede this point, but it points us toward even greater complexity.

It seems that somehow we have to consider all socially possible 'moldings' of factors relevant to the situation (each with its associated set of risk/benefit pairs), whether the overall outcome for each is 'yes, cut' or 'no, don't cut'. Then somehow (again), the overall risks and benefits of each set have to be evaluated relative to each

other, so that a single winner (or group of similar winners) can be chosen. Its (their) decision outcome, as to whether to cut down the trees or not, would finally give us what we have been searching for in this case.

In conclusion, it is worth noting that the complexities in decision-making we have uncovered in connection with contingent risks are particularly common in dealing with environmental public policy issues (e.g., building of condominiums versus preservation of wetlands). Any situations involving loosely related factors and complicated tradeoffs will tend to have at least the same degree and kinds of complexity of decision-making as those discussed here.