An obedient gang is ordered by its leader to join him in murdering someone, and does so, all of them shooting the victim at the same time, or all of them together pushing the plunger connected to a bomb. The action of any one of the gang would suffice for the victim's death. If responsibility implies causality, whom among them is responsible? ... Halpern's theory says the gang leader and only the gang leader is a cause of the victim's death. This is a morally intolerable result; absent a plausible general principle severing responsibility from causation, any theory that yields such a result should be rejected.

Bombing

We now go through the details for the **Bombing** example. (Ex. 6) We need to consider the following four scenarios:

1. $S_2 = 1$ and $S_1 = 0$
2. $S_2 = 1$ and $S_1 = 1$
3. $S_2 = 0$ and $S_1 = 0$
4. $S_2 = 0$ and $S_1 = 1$

We first go through the details for CNESS-causation.

In scenario 1 we have that $S_1 = D_1 = D_3 = 0$ and $S_2 = D_2 = B = 1$. Here $\{S_2 = 1, S_1 = 0\}$ is sufficient for D_2, whereas $\{S_1 = 0\}$ is not. Therefore $S_2 = 1$ directly NESS-causes $D_2 = 1$. Clearly also $D_2 = 1$ directly NESS-causes $B = 1$, and thus $S_2 = 1$ NESS-causes $B = 1$ along $\{S_2, D_2, B\}$. What about the counterfactual setting $(M_{S_2 \leftarrow 0}, \vec{u})$? That corresponds to scenario 3. There, the bomb doesn't even explode (so $B = 0$), and thus there are no causes of $B = 1$. We conclude that in scenario 1 $S_2 = 1$ CNESS-causes $B = 1$.

In scenario 2 we have that $S_1 = S_2 = D_3 = B = 1$ and $D_1 = D_2 = 0$. In this scenario $B = 1$ is directly NESS-caused only by $D_3 = 1$. Since $S_2 = 1$ does not directly NESS-cause $D_3 = 1$, it is not a NESS-cause of $B = 1$.

In scenario 4 we have that $S_1 = D_1 = D_3 = B = 1$ and $S_2 = D_2 = 0$. Here $\{S_2 = 0, S_1 = 1\}$ is sufficient for D_1, whereas $\{S_1 = 1\}$ is not. Therefore $S_2 = 0$ directly NESS-causes $D_1 = 1$. Clearly also $D_1 = 1$ directly NESS-causes $B = 1$, and thus $S_2 = 0$ NESS-causes $B = 1$ along $\{S_2, D_1, B\}$. What about the counterfactual setting $(M_{S_2 \leftarrow 1}, \vec{u})$? That corresponds to scenario 2, in which $S_2 = 1$ does not NESS-cause $B = 1$. So $S_2 = 0$ CNESS-causes $B = 1$ in scenario 4.

As a result, if $Assassin_2$ chooses $S_2 = 1$, the probability of CNESS-causing $B = 1$ is the probability that $S_1 = 0$, which is 0.4. By contrast, if $Assassin_2$ chooses $S_2 = 0$, the probability of CNESS-causing $B = 1$ is the probability that $S_1 = 1$, which is 0.6.

NESS-causation for each scenario is already discussed in the above, so we move on to consider HP-causation. In scenario 1 we have counterfactual dependence of $B = 1$ on $S_2 = 1$, and it is well-known that this suffices for HP-causation (as well as for CNESS-causation, by the way [2]).

In scenario 2, note that D_3 suffices for $B = 1$, and thus satisfying AC2 is possible only when either $D_3 = 1$ or $S_1 = 1$ is also part of the candidate cause $\vec{X} = \vec{x}$. However, $B = 1$ counterfactually depends on $D_3 = 1$, meaning that $D_3 = 1$ is a cause all by itself. Thus $\{S_2 = 1, D_3 = 1\}$ is not minimal, and because of AC3 this means that it is not a cause. That leaves $\{S_2 = 1, S_1 = 1\}$. But this is not minimal either, for $S_1 = 1$ is a cause all by itself: one can take $\vec{W} = \{D_2\}$ as a witness to get $B = 0$ when S_1 is set to 0. Therefore $S_2 = 1$ is not part of any cause of $B = 1$.

Since $B = 0$ in scenario 3, $S_2 = 0$ does not HP-cause $B = 1$ there either, leaving scenario 4. As with scenario 2, the candidate cause will have to include $D_3 = 1$ or $S_1 = 1$. Contrary to scenario 2 though, $D_3 = 1$ is no longer a cause by itself, since $D_1 = 1$ holds, and will remain to hold also when we set D_3 to 0. Since $B = 1$ counterfactually depends on $\{S_2 = 0, D_3 = 1\}$, we get that each of them HP-causes $B = 1$.