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The Relevance of Alternate Possibilities for Moral Responsibility for Actions and Omissions

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1. The Principle of Alternate Possibilities and the Action/Omission Asymmetry

Can an agent be morally responsible for an outcome she could not have avoided? The *Principle of Alternate Possibilities* (PAP) states that for an agent to be morally responsible, the agent must have been able to do other than performing the action she actually performed. Thus, if we figured out that an agent's action and its consequences were fully necessitated so that the agent could not have done otherwise, then the agent is blameless for whatever consequences she caused by acting. This principle enjoys some great prima facie plausibility. We typically do not blame others for performing an action if we find out that she acted under severe duress or coercion, suffers from paralysing anxiety, obsessive-compulsive disorder, or was physically unable to act in any other way.

However, due to the work of Frankfurt (1969) and many others who followed (e.g., Blumenfeld, 1971; Dennett, 1984; Fischer and Ravizza, 1991, 2000; Zimmerman, 1988), PAP is the subject of an intense debate. Imagine that an evil neurosurgeon implanted a microchip into Agent's

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brain with the help of which he is able to perfectly predict Agent's decisions and to manipulate these decisions and the subsequent actions. Agent is about to shoot Victim, and the neurosurgeon wants Victim's death. In the unlikely event that Agent decides against shooting Victim, the neurosurgeon will intervene and make Agent shoot Victim anyway. As a consequence, Agent will shoot and kill Victim no matter what. Agent cannot *not* shoot Victim. As a matter of fact, though, Agent never wavers in his decision and shoots Victim without the neurosurgeon's intervention. Call this case *Shooting*. In such a case, so many have argued, Agent is morally responsible for Victim's death, even though Agent could not have *not* shot Victim (Blumenfeld, 1971; Dennett, 1984; Fischer and Ravizza, 1991, 2000; Zimmerman, 1988). Thus, PAP cannot be true, as alternative possibilities are not *necessary* for moral responsibility.

While many philosophers are convinced that so-called Frankfurt-style cases like Shooting are counterexamples to PAP, it is much less questioned when it comes to omissions. Suppose Victim is drowning, and Agent is the only person around. Agent decides not to jump into the water to help Victim, and Victim dies. However, unbeknownst to Agent, the water is infested with sharks. Had Agent tried to save Victim, the sharks would have attacked and prevented Agent from saving Victim. Again, there is no way that Agent could have saved Victim. Call cases like these *Sharks*. Is Agent morally responsible for Victim's death? Some authors have denied this (e.g., Clarke, 1994; McIntyre, 1994). In order to be morally responsible for the consequences of an omission, so it is argued, the agent needs to be able to perform a relevant action that would have prevented the outcome. Thus, PAP seems to be true in cases of omissions.

Based on contrasting cases like Shooting and Sharks, it has been concluded that there is a moral asymmetry between actions and omissions with respect to the role of alternative possibilities (Clarke, 1994; McIntyre, 1994). For instance, Sartorio (2005, p. 461) describes it as follows: "whereas an agent can be responsible for an *action* even if he couldn't have done otherwise, an agent cannot be responsible for an *omission* if he couldn't have done otherwise" (emphases in original). Call claims like these the *Action/Omission Asymmetry Thesis* (AOAT).

2. Structure and Aim of the Chapter

In this chapter, I empirically investigate whether non-philosophers' moral evaluations provide evidence in support of a moral asymmetry between actions and omissions with respect to alternative possibilities. The experimental-philosophical debate has demonstrated a significant interest in the relevance of alternative possibilities for the attribution of moral responsibility. Researchers have provided evidence that agents are often held responsible in the absence of alternative possibilities (Bear and Knobe, 2016; Buckwalter and Turri, 2015; Feltz and Cova, 2014; Henne et al., 2016; Miller and Feltz, 2011; Nahmias et al., 2005, 2006; Nichols, 2004; Sarkissian et al., 2010; Turri, 2017).[2] However, in doing so, researchers have had a strong focus on actions, thereby neglecting omissions.[3] As a consequence, while it is often argued that alternative possibilities are not a necessary precondition for moral responsibility for actions, we lack evidence about this relationship for omissions. The aim of this chapter is to fill this lacuna and empirically investigate what non-philosophers think about the relevance of alternative possibilities for omissions.

To set the stage for the subsequent experiments, I will first outline the relevant arguments against AOAT (Sections 3 and 4). From these arguments, I will infer empirically testable predictions about which factors determine moral responsibility in the absence of alternative possibilities. I present four pre-registered experiments to test these predictions. In Experiment 1, I test whether the absence of alternative possibilities affects non-philosophers' moral judgments about an agent's action and the consequences resulting from it. In Experiment 2, I test the same experimental manipulation for omissions. In both Experiment 1 and 2, I strongly rely on the cases discussed in the philosophical literature. Since philosophers have put so much argumentative weight on these cases, we should test exactly those cases to see how philosophical

[2] Note that these papers start off from various research questions. While some researchers are interested in the connection between free will and alternative possibilities, others are interested in the so-called ought-implies-can principle. What unites these studies is that they all collect data on whether participants blame the agent despite the lack of alternative possibilities.

[3] One notable exception is Miller and Feltz (2011). In two experiments, they investigate the relevance of alternative possibilities for actions and omissions, using Frankfurt-style cases.

thought experiments play out when asking for the folk's opinion. In Section 7, I discuss the methodological and philosophical shortcomings of those cases, and, consequently, my own experiments. I argue that the philosophical debate has not provided us with cases that allow for methodologically sound experiments. For this reason, the experiments will necessarily be limited with respect to the conclusions we can draw from them. In Experiment 3, I attempt to create a novel design that fixes those problems, and I will test this design using two types of scales.

3. Objections against the Action/Omission Asymmetry

Several arguments have been presented against AOAT. Before engaging with them more closely, we need to disentangle the meaning of PAP and specify how it applies to AOAT.

PAP has played a crucial role in the free will and moral responsibility debate. Following Frankfurt (1969), it is often formulated like this:

(PAP): An agent is morally responsible for what she has done only if she could have done otherwise.

But what does it mean to be responsible for something one has done, and what is required for it to be the case that she could have done otherwise (see Miller and Feltz, 2011 for a similar discussion)? According to one understanding of PAP, free will and moral responsibility require that an agent's action must result from her own choice among a variety of options. Consequently, an agent acted freely and is morally responsible if there were alternative courses of actions the agent could have chosen instead. Note that this understanding focuses on the agent's *action* and, in particular, the *situational circumstances when initiating the action*. Call this the *Principle of Alternative Actions* understanding of PAP. In the philosophical tradition, many arguments for incompatibilist positions concerning free will have relied on the assumption that the Principle of Alternative Actions is true and, thus, if determinism is true, free will is conceptually impossible (Ginet, 1982; Keil, 2007; van Inwagen, 1975; Wegner, 2003). As free will is typically considered a necessary precondition for moral responsibility, the lack of alternative

possibilities implies the lack of moral responsibility (McKenna and Coates, 2016; O'Connor, 2016).

Second, a different understanding of PAP does not focus on the circumstances under which the action was initiated, but it takes the action to be defined by its *consequences* (for such an understanding of PAP, see, among others: van Inwagen, 1983, 1999; Sartorio, 2005). An agent is morally responsible for *killing* a man, if the consequence of her action is the death of a person, and if this death could have been prevented. If the victim would have died no matter what, the agent is not morally responsible. Call this the *Principle of Alternative Outcomes* or, as Miller and Feltz (2011) call it, the *Principle of Possible Prevention*. In Shooting, Agent could not have prevented Victim's death, because of the evil neuroscientist. As a consequence, Agent could not have done otherwise in the sense that he could have avoided killing the Victim. Victim's death was without alternatives. In Sharks, Agent could not have prevented Victim's death because the sharks would have attacked him. As a consequence, Agent could not have done otherwise in the sense that he could not have saved the child. Again, Victim's death was without alternatives.

It is this latter understanding of PAP that builds the starting point for the philosophical debate about AOAT. The asymmetry consists in the claim that while in both cases the outcome could not have been prevented, Agent is morally responsible and blameworthy when the death was brought about by an action (Shooting), and he is not morally responsible and blameworthy when it was brought about by an omission (Sharks).

When reading Sharks, did you have the intuition that Agent *is* morally responsible? If you did, you might think that there is no asymmetry after all, as alternative possibilities are irrelevant in both Sharks and Shooting. Defenders of AOAT agree with you that Agent is morally responsible and that he deserves blame for something. For instance, it is not denied that he is morally responsible and blameworthy for his *decision* not to save the child, for *not even trying*, for his *malicious thoughts* about the child, etc. However, the crucial point is that he is neither responsible nor blameworthy for the child's *death*. Why not? Because the death is something that he could not have prevented, and when it comes to omissions, alternative possibilities concerning the outcome are

necessary for moral responsibility and blameworthiness. Thus, for the discussion at hand, it is important to keep these different moral judgments separate and to focus on our intuitions about the agent's moral responsibility and blameworthiness *for the outcome of their actions and omissions alone*.[4]

So how convincing is AOAT? Against AOAT, Fischer and Ravizza (1991, 2000) and Fischer (1997) have objected that Shooting and Sharks are not relevantly similar. The two stories do not only differ in the type of behavior (action vs. omission), but also in the point in the causal history of Victim's death at which the relevant intervention would have occurred. In Shooting, the evil neuroscientists would have intervened on Agent's decision-making process. Had he shown the slightest tendency toward making a decision not to shoot Victim, the neuroscientists would have made sure that Agent decided to shoot Victim. In contrast, in Sharks, there would have been no intervention on the decision-making process. Agent would have decided to try to save the child and would have already initiated the relevant action when the intervention occurs. The sharks would have simply prevented Agent from succeeding in his attempt to save Victim.[5]

To ensure the relevant similarity, Fischer and Ravizza (1991) suggest a different case that better matches the structure of Shooting, namely the Frankfurt-Style Omission Case (FSOC):

Frankfurt Style Omission Case. I see the child drowning, I think I can save him by jumping into the water, but I freely decide not to jump in. This time there are no sharks in the water, but the evil neuroscientist is

[4] This thought becomes relevant when designing the experiments. As an experimental researcher, you want to make sure that participants are aware that the agent could be blamed for different things and to keep them distinct when making their moral judgments. See Section 5.2 for an elaboration of how I tried to help participants keep these importantly different moral judgments apart.

[5] It might be argued that what Fischer and Ravizza are concerned with is that the two cases violate the two understandings of PAP in different ways. In Sharks, the agent could not have done otherwise as defined by the outcome (understood in line with PAP); he could have brought about the outcome in a different way (understood in line with PAP in the Garden of Forking Paths sense). He might have failed in his attempt to save the child, but the child would have died in a different way, namely in a scenario in which someone died trying to save her. In Shooting, Agent could not have altered the way he acted. Because of the neuroscientists, Agent would have performed the same bodily movement in both cases. Unfortunately, Fischer and Ravizza do not make this claim explicit.

monitoring my brain. Had I wavered in my decision, he would have made me decide not to jump in.[6]

In this case, so Fischer and Ravizza argue, Agent is morally responsible for Victim's death—even though there was no way he could have prevented the death. As a consequence, if we do contrast relevantly similar cases,[7] the asymmetry between actions and omissions with respect to the relevance of alternate possibilities disappears. If the point of intervention is chosen to be the decision-making process,[8] alternate possibilities are not necessary, neither for actions nor omissions. Thus, we can reject PAP altogether and with it AOAT.

Jeremy Byrd agrees with Fischer and Ravizza that Sharks is not an adequate contrast for Shooting. However, he disagrees on why this is. According to Byrd (2007), the point of intervention is actually irrelevant for moral responsibility judgments about these cases. However, Shooting and Sharks differ in a crucial respect, namely the kind of intervener in play. In Shooting, the intervener is an intentional human agent, whereas in Sharks, the intervener is a non-agent—it is the natural, non-agentive world not playing along. Against Fischer and Ravizza's original position, Byrd claims that only intentional human agents can play the role of a Frankfurt-style intervener. As a consequence, if the sharks were replaced by another human agent, intuitions in both the action and the omission case should be identical: First, Agent is to blame for the child's death when a human agent intervenes on either my decision-making or my behavior, diminishing my possibilities to prevent the outcome. Second, as a consequence, PAP is false as Agent is morally responsible in the absence of alternative possibilities. Third, since PAP is proven false for omissions, AOAT is false and actions and omissions are symmetric with respect to the relevance of alternative possibilities.

[6] Taken from Sartorio (2005).

[7] Please note that there are good reasons to doubt that Shooting and FSOC are relevantly similar. I will discuss some of those reasons in Section 6. For now, I simply reconstruct the philosophical debate.

[8] This is, of course, not trivial and an argument could be made that the right point of intervention is, in fact, the action itself, not the decision-making process. Philosophers in the moral luck debate might make such an argument.

4. Toward an Experiment

From the existing work, we can extract three different suggestions of what factors are relevant for determining the role that alternate possibilities play for moral responsibility for the consequences of actions and omissions:

1. the point of intervention (decision-making process vs. behavior),
2. the intervener (agent vs. nature), and
3. the type of behavior (action vs. omission).

Ideally, the resulting experiment would consist of eight between-subject conditions that differ with respect to the first three factors: Type of Behavior (Action vs. Omission), Intervener (Agent vs. Nature), and Point of Intervention (Behavior vs. Decision-Making). As a within-subject factor, one might want to manipulate whether the outcome could have been prevented or not, to be able to detect how much people's responses differ between those two conditions. As dependent measures, participants would be asked to express their moral evaluation of the story.

Unfortunately, things are not that simple. To avoid potential confounding variables, all eight between-subject conditions should be tested using the same cover story. Yet, the two stories that have been used in the debate so far, namely Shooting and Sharks, do not allow for adaptations to omission and action cases, respectively. What is an omission comparable to the shooting of a person? A not-stopping of a shooting? What action is comparable to not helping a drowning person? Pushing someone into deep water?[9] None of the stories used in the literature so far can easily be adapted, such that they apply equally to actions and omissions without introducing potentially relevant asymmetries. We would need to come up with an entirely new cover story that might deviate quite strongly from those stories that have mainly influenced the philosophical debate.

[9] For a discussion of why such contrasts are problematic, see Willemsen and Reuter (2016). In short, our legal system and our everyday practice treat cases of killing and not helping very differently in terms of their moral evaluation. This is partly explained by the fact that the rules that are violated when we kill or not help are considered differently important. Willemsen and Reuter, therefore, argue that we should only compare actions and omissions for cases in which we have less socially and culturally grounded preconceptions.

As a consequence, the results would only speak indirectly to the predictions that philosophers have made about Shooting and Sharks. For this reason, Experiment 1 and 2 will use a more direct, yet methodologically sub-optimal design and test the philosophical thought experiments used in the debate. In Experiment 3, I will then correct those flaws and use a new, methodologically sound cover story.

When we think of testing philosophical theories, one major challenge is often to translate philosophical language into empirically testable queries. For instance, in the literature, philosophers have often discussed the relevance of alternative possibilities for the abstract concept of "moral responsibility." And sometimes in these discussions, "being morally responsible for X" seems to be treated as synonymous to "being blameworthy/praiseworthy for X" (for a similar discussion, see Miller and Feltz, 2011 and Turri, 2017).[10] However, in the experimental literature on moral cognition, we often find that moral responsibility judgments might differ strongly from judgments about blameworthiness (Turri, 2017). There is no obvious reason to pay attention to one moral judgment rather than the other when testing philosophical theories. For this reason, the following experiments will ask participants to evaluate an agent's moral responsibility *and* blameworthiness. I will discuss how the results of the experiments speak to or against PAP and AOAT, and also whether it makes a difference if we consider PAP and AOAT to be about moral responsibility or blameworthiness.

5. Experiment 1: Actions

In Experiment 1, I test whether alternative possibilities are relevant factors in deciding if an agent is morally responsible and blameworthy for the consequences of his or her actions. This experiment, as well as all following experiments, were pre-registered with the Open Science Framework (https://osf.io/6bfna/). Table 10.1 summarizes the main

[10] Malle et al., 2014 have argued that 'responsibility' should not be used by researchers in empirical studies, as it is "hopelessly equivocal" and "collapses distinct phenomena under a single label."

Table 10.1 Experiment 1. Philosophical claims and predictions

Claim	Prediction	Held by
Alternative possibilities are not necessary for the attribution of moral responsibility (same claim for blame).	Moral responsibility ratings will be above the midpoint of the scale (4) when the agent cannot do otherwise (same predictions for blame).	AOAT, Fischer, Fischer and Ravizza, Byrd.

claims of defenders of AOAT, Fischer, Fischer and Ravizza, and Byrd, and the empirically testable predictions.[11]

5.1 Sample size rationale and participants

The tests required to evaluate the philosophical hypotheses were t-test against the midpoint of the scale. A power analysis revealed that 72 participants for each of the four between-subject conditions were needed to detect a small to medium effect ($d = 0.35$) with 90% power (one-tailed). Thus, the results are reported for the first 72 participants in each condition who completed the survey in no less than 90 seconds and passed the manipulation check (question named "Unavoidable").[12] Participants were recruited on Amazon's Mechanical Turk and received monetary compensation ($0.40). 52.8% of participants were male, 47.2% female, the mean age was 38 years ($SD = 13$). All but five participants indicated English as their native language, and all participants were located in the United States while taking the survey.

5.2 Methods

A 2 (Intervener: Agent vs. Nature) × 2 (Point of Intervention: Decision Making vs. Behavior) × 2 (Alternative Possibilities: Yes vs. No) mixed

[11] None of the authors makes any of these predictions explicitly. They are rather the predictions that I infer from the philosophical claims they do make. The same holds for Experiments 2 and 3 as well.

[12] 472 participants were tested, 348 of which passed the manipulation check. Only the first 288 of those participants to finish the survey were included in the analysis. Thus, 124 participants were excluded for failing the manipulation check, and 60 because of the sample size rationale.

Table 10.2 Vignettes used in Experiment 1.

Introduction	Bob[/Joe/Rob/Jack] is pointing a gun at Bill whom he detests and wants dead. Bob deliberately decides to pull the trigger, he pulls the trigger, and Bill dies.	
	Person	**Nature**
Decision-Making	Unbeknownst to Bob, an evil neurosurgeon has implanted a microchip into Bob's brain and is secretly monitoring his brain. Had Bob wavered in his decision to shoot Bill, the neurosurgeon would have sent a signal to Bob's brain that would have ensured that he decided to shoot Bill anyway. As a consequence, Bill would have died no matter what.	Unbeknownst to Joe, he recently got exposed to a chemical substance that affects Joe's behavior. Had Joe wavered in his decision to shoot Bill, the drug would have ensured that he decided to shoot Bill anyway. As a consequence, Bill would have died no matter what.
Behavior	Unbeknownst to Rob, an evil busybody is observing the situation and already in position to roll a large rock off a cliff onto Bill. Had Rob not shot, the evil busybody would have rolled the large rock onto Bill which would have killed him instead. As a consequence, Bill would have died no matter what.	Unbeknownst to Jack, Bill is standing right below a rock that is about to fall off a cliff. Had Jack not shot, the falling rock would have killed Bill instead. As a consequence, Bill would have died no matter what.

design was applied, with Intervener and Point of Intervention as between-participants factors and Alternative Possibilities as a within-subject factor.

First, all participants read the introduction (Table 10.2) describing an agent who shoots a victim, Bill, leading to Bill's death. After reading the introduction, participants were asked five questions[13] and provided their answers on a scale from "1" meaning "not at all" to "7" meaning "fully":

[13] Since Moral Responsibility uses the formulation most in line with the philosophical debate, this question is always presented first, on a separate page. After answering Moral Responsibility and proceeding to the following page, participants could not go back to alter their judgment. The subsequent four questions were presented in fixed order on the same page to increase awareness of the difference between, for instance, being blameworthy for one's decision vs. being responsible for the death.

Unavoidable: Please indicate if you rather agree or disagree with the following statement: "In this scenario, Bill's death was unavoidable."

Moral Responsibility: How much do you agree with the following statement? "Bob [/Joe/Rob/Jack] is morally responsible for Bill's death."

Blame (Not Trying): How blameworthy is Bob [/Joe/Rob/Jack] for not trying to spare Bill's life?

Blame (Decision): How blameworthy is Bob [/Joe/Rob/Jack] for his decision to shoot Bill?

Blame (Outcome): How blameworthy is Bob [/Joe/Rob/Jack] for Bill's death?

After providing their answers, participants were randomly assigned to one of the four between-subject conditions (Table 10.2). Participants were told that this was only part of the story and asked to now read the rest of it. Participants then answered all five questions again, as well as an additional question about whether and to what extent the additional information affected their thoughts about the agent.

To speak to the question of whether the absence of alternative possibilities diminishes moral responsibility and blame, it is crucial that all participants believed Bill's death to be unavoidable in the No Alternative Possibilities Condition. For this reason, I used people's responses to the Unavoidable question as a manipulation check and a selection criterion. Only those participants who agreed that in the No Alternative Possibilities condition Bill's death was unavoidable, were accepted for analysis.

The questions Blame(Not Trying), Blame(Decision) and Blame-(Outcome) were presented on the same page. It might be argued that there are several things for which participants are inclined to blame the agent, namely for not even trying to spare Bill's life, for the decision to shoot him, and also for Bill's death (see Section 3). For the purpose of this study, it is crucial to keep these three different targets of blame separate, and more specifically to ensure that people's blame judgment for the outcome is only an evaluation concerning the *outcome*. Thus, while the question of interest is Blame(Outcome), the two additional blame questions are asked to trigger reflective thinking. But since they

do not matter for the research question at hand, results are only reported for Moral Responsibility and Blame(Outcome).

5.3 Results

Figure 10.1, Figure 10.2, and Table 10.3 summarize the results of the descriptive analysis. Table 10.3 further presents the t-tests against the midpoint of the scale. The results confirm the philosophical predictions in two ways. First, in the Alternative Possibilities Yes condition (that is, the first set of ratings before alternative possibilities were restricted), both moral responsibility and blame ratings are above the midpoint of the scale and almost reach ceiling. Thus, participants clearly hold the agent responsible and consider him blameworthy for the outcome of his action. In addition, in all four Alternative Possibilities No conditions (that is, the second set of ratings, after alternative possibilities were restricted in some way), moral responsibility and blame ratings are significantly above the neutral midpoint of 4. Those results speak against PAP and in support of its critics, as alternative possibilities are not necessary for moral responsibility for actions.

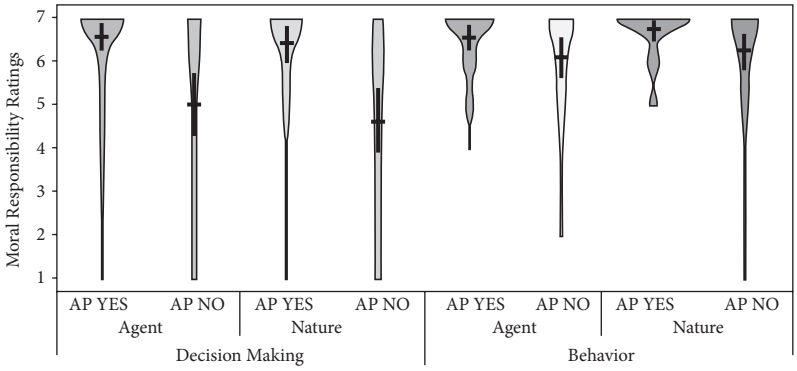

Figure 10.1 Experiment 1. Mean ratings for moral responsibility, as a function of Point of Intervention, and Intervener and Alternative Possibilities, with '1' meaning 'not at all' and '7' meaning 'fully'.

Note: Horizontal black lines represent means, vertical black lines represent 95% CI. The width of the shapes around the mean is proportional to the number of participants choosing each answer option.

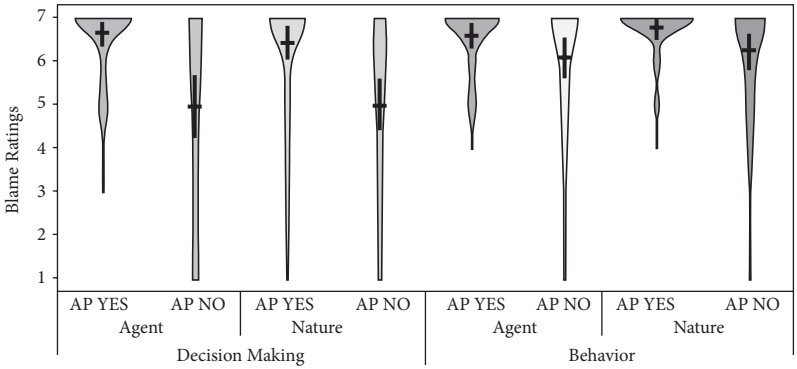

Figure 10.2 Experiment 1. Mean ratings for blame, as a function of Point of Intervention, and Intervener and Alternative Possibilities, with '1' meaning 'not at all' and '7' meaning 'fully'.

Note: Horizontal black lines represent means, vertical black lines represent 95% CI. The width of the shapes around the mean is proportional to the number of participants choosing each answer option.

To test for effects beyond philosophers' predictions, mixed-measure ANOVAs were conducted for the dependent variables moral responsibility and blame (outcome), with the within-subject condition Alternative Possibilities.

For the dependent variable moral responsibility, I found significant main effects of Point of Intervention, $F(1, 284) = 37.68$, $p < .001$, $\eta^2 = 0.117$, and of Alternative Possibilities, $F(1, 284) = 89.77$, $p < 0.001$, $\eta^2 = 0.240$. Moral responsibility ratings were higher when the Point of Intervention was the behavior, compared to when it was the agent's decision-making process. Further, moral ratings were also higher in the Alternative Possibilities Yes condition, compared to when alternative possibilities were ruled out. There was a significant two-way interaction between Point of Intervention and Alternative Possibilities, $F(1, 284) = 29.56$, $p < 0.001$, $\eta^2 = 0.094$, such that in Decision-Making moral responsibility was reduced significantly more compared to Behavior. No other main effect or interaction was significant.

Similar results were obtained for the dependent variable blame.[14] There were significant main effects of Point of Intervention, $F(1, 284) = 27.70$,

[14] To test whether moral responsibility and blame ratings differed significantly from each other in the Alternative Possibilities No conditions, a mixed-measure ANOVA was conducted. There was no main effect of Question, $F(1, 284) = 0.514$, $p = 0.474$. This test was not pre-registered.

Table 10.3 Experiment 1. Descriptive statistics and t-test against midpoint of the scale '4'.

			Means	SD	t	df	p (one-tailed)	d
Alternative Possibilities Yes		Moral Resp	6.59	0.898	48.929	287	**<0.001**	2.884
		Blame	6.61	0.904	49.028	287	**<0.001**	2.887
Alternative Possibilities No	Decision/Agent	Moral Resp	5.07	2.26	4.015	71	**<0.001**	0.473
		Blame	4.93	2.352	3.358	71	**<0.001**	0.395
	Decision/Nature	Moral Resp	4.64	2.058	2.635	71	**<0.001**	0.311
		Blame	5.01	2.024	4.25	71	**<0.001**	0.499
	Behavior/Agent	Moral Resp	6.14	1.225	14.811	71	**<0.001**	1.747
		Blame	6.11	1.43	12.53	71	**<0.001**	1.476
	Behavior/Agent	Moral Resp	6.28	1.292	14.964	71	**<0.001**	1.765
		Blame	6.24	1.284	14.782	71	**<0.001**	1.745

$p < 0.001$, $\eta^2 = 0.073$, and of Alternative Possibilities, $F(1, 284) = 85.94$, $p < .001$, $\eta^2 = 0.2329$. The two-way interaction between Point of Intervention and Intervener was also statistically significant, $F(1, 284) = 22.50$, $p < 0.001$, $\eta^2 = 0.073$. No other significant main effect or interaction was found.

5.4 Discussion

Experiment 1 demonstrated that alternative possibilities are not a necessary precondition for the attribution of moral responsibility in cases of actions. Experiment 1 thus provides additional evidence that the folk reject PAP as a general principle for both moral responsibility and blame. However, while alternative possibilities were not considered necessary for the attribution of moral responsibility and blame, they still have a strong effect on people's moral judgments. When participants learn that the outcome was unavoidable, their moral responsibility and blame judgments dropped notably.

6. Experiment 2: Omissions

Experiment 2 now tests whether learning that an agent could not have prevented an outcome had he intervened has an impact on the agent's moral responsibility for that outcome. Table 10.4 summarizes the hypotheses that will be tested in Experiment 2.

6.1 Sample size rationale and participants

As in Experiment 1, a power analysis revealed that 72 participants for each of the four between-subject conditions were needed to detect a small to medium effect (d = 0.35) with 90% power (one-tailed). Thus, the results are reported for the 72 participants in each condition who completed the survey in no less than 90 seconds and passed the

Table 10.4 Experiment 2. Philosophical claims and predictions.

Claim	Prediction	Held by
Alternative possibilities **are not necessary** for the attribution of moral responsibility (same claims for blame)		
if the Point of Intervention is the agent's decision-making	Moral responsibility ratings will be above 4 in all the Decision-Making/ Alternative Possibilities No conditions	Fischer & Ravizza
	(same predictions for blame)	
if the Intervener is a human agent	Moral responsibility ratings will be above 4 in all the Agent/Alternative Possibilities No conditions	Byrd
	(same predictions for blame)	
Alternative possibilities **are** necessary for the attribution of moral responsibility	Moral responsibility ratings will be below 4 in all the Decision-Making/ Alternative Possibilities No conditions	AOAT
(same claims for blame)	(same predictions for blame)	

manipulation check (question named "Unavoidable").[15] Participants were recruited on Amazon's Mechanical Turk and received monetary compensation ($0.40). 52.4% of participants were male, 47.6% female, the mean age was 35 years (*SD* = 11). All but eight participants indicated English as their first language, and all participants were located in the United States while taking the survey.

6.2 Methods

The experimental design was completely identical to the one used in Experiment 1 with only minor modifications to the questions to match the vignettes (Table 10.5):[16]

[15] 417 participants were tested, 318 of whom passed the manipulation check. Only the first 288 of those participants to finish the survey were included in the analysis. Thus, 99 participants were excluded for failing the manipulation check, and 30 because of the sample size rationale.

[16] Highlights are just for illustration purposes and were not used in the actual study.

Table 10.5 Vignettes used in Experiment 2.

Introduction	While walking by the beach, Tom [/Sean/Dan/John] sees a child drowning. The beach is completely empty and there is nobody else around who could save the child. Tom believes that he could jump into the water and save the child with minimal effort and inconvenience. Tom notices that the child is the neighbor's kid who he detests and wants dead. He deliberately decides not to attempt to save the child. He decides not to jump into the water and continues his walk. The child drowns.	
	Person	**Nature**
Decision-Making	Unbeknownst to Tom, an evil neurosurgeon has implanted a microchip into Tom's brain and is secretly monitoring his brain. Had Tom wavered in his decision not to jump into the water, the neurosurgeon would have sent a signal to Tom's brain that would have ensured that Tom decided not to jump in anyway. As a consequence, the child would have died no matter what.	Unbeknownst to Sean, he recently got exposed to a chemical substance that affects Sean's behavior. Had Sean wavered in his decision not to jump into the water, the drug would have ensured that he decided not to jump in anyway. As a consequence, the child would have died no matter what.
Behavior	Unbeknownst to Dan, an evil busybody is observing the situation and controlling the gate of a cage filled with sharks. Had Dan jumped into the water, the evil busybody would have released the sharks and they would have attacked Dan and prevented him from saving the child. As a consequence, the child would have died no matter what.	Unbeknownst to John, the water is infested by sharks. Had John jumped into the water, the sharks would have attacked him and prevented him from saving the child. As a consequence, the child would have died no matter what.

Unavoidable: Please indicate if you rather agree or disagree with the following statement: "In this scenario, Bill's death was unavoidable."

Moral Responsibility: How much do you agree with the following statement? "Tom [/Sean/Dan/John] is morally responsible for the *child's* death."

Blame (Not Trying): How blameworthy is Tom [/Sean/Dan/John] for not trying to *save the child*?

Blame (Decision): How blameworthy is Tom [/Sean/Dan/John] for his decision *not to jump into the water to save the child*?

Blame (Outcome): How blameworthy is Tom [/Sean/Dan/John] for the *child's* death?

6.3 Results

The results of the descriptive statistics are depicted in Figure 10.3, Figure 10.4, and Table 10.6. Table 10.6 further presents the t-tests against the midpoint of the scale. In the Alternative Possibilities Yes condition, moral responsibility and blame ratings are above the neutral midpoint, speaking in favor of the claim that agents are morally responsible and blameworthy for the outcome of their omissions if there is no lack of alternative possibilities.

In the Alternative Possibilities No condition, moral responsibility ratings do not differ significantly from the midpoint of the scale. How should we interpret cases in which ratings are not significantly different from the midpoint? First and most straightforwardly, the results could be interpreted as speaking against the AOAT, as blame and moral

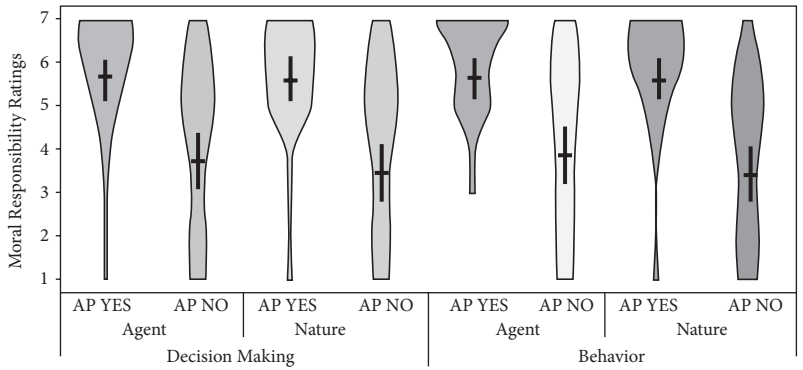

Figure 10.3 Experiment 2. Mean ratings for moral responsibility, as a function of Point of Intervention, and Intervener and Alternative Possibilities, with '1' meaning 'not at all' and '7' meaning 'fully'.

Note: Horizontal black lines represent means, vertical black lines represent 95% CI. The width of the shapes around the mean is proportional to the number of participants choosing each answer option.

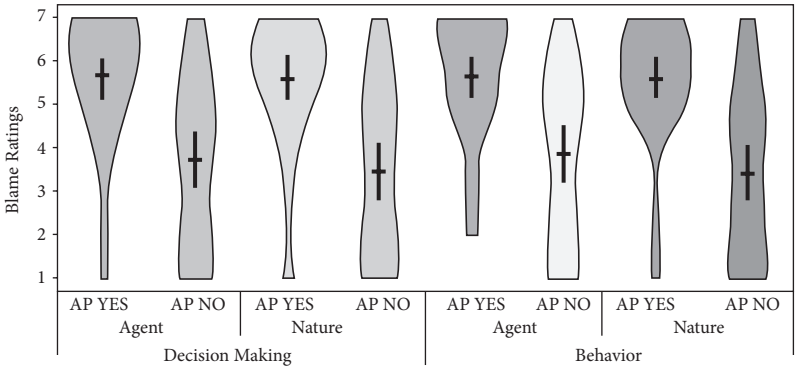

Figure 10.4 Experiment 2. Mean ratings for blame, as a function of Point of Intervention, and Intervener and Alternative Possibilities, with '1' meaning 'not at all' and '7' meaning 'fully'.

Note: Horizontal black lines represent means, vertical black lines represent 95% CI. The width of the shapes around the mean is proportional to the number of participants choosing each answer option.

responsibility ratings are not significantly below the midpoint. Further, they could be interpreted as also contradicting all those positions that argued against AOAT, as ratings are not significantly *above* the midpoint. However, failures to find a departure from the midpoint are hard to interpret. First, it is not clear that participants understand the midpoint as accurately between the extremes of the scale. Participants might alternatively use the midpoint to indicate that the agent is responsible for some aspects of his behavior, yet not for others. Second, it is not even clear that participants use the midpoint to indicate any responsibility judgment on the spectrum. Participants might have used it to indicate uncertainty, no opinion on the issue, etc. For these reasons, strong conclusions based on a failure of the means to differ from the midpoint need to be avoided.

To be able to detect effects beyond the philosophical predictions, mixed-measure ANOVAs were conducted. For the dependent variable moral responsibility, I found a significant main effect of Alternative Possibilities, $F(1, 284) = 211.05$, $p < 0.001$, $\eta^2 = 0.426$. Once participants were provided with information about the lack of alternative possibilities, moral responsibility ratings went down. No other main effect or interaction was significant.

Table 10.6 Experiment 2. Descriptive statistics and t-test against midpoint of the scale '4'.

			Means	SD	t	df	p (one-tailed)	d
Alternative Possibilities Yes		Moral Resp	5.94	1.288	25.577	287	**<0.001**	1.506
		Blame	5.63	1.469	18.858	287	**<0.001**	1.11
Alternative Possibilities No	Decision/Agent	Moral Resp	4.33	1.972	1.435	71	0.078	0.167
		Blame	3.69	1.99	−1.303	71	0.099	−0.156
	Decision/Nature	Moral Resp	4.13	1.942	0.546	71	0.294	0.067
		Blame	3.5	2.021	−2.099	71	**0.020**	−0.247
	Behavior/Agent	Moral Resp	4.32	2.082	1.302	71	0.099	0.154
		Blame	3.92	2.047	−0.345	71	0.366	−0.039
	Behavior/Agent	Moral Resp	3.83	1.875	−0.754	71	0.227	−0.091
		Blame	3.43	1.999	−2.417	71	**0.009**	−0.285

For the dependent variable blame (outcome), there was a significant main effect of Alternative Possibilities, $F(1, 284) = 229.55$, $p < 0.001$, $\eta^2 = 0.447$. No other significant main effect or interaction was found.

Going beyond the pre-registration, I further analyzed whether blame and moral responsibility judgments significantly differed from one another in the Alternative Possibilities No condition using a mixed-measure ANOVA with Question tested within-subjects. There was a statistically significant main effect of Question, $F(1, 284) = 34.20$, $p < 0.001$, $\eta^2 = 0.107$. No interaction was significant.

6.4 Discussion

Experiment 2 tested the core claim of AOAT, namely that alternative possibilities are necessary for omissions. Defenders of AOAT would predict that participants should withhold moral responsibility and blame attribution when the outcome was unavoidable. This led to the empirical predictions that moral responsibility and blame ratings should be significantly below the midpoint of the scale. Against AOAT, the results show that participants' moral responsibility ratings were not significantly below the neutral midpoint of the scale when the outcome was unavoidable. This was the case across conditions. However, ratings were also not significantly above the midpoint and therefore challenge critics of AOAT as well.

For blame, the results are significantly lower than moral responsibility judgments, and in some conditions, agreement ratings were even significantly below the midpoint of the scale. Interestingly, none of the factors that philosophers have considered relevant for the attribution of moral responsibility, namely the point of intervention and the intervener, played a role. Experiment 2, therefore, provides very mixed evidence but provides initial reason to reject AOAT.

7. Is there an Action/Omissions Asymmetry?

Experiments 1 and 2 demonstrate that for actions, alternative possibilities are not a necessary precondition for the attribution of moral responsibility

and blame. Even when participants learned that an agent, whose behavior led to a bad outcome, could not have prevented the outcome, they still judged him morally responsible and blameworthy for the outcome of his actions. These results are not surprising, both in light of the theoretical arguments that have been put forward and in light of previous empirical findings.

Interestingly, the results look different for omissions. Both moral responsibility and blame ratings are not statistically different from the midpoint. These findings contradict both PAP and AOAT. In no condition did agreement ratings drop below the neutral midpoint. So is this evidence in favor of critics of AOAT? Not at all. First, in no condition were mean ratings above the neutral midpoint. Second, none of the factors that were considered relevant in the literature actually mattered. According to Fischer and Ravizza, the point of intervention was supposed to matter. When the point of intervention is the agent's decision-making, the agent should be held responsible and should be blamed for both actions and omissions. Alternative possibilities should not be necessary for these judgments. This effect did not emerge. Byrd's suggestion that the type of intervener would determine whether alternative possibilities were necessary in the omission case also failed to find support.

While these results might cause some frustration, there are at least two reasons to be optimistic. First, across conditions, the lack of alternative possibilities made people reduce their initial moral evaluation of the agent. Thus, while alternative possibilities are not necessary, they are still an important moderator for the attribution of moral responsibility and blame: whether they are present of absent changed people's moral intuitions. This effect was found for both actions and omission.

Second, the experimental design used here is, as mentioned earlier, limited. On the one hand, while it seems that AOAT should be rejected given the empirical evidence, we still do not know whether alternative possibilities are *equally* irrelevant for actions and omissions. One might believe that alternative possibilities are not necessary in cases of actions or omissions, but that the strength of their effect on moral responsibility attributions is different for actions and omissions. The experimental design does not allow for the relevant tests. On the other hand, since the cover stories are different for actions and omissions, we cannot make any claims as to whether there is a general tendency to condemn

actions more strongly than omissions, nor whether actions are generally considered more causally relevant. Some philosophers have argued that an omission leading to a bad outcome is not as bad as an action leading to the same outcome (Foot, 1967), and a related empirical effect has been found (Baron and Ritov, 2004; Spranca et al., 1991; Willemsen and Reuter, 2016). For those two reasons, it is advisable to test the relevance of alternative possibilities for actions and omissions in one single experiment.

There is another reason to suspect that the cases used in Experiments 1 and 2 are ill-suited to test the hypotheses at hand, and this reason is of a methodological nature. Compare, for both actions and omissions individually, how Victim would have died, had there been an intervention. In the Action/Decision-Making condition, had the evil neurosurgeon or the drug intervened, she/it would have sent a signal to Agent's brain, so that, eventually, Agent would have killed Victim anyway. In the Action/Behavior condition, however, the counterfactual causal chain does not include Agent at all. Victim would have died, but as a result of being hit by a rock. There are other versions in the literature in which an evil bystander is already in position to shoot Victim, in case Agent decides not to. No matter how the counterfactual intervention on the agent's behavior is spelled out, the resulting causal chain does not include Agent.

There are two reasons why this difference in the causal chain might contaminate intuitions. First, we know that the underlying causal structure is an important moderator for the attribution of moral responsibility (Darley and Shultz, 1990; Malle et al., 2014; Murray and Lombrozo, 2017). The extent to which an agent is considered causally responsible affects the agent's moral responsibility for that outcome. We further know that adding causal factors to the story reduces the causal relevance of an agent to the outcome (Alicke, 1992). Against this worry, it might be objected that the causal structures are identical in terms of what *actually* happened; they only differ in the *counterfactual* scenario. The difference between action and omission conditions should, thus, be irrelevant for people's moral judgments about what actually happened. This objection, however, does not succeed. Empirical evidence suggests that people rely heavily on counterfactual thinking when evaluating a situation, both morally and causally (Gerstenberg et al., 2015; Kominsky et al., 2015; Lagnado and Gerstenberg, 2017; Lagnado et al., 2013).

In fact, people's causal judgments are largely influenced by considerations about what would have happened, had the agent acted differently. Moreover, the whole discussion about the relevance of alternative possibilities deals with the question of whether alternative, that is *counterfactual*, possibilities influence moral judgments about what actually happened. We can and, given the whole starting point of the debate, philosophers *should* expect that the counterfactual causal structure has a significant impact on participants' causal and moral evaluation. For this reason, we need to ensure that those causal structures are identical in all conditions that we want to compare directly.

When it comes to omissions, things are equally worrisome. Compare again the Decision-Making to the Behavior condition. In Decision-Making, had Agent wavered in his decision not to help the child, his decision not to help would have been caused by the neurosurgeon or the drug. As a result, the child would have died, while Agent would have been safe and sound. In Behavior, however, the counterfactual outcome differs in important respects. Had the agent tried to intervene, he would have been attacked by sharks. While the story does not explicitly state it, it is very likely that this attack would lead to Agent's death or at least severe injuries and, thus, to *two* victims instead of one. Consequently, Decision-Making and Behavior differ in the outcome of the counterfactual scenario. In addition, the fact that he would have died or been injured as well provides an objective reason for Agent not to jump into the water which might post-hoc rationalize the agent's behavior and reduce blame. Had he known about the sharks, he would have had a good, justified reason not to jump in. Such an objective reason that would have made the agent's decision understandable does not exist in Decision-Making.

Trying to transform the philosophical thought experiments that have guided the debate about the relevance of alternative possibilities into real, methodologically sound experiments reveals a devastating fact. Philosophers have built their arguments about the relevance of alternative possibilities on cases which are dramatically different in terms of their underlying causal structure, the severity of the outcomes, as well as the possibility to rationalize and excuse the agent's decision post-hoc. None of these differences is trivial or can be expected not to matter. I do

not dare to decide which cases are philosophically the most interesting or relevant ones. However, philosophers who would like to stick to the traditional cases will have to make such decisions or make suggestions of how those cases can be fixed and made more parallel. Until then, philosophers and empirical researchers interested in the relevance of alternative possibilities need to be aware that intuitions often require a more complex explanation than what is currently provided. If we are further interested in extending those cases to real-world experiments, the cases available so far might not even qualify in the first place and we need novel scenarios to test our philosophical intuitions.

8. Experiment 3: Actions and Omissions

Due to the significant shortcomings of Experiments 1 and 2, it is advisable to test AOAT by using one cover story for both actions and omissions. For the reasons discussed in Sections 3 and 6, I will not try to adapt Shooting or Sharks, but use an entirely new cover story.

Willemsen and Reuter (2016) argued that many studies on the moral significance of actions and omissions suffer from a severe methodological flaw, namely that agents break different moral norms that are considered differently important. Malle et al. (2014, p. 168) have recently pointed out that "social perceivers may distinguish omissions and commissions by the norms these two actions violate." The thought experiments used in the literature typically describe cases of harming vs. not helping, or killing vs. letting die, which people do believe to differ in importance (Willemsen and Reuter, 2016). In addition, extreme and emotionally affective outcomes, such as death, severe injury, or harm to children, tend to trigger extreme moral condemnation. Such ceiling effects might conceal effects one would find if participants were not tempted to ascribe as much moral responsibility as possible. For this reason, the vignette I use is inspired by Willemsen and Reuter (2016) and describes a moderate, less emotionally affective outcome.

This experiment has two parts. Experiment 3a copies the experimental design from Experiments 1 and 2 and uses a 7-point Likert scale for moral responsibility and blame evaluations. Experiment 3b uses a

Table 10.7 Experiment 3. Philosophical claims, empirical predictions, and tests of those predictions.

Claim	Empirically Testable Prediction	Test
Agents are morally responsible for the outcomes of their actions (same claim for blame)	Moral responsibility ratings will be above 4 in the No Information condition (same prediction for blame)	t-test against 4 for DV moral responsibility
Agents are morally responsible for the outcomes of their omissions (same claim for blame)	Blame ratings will be above 4 in the No Information condition (same prediction for blame)	t-test against 4 for DV blame (outcome)
Alternative possibilities are not necessary for the attribution of moral responsibility for actions (same claim for blame)	Moral responsibility ratings will be above 4 in the Information condition (same prediction for blame)	t-tests against 4 for DV moral responsibility for the Information condition
Alternative possibilities are not necessary for the attribution of moral responsibility for omissions (same claim for blame)	Moral responsibility ratings will be above 4 in the Information condition (same prediction for blame)	t-tests against 4 for DV moral responsibility for the Information condition
Agents will be considered less morally responsible for omissions, compared to actions (same claim for blame)	There will be a main effect of Behavior for DV moral responsibility, such that means are higher for actions than for omissions (same prediction for blame)	ANOVA
Agents will be considered less causally relevant for omissions, compared to actions (same claim for blame)	There will be a main effect of Behavior for DV causation, such that means are higher for actions than for omissions (same prediction for blame)	ANOVA

binary scale to see whether small tendencies become more extreme when only two answer options are available.

8.1 Experiment 3a

Based on the results from Experiments 1 and 2, as well as the work by Willemsen and Reuter (2016), I make the empirically testable predictions shown in Table 10.7.

8.1.1 Sample size rationale and participants

As in Experiments 1 and 2, a power analysis revealed that for the most demanding statistical test (the t-test against the midpoint of the scale), 72 participants for each of the four between-subject conditions were needed to detect a small to medium effect (d = 0.35) with 90% power (one-tailed). Thus, the results are reported for the 72 participants in each condition who completed the survey in no less than 90 seconds and passed the manipulation check (question named "Unavoidable").[17] Participants were recruited on Amazon's Mechanical Turk and received monetary compensation ($0.40). 45.1% of participants were female, the mean age was 33 years (SD = 11). All but one participant indicated English as their first language, and all participants were located in the United States while taking the survey.

8.1.2 Methods

A 2 (Type of Behavior: Action vs. Omissions) × 2 (Alternative Possibilities: Yes vs. No) mixed design was applied, with Alternative Possibilities as a within-subject factor. Participants were randomly assigned to one of the two between-subject conditions (Table 10.8) and answered adapted versions of the questions used in Experiments 1 and 2 in the same order. The vignettes are based on Willemsen and Reuter (2016) and are presented in Table 10.8.

8.1.3 Results

The results of Experiment 3 are summarized in Figure 10.5, Figure 10.6, and Table 10.9. For both actions and omissions, participants' moral responsibility and blame ratings are above the midpoint of the scale, in the Alternative Possibilities Yes condition. In Alternative Possibilities No, both moral responsibility and blame ratings remain significantly above the neutral midpoint for actions. For omissions, only moral responsibility ratings are significantly above 4. For blame, however, they are not. For blame, mean ratings are only descriptively above the neutral midpoint and therefore hard to interpret. A look at the overall distribution of

[17] 179 participants were tested, 161 of which passed the manipulation check. Only the first 144 of those participants to finish the survey were included in the analysis. Thus, 18 participants were excluded for failing the manipulation check, and 15 because of the sample size rationale.

Table 10.8 Vignettes used in Experiment 3.

	Action	Omission
First part of the story	Peter works for a sales company. He is responsible for several tasks, like answering incoming phone calls and updating customer information on the central computer. For quite some time now, Peter is very unhappy with this job. He feels like his commitment is not appreciated and it is always others who get a promotion or salary increase. For some time now, Peter has been thinking about a way to harm the company.	
	One morning, Peter goes through his normal routine and updates customer information on the central computer, when suddenly a window pops up.	
	Peter reads the text, which states, "All customer information will be deleted. If you'd like to continue, click on 'delete'."	Peter reads the text, which states, "In 10 seconds, all customer information will be deleted. If you'd like to abort, click on 'cancel'."
	Peter clicks on delete immediately, as he knows that losing customer information will be a big problem for the company. Immediately,	Peter does not click on cancel, as he knows that losing customer information will be a big problem for the company. After 10 seconds,
	all customer information is deleted from the central computer. The company loses important customer information.	
Lack of Alternative Possibilities	Unbeknownst to Peter, an evil neurosurgeon has implanted a microchip into Peter's brain and is secretly monitoring his brain. Had Peter wavered in his decision to click on 'delete,' the neurosurgeon would have sent a signal to Peter's brain that would have ensured that Peter decided to click on 'delete' anyway. As a consequence, the data would have been deleted no matter what.	Unbeknownst to Peter, an evil neurosurgeon has implanted a microchip into Peter's brain and is secretly monitoring his brain. Had Peter wavered in his decision not to click on 'cancel' the data, the neurosurgeon would have sent a signal to Peter's brain that would have ensured that Peter decided not to click on 'cancel' anyway. As a consequence, the data would have been deleted no matter what.

participants' blame responses might provide some helpful insights. 56.95% of participants chose an answer option of 5, 6, or 7, indicating that they consider the agent blameworthy (only 5.56% chose the neutral midpoint).

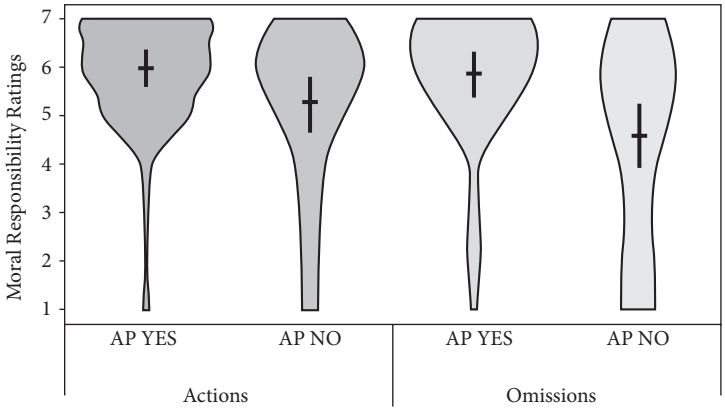

Figure 10.5 Experiment 3a. Mean ratings for moral responsibility, as a function of Type of Behavior and Alternative Possibilities, with '1' meaning 'not at all' and '7' meaning 'fully'.

Note: Horizontal black lines represent means, vertical black lines represent 95% CI. The width of the shapes around the mean is proportional to the number of participants choosing each answer option.

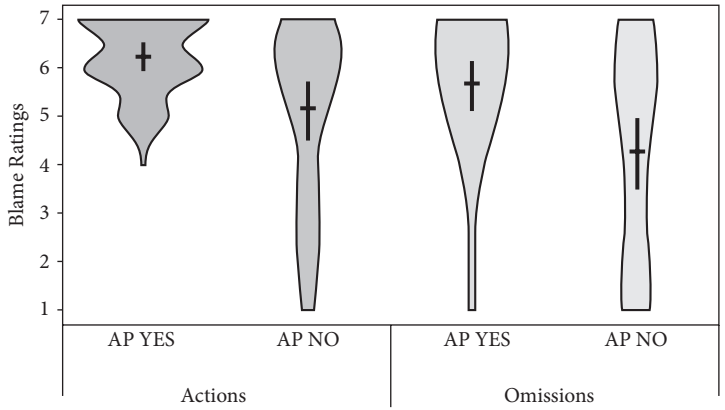

Figure 10.6 Experiment 3a. Mean ratings for blame, as a function of Type of Behavior and Alternative Possibilities, with '1' meaning 'not at all' and '7' meaning 'fully'.

Note: Horizontal black lines represent means, vertical black lines represent 95% CI. The width of the shapes around the mean is proportional to the number of participants choosing each answer option.

Table 10.9 Experiment 3. Descriptive statistics and t-tests against the midpoint of the scale.

			Means	SD	t	df	p (one-tailed)	d
Alternative Possibilities No	Action	Moral Resp	6.00	1.075	15.791	71	**<0.001**	1.86
		Blame	6.24	0.788	24.385	71	**<0.001**	2.843
	Omission	Moral Resp	5.88	1.352	11.763	71	**<0.001**	1.391
		Blame	5.68	1.412	10.069		**<0.001**	1.19
Alternative Possibilities Yes	Action	Moral Resp	5.25	1.701	6.234	71	**<0.001**	0.735
		Blame	5.15	1.881	5.199	71	**<0.001**	0.611
	Omission	Moral Resp	4.57	1.925	2.321	71	**0.006**	0.296
		Blame	4.28	2.114	1.046	71	0.073	0.132

A 2 × 2 mixed-measure ANOVA for the dependent variable moral responsibility, revealed significant main effects of Alternative Possibilities, $F(1, 142) = 36.07$, $p < 0.001$, $\eta^2 = 0.203$. The main effect of Type of Behavior is at best suggestive as it merely reaches the .05 significance level and its effect size is small, $F(1, 142) = 3.879$, $p = 0.05$, $\eta^2 = 0.0.027$. The two-way interaction was not statistically significant, $F(1, 142) = 2.64$, $p = 0.107$, $\eta^2 = 0.018$.

Mirroring the results for moral responsibility, for the dependent variable blame outcome, I found a significant main effect of Alternative Possibilities, $F(1, 142) = 42.88$, $p < 0.001$, $\eta^2 = 0.232$. This time, also the main effect of Type of Behavior was significant, $F(1, 142) = 12.22$, $p = 0.001$, $\eta^2 = 0.079$. The two-way interaction was not statistically significant, $F(1, 142) = 0.708$, $p = 0.402$, $\eta^2 = 0.005$.

A mixed-measure ANOVA with the within-subject factor Question further revealed that Moral Responsibility and Blame did not differ significantly, $F(1, 142) = 3.01$, $p = 0.085$. This test was not pre-registered.

8.1.4 Interim discussion

Experiment 3a confirms the results from Experiment 1 and demonstrates that alternative possibilities are not necessary for moral responsibility and blame for actions. In addition, the results provide additional evidence that alternative possibilities are also not required for moral responsibility for omissions, as moral responsibility ratings are significantly above the midpoint. People clearly ascribe moral responsibility even if the outcome could not have been avoided. For people's blame judgments, the results are less straightforward and neither significantly above nor below the midpoint. They speak against AOAT but we are not justified in concluding that people blame an agent in the absence of alternative possibilities. For now, the empirical evidence speaks clearly against AOAT.

Using one cover story, we are now also able to detect other important differences between actions and omissions. For both actions and omissions, moral responsibility ratings drop significantly when participants learn that the outcome was unavoidable, and they do so equally strongly for actions and omissions. This suggests that alternative possibilities have the same moral responsibility-reducing effect for both types of behavior.

8.2 Experiment 3b

Experiment 3a provided initial evidence that there is no Action/Omission Asymmetry when we consider people's moral responsibility judgment. For blame, we still lack telling evidence. It might be argued that being morally responsible or blameworthy is primarily a yes-or-no issue. Thus, to really investigate whether alternative possibilities are a necessary requirement, a binary answer format might be more adequate and informative. In addition, binary answer formats further circumvent the difficulties of interpreting ratings close to the midpoint. In Experiment 3b, I now use such a binary answer format.

8.2.1 Sample size rationale and participants

A power analysis revealed that for the most demanding statistical test (the binominal test against chance), 93 participants for each of the two between-subject conditions were needed to detect a small to medium effect (d = 0.15) with 90% power (one-tailed). Thus, the results are reported for the first 93 participants in each condition who completed the survey in no less than 90 seconds and passed the manipulation check (question named "Unavoidable").[18] Participants were recruited on Amazon's Mechanical Turk and received monetary compensation ($0.40). 53.8% of participants were male, 46.3% female, the mean age was 35 years (*SD* = 11). All but three participants indicated English as their first language, and all participants were located in the United States while taking the survey.

8.2.2 Methods

The vignettes are identical to the ones used in Experiment 3a and again a mixed-design was used. Participants answered all five questions that were already used in Experiments 1 to 3a, this time using a binary scale. Since Alternative Possibilities were manipulated within-subjects, all participants answered all five questions twice. The exact formulation of the questions is as follows:

[18] 281 participants were tested, 226 of which passed the manipulation check. Only the first 186 of those participants to finish the survey were included in the analysis. Thus, 55 participants were excluded for failing the manipulation check, and 40 because of the sample size rationale.

Please indicate if you rather agree or disagree with the following statements:

Unavoidable: In the scenario, the loss of the data was unavoidable.

Moral Responsibility: Peter is morally responsible for the data being deleted.

Blame (Not Trying): Peter is blameworthy for not trying to save the data.

Blame (Decision): Peter is blameworthy for his decision to click on 'delete'/not to click on 'cancel.'

Blame (Outcome): Peter is blameworthy for the data being deleted.

8.2.3 Results

The mean ratings are shown in Figure 10.7 and Figure 10.8. In the Alternative Possibilities No condition, agreement with the moral responsibility and the blame statement are surprisingly close to chance for both Actions and Omissions. Going beyond the pre-registered tests, I compared whether agreement was significantly different for actions and for omissions. This was not the case (Moral Responsibility: χ^2 (1, N = 186) = 0.544, p = 0.555; Blame: χ^2 (1, N = 186) = 3.634, p = 0.078).

In the Action, Alternative Possibilities No condition, 58% of participants agreed that the agent is morally responsible for the data being deleted. A binominal test against chance revealed that this majority is

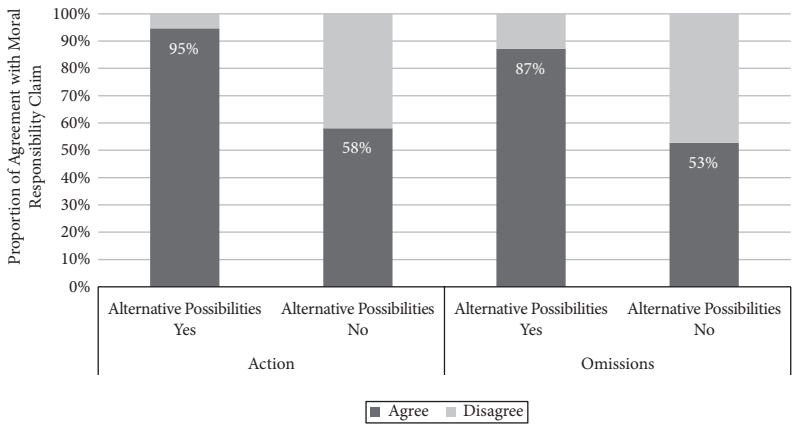

Figure 10.7 Experiment 3b. Proportion of moral responsibility judgments as a function of Type of Behavior and Alternative Possibilities.

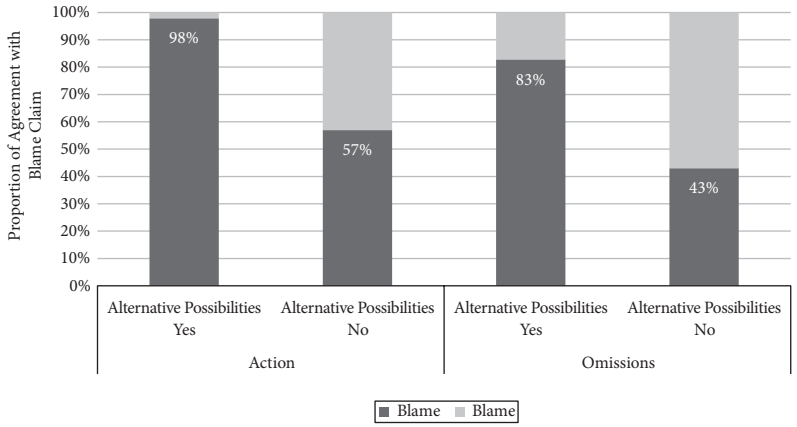

Figure 10.8 Experiment 3b. Proportion of blame judgments as a function of Type of Behavior and Alternative Possibilities.

not significant, test value = 0.5, p = 0.073, one-tailed. For the blame statement, 56.99% indicated agreement. Also this percentage is not significantly different from 50%, test value = 0.5, p = 0.107, one-tailed.

For omissions, 52.7% indicated agreement with the statement that the agent is morally responsible in the Alternative Possibilities No condition. A binominal test demonstrated that this is not significantly different from 50%, test value = 0.5, p = 0.3409. When asked about the agent's blameworthiness, 43% chose the agreement option, a proportion that is, again, not significantly different from 50%, test value = 0.5, p = 107.

8.2.4 Interim discussion

The results of Experiment 3b are surprising in three ways. First, in Experiments 1 and 3a, mean moral responsibility and blame ratings about actions were clearly above the midpoint of the scale in the No Alternative Possibilities condition. This indicates that people hold agents responsible for the consequences of their actions, even in the absence of alternative possibilities. From this, I inferred that alternative possibilities are not a necessary precondition for actions. However, the results in this experiment are much less straightforward. Only 58% of participants said that the agent was morally responsible, a proportion not significantly different from chance. In Experiment 3a, on the other hand, 76.39% chose an answer option above 4, indicating some degree of

agreement. For blame, 57% said that he was blameworthy for the consequences of his action in Experiment 3b. In Experiment 3a, using a 7-point rating scale, 69.44% chose an answer option of 5, 6, or 7, indicating agreement.

Second, for omissions, switching from a rating scale to a binary scale did not provide more conclusive evidence for or against AOAT. Neither moral responsibility nor blame ratings are significantly different from 50%, making it hard to draw any reliable conclusions. At best we can say that participants are split into two groups: those who consider alternative possibilities to be necessary, and those who do not.

The third surprising finding is that the difference between actions and omissions disappeared and is now merely descriptive.

8.3 Discussion

In Experiment 3, two different types of scales were used to test whether alternative possibilities are necessary for moral responsibility and blame for the consequences of actions and omissions. Experiment 3a provided evidence that PAP is false for both types of moral judgments and for both actions and omissions. The results of Experiment 3a therefore challenge AOAT.

While Experiment 3b was conducted to provide even stronger evidence, the evidence is instead less conclusive. When the outcome was unavoidable, roughly half of participants agreed and half of them disagreed that the agent is morally responsible and to blame for the outcome. Interestingly, this effect was obtained for both actions and omissions.

It is hard to find an explanation of these differences without being merely speculative. The different scales might trigger different background assumptions or different interpretations of the test query. For instance, participants might be okay with ascribing some blame to an agent who could not have avoided the outcome, and to choose a 5 on a 7-point scale. However, participants might interpret a binary answer format as asking whether the agent is *fully* blameworthy. Here, participants who believe that the agent deserves a minimal amount of blame might choose the disagree option because they disagree that the agent is fully blameworthy. While this might be one (of many) plausible explanations, more research will be required.

9. General Discussion

Ever since the work of Harry Frankfurt, the Principle of Alternative Possibilities (PAP) has been subject to an intense philosophical debate. While many philosophers are convinced that an agent can only be morally responsible for an outcome that he could have avoided, others have rejected this idea and argued that moral responsibility is not dependent on alternative possibilities. In this chapter, I engaged with a more nuanced position, according to which alternative possibilities are not required for moral responsibility for actions, but they are required for moral responsibility for omissions. This position was dubbed the Action/Omission Asymmetry Thesis (AOAT). The aim of this chapter was to empirically test whether philosophers' intuitions about concrete thought experiments are shared by the folk, and to what extent the folk's intuitions support philosophical theory. Therefore, the main question this chapter aimed to answer is: Is there an Action/Omission Asymmetry?

Experiment 1 lent support to the position that an agent can be morally responsible for the consequences of his actions, even if those consequences could not have been avoided. Experiment 2 showed that for omissions, people's intuitions speak against AOAT and lend initial support for the position that alternative possibilities are not a necessary precondition for omissions either. For both actions and omissions, the lack of alternative possibilities had a significant effect on people's moral evaluations. Once participants learned that the outcome could not have been avoided, they held the agent much less responsible and blamed him less for the outcome. To detect whether this effect was equally or differently strong for actions and omissions, a vignette needed to be designed that works for both actions and omissions. Experiment 3 demonstrated that the effect of alternative possibilities on people's moral responsibility judgments is equally strong. When learning that the outcome could not have been avoided, people's moral responsibility judgments go down equally strongly for actions and omissions. For blame judgments, the effect of alternative possibilities was slightly stronger for omissions, compared to actions.

So is there an Action/Omission Asymmetry? The empirical study of the folk's intuitions presented in this chapter suggests that AOAT is false,

but it cannot provide a definite answer and more research will be required. Here is, what I believe, we can say for sure.

First, it seems that whether we can be confident in rejecting AOAT strongly depends on which moral judgment we consider relevant for the asymmetry in the first place. If we believe that the relevant moral judgment is a judgment about moral responsibility, then we can be confident that there is no Action/Omission Asymmetry. Neither for actions nor for omissions were alternative possibilities found to be a necessary precondition for moral responsibility; people still held the agent responsible when the outcome was unavoidable. As a consequence, PAP is wrong for both actions and omissions. In contrast, if we believe that the relevant moral judgment is a judgment about blameworthiness, then the results provide a weaker basis to reject AOAT. In Experiment 2, moral responsibility and blame ratings were significantly different from one another and blame ratings tended to be below the neutral midpoint. Had only blame been tested, one might have taken this as initial evidence in support of AOAT. However, this difference disappeared in Experiment 3.

Second, no matter which moral judgment we consider, the lack of alternative possibilities always led to more moderate moral evaluations. Across conditions, a lack of alternative possibilities made the agent less morally responsible and less blameworthy. This means that while PAP fails as an analysis of conceptual necessity, it succeeds as a principle of moral psychology. Alternative possibilities do matter for moral responsibility and blame, and their absence strongly decreases both types of moral judgments. It should be noted that the within-subject design used in the experiments might partly explain the reduction of moral responsibility and blame. For instance, in the action condition, participants first read a story about an agent who shoots another person, and they are then asked to morally evaluate the agent. Afterwards, they learn that the agent could not have done otherwise. People might have understood this obvious difference as an invitation to change their previous answer. Increasing it seems implausible and was for many participants not even possible, as they already gave very extreme ratings. Thus, the only way in which changes are possible is to reduce the initial rating. It is therefore advisable to re-run the experiments with a fully between-subject design.

Finally, it seems that philosophers strongly rely on thought experiments and believe them to make for good and reliable intuition pumps. However, as this chapter has demonstrated, these thought experiments do surprisingly poorly. First and foremost, they provide inadequate experimental vignettes. The cases that have dominated the debate about moral responsibility and free will cannot be adapted in a way such that we can test actions and omissions with one and the same cover story. Once we have dealt with the problem of finding suitable vignettes, philosophical theories are sometimes hard to translate into experimental test queries. At least the authors discussed in this paper do not make a clear distinction between moral responsibility and blame. As other empirical studies as well as Experiment 2 demonstrated, the folk do. Experimental studies should do justice to such differences. Philosophers, on the other hand, should also take notice of such differences and adapt their philosophical claims in a more precise way. And finally, philosophers' intuitions about thought experiments on alternative possibilities are not shared by the folk. Neither the point of intervention nor the intervener, both factors that have been said to matter, played a role for the folk's moral intuitions.

Going beyond the philosophical theories that were tested in this chapter, the results might inspire some more general thoughts on the relevance of alternative possibilities and their relation to moral responsibility. When philosophers think about the question of whether an agent is morally responsible or blameworthy for the consequences of her behavior, they typically think about the answer as a Yes/No matter—you either are morally responsible or you are not; you are blameworthy or you are not. This way to think about it might be mistaken though. As the results of this study suggest, the folk concepts of moral responsibility and blameworthiness come in degrees. An agent is not fully morally responsible or not at all, but she might be morally responsible and blameworthy to various degrees depending, among other things, on whether the outcome could have been avoided.

If we stick to a concept of moral responsibility that operates in a dichotomous way, the question of whether there is an Action/Omission Asymmetry is hard to answer. At best we can conclude that the folk are split into two groups. For one group of participants, alternative possibilities are not a precondition, neither for actions nor for omissions, so AOAT is false. For others, alternative possibilities are only a precondition for

omissions, yet not for actions; so for this group, AOAT is true. If we believe that this is the right way to think about moral responsibility, then future research will need to address the question of what it is that distinguishes these two groups. It should, however, be noted that applying a binary scale instead of a more nuanced rating scale provides its own challenges to AOAT. Asking participants to indicate agreement or disagreement with a moral responsibility claim resulted in a proportion of agreement ratings that was indistinguishable from chance—for both actions and omissions. This suggests that, when thinking of moral responsibility as a binary concept, actions and omissions do not seem to be asymmetrical at all.

In contrast, if you believe that the folk's graded concept of moral responsibility provides an important indicator as to how we should think about moral responsibility, then it seems that we should reformulate the AOAT. Instead of asking whether alternative possibilities are necessary for actions, yet not for omissions, we should ask whether moral intuitions about actions and omissions equally strongly depend on alternative possibilities. The evidence presented suggests that they are. People's moral intuitions for actions and omissions are equally strongly dependent on alternative possibilities. Why is it that for omissions, we find moral ratings that are so close to the midpoint of the scale when the outcome could not have been avoided? The reason seems to be that people tend to hold agents less morally responsible for omissions than for actions in general. This effect is called the *Omission Effect* (Cushman et al., 2012; Willemsen and Reuter, 2016) or *Omission Bias* (Baron and Ritov, 2004; Spranca et al., 1991), and has been repeatedly reported in the empirical literature. It thus comes as no surprise that the same decline in moral responsibility will bring omissions closer to the neutral midpoint compared to actions. As a consequence, ratings close to the neutral midpoint of a rating scale should not be over-valued when determining the Action/Omission Asymmetry question. The more important and illuminating question seems to be to what extent alternative possibilities affect moral intuitions about actions and omissions, and whether actions and omissions differ in this respect.

If this interpretation of the results is convincing, then the evidence in this chapter uniformly suggests that AOAT needs to be rejected. But be it convincing or not, more empirical research is required that addresses the question of whether we should think about moral responsibility and

blame in a binary or graded way. Such research will be essential for all empirical research making use of these terms, and it might make an essential contribution to the philosophical debate as well.

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