Three Forms of Actualist Direct Consequentialism

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Abstract

One family of maximizing act consequentialist theories is *actualist direct* theories. Indeed, historically there are at least three different forms of actualist direct theories (due to Bentham, Moore, and contemporary consequentialists). This paper is about the logical differences between these three actualist direct theories and the differences between actualist direct theories and their competitors. Three main points emerge. First, the sharpest separation between actualist direct theories and their competitors concerns the so-called "inheritance" principles. Second, there are a myriad of other logical differences among actualist direct theories. Third, one theory (Moore's theory) stands out among actualist direct theories because it entails a variety of logical principles. This fact may count in favor of that theory.

Introduction

Even among maximizing act consequentialist theories[1], there are many differences: There are *actualist direct* theories that determine the deontic status of an act by comparing (in terms of goodness) the outcome of that act to the outcome of certain alternatives.[2] There are (actualist) indirect theories which, for example, may determine the deontic status of an act by comparing the outcome of a second act such as a "maximal" act whose performance entails the

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[1]Throughout this paper, our focus will be only on maximizing act consequentialist theories. We ignore non-maximizing consequentialist theories such as satisficing consequentialism (see, e.g., Bradley 2006 for a critical discussion). We ignore non-act consequentialist theories such as rule consequentialism (see, e.g., Hooker 2001 for discussion). And we ignore the many varieties of non-consequentialist theories.

[2]In the terminology of Portmore 2019, these are actualist *omnist* theories. My term 'direct' has roughly the same meaning as Portmore's term 'omnist'. Similarly, my expression 'an indirect theory' has roughly the same meaning as the expression 'a theory that is not omnist' (so the family of indirect theories includes maximalist theories, minimalist theories, and all other non-omnist theories).

performance of the first act to the outcome of certain alternatives.[3] And there are non-actualist theories which, for example, may determine the deontic status of act by comparing the best outcome in which that act is done to the best outcome in which certain alternatives are done.

An example can be used to illustrate the differences between these three families of theories:

> Professor Procrastinate receives an invitation to review a book. He is the best person to do the review, has the time, and so on. The best thing that can happen is that he says yes, and then writes the review when the book arrives. However, suppose it is further the case that were Procrastinate to say yes, he would not in fact get around to writing the review. Not because of incapacity or outside interference or anything like that, but because he would keep on putting the task off. (This has been known to happen.) Thus, although the best that can happen is for Procrastinate to say yes and then write, and he can do exactly this, what would in fact happen were he to say yes is that he would not write the review. Moreover, we may suppose, this latter is the worst that can happen. It would lead to the book not being reviewed at all, or at least to a review being seriously delayed.[4]
> (Jackson and Pargetter 1986: 235)

Actualist direct consequentalist theories will determine the deontic state of Procrastinate accepting by comparing the outcome of his accepting to the outcome of certain alternatives. This outcome is quite bad because if he were to accept, he would not write the review. As we will see in greater detail below, this feature of these theories makes it so that they claim that Procrastinate accepting *lacks positive deontic status* in the sense that Procrasinate is either not obligated or not permitted to accept.[5]

Whether indirect theories and non-actualist theories are committed to the claim that Procrastinate accepting lacks positive deontic status is a more complex matter that may depend on how we fill in certain details of the example. For instance, if we suppose Procrastinate has as an act available to him the "maximal" act of accepting and writing the review (e.g., because if he were to presently intend to accept and write, he would), then certain indirect theories can claim that Procrastinate accepting *has positive deontic status* in that Procrasinate is both obligated and permitted to accept. What these indirect theories would claim is that it is the outcome of Procrastinate accepting and writing the review that is relevant to the deontic status of him accepting. This

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[3]I take Goldman 1978, Ross 2012, and Portmore 2019 to be example of indirect theories. See also Brown 2018 for an important discussion of the notion of a maximal act.

[4]Though the labels *actualism*, I believe, are due to Jackson and Pargetter 1986, cases like this have been discussed prior to this. Indeed, Holly Smith (at the time Holly Goldman) presents a case of exactly this structure in her Goldman 1978: 185-6.

[5]In standard contexts, an act that is not permitted is not obligatory. So it may seem at first blush that one can simply include the first disjunct in the definition of lacking positive deontic status. But, as we will see below, some of the theories that we are discussing will reject this connection between not being permitted and not being obligated.

outcome is very good because if he were to accept and write the review, he would realize the best outcome.

In a different way, certain non-actualist theories may claim that Procastinate accepting has positive deontic status. According to some of these theories, this will be because we determine the deontic status of accepting by considering the best outcome in which one accepts (as opposed to the (actual) outcome of accepting). As the example states, the best outcome in which one accepts is the best outcome overall. So this form of non-actualist theory will claim that Procrastinate accepting has positive deontic status. So there are differences between actualist direct theories and both indirect and non-actualist theories.

There are also differences among actualist direct theories. As I said, all of these theories determine the deontic status of an act by comparing the outcome of the act to the outcome of certain alternatives. But what deontic status? What comparison? And what alternatives? Three main view standout historically. Though it is controversial, Gustafsson 2018 argues that Jeremy Bentham held (the utilitarian version) of the following view:

> BETTER-THAN-NOT: S is obligated[6] to ϕ iff the outcome of S's doing ϕ is better than the outcome of S's doing $\neg\phi$

By contrast, G.E. Moore (Moore 1960 [1903]: 25) held the following view:

> BETTER-THAN-ALT: S is obligated to ϕ iff the outcome of S's doing ϕ is better than the outcome of any alternative to ϕ that is available to S

Finally, the following view appears in the contemporary literature (e.g, Brown 2018 initially defines consequnetialism this way (p. 753) before considering more intricate views):

> NOT-WORSE-THAN-ALT: S is permitted to ϕ iff the outcome of S's doing ϕ is not worse than the outcome of any alternative to ϕ that is available to S

To understand these last two views, it is important to be clear about what an alternative to a given action is. I will say ψ *is an alternative act to ϕ available to S* just in case S is able[7] to ψ but S is unable to $\phi \wedge \psi$.[8,9] This definition of

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[6]We leave implicit a time index on the deontic claim and the (possibly distinct and multiple) time indexes of the actions.

[7]We assume ability claims share the time index of the relevant deontic claim.

[8]§B presents a simple formalization of this and related ideas about the structure of acts mentioned in the body of this paper.

[9]This definition is a natural (albeit disputable) formulation of Moore's view as he states it "In short, to assert that a certain line of conduct is, at a given time, absolutely right or obligatory, is obviously to assert that more good or less evil will exist in the world, if it be adopted, than if anything else be done instead." (Moore 1960 [1903]: 25). Campbell Brown who mentions NOT-WORSE-THAN-ALT, does not focus on this direct actualist theory. Instead, he focuses most on a maximalist theory (an indirect theory) that involves sets of options rather than alternatives to specific acts. Because of this, he does not explicitly define the notion of alternative to an act (but instead focuses on sets of options). That said, the notion given here can be defined within his theory of the structure of acts as I do in §B.

an alternative is different from some others in the literature. The rest of the paper will show some of the properties that emerge from theories that adopt this definition and a note discusses the connection between this definition and others in the literature.[10]

This paper is about the differences between these three actualist direct views.The main point of this paper is that these view are significantly different. Indeed, they make different claims in the case of Professor Procrastinate that we began with. Sorting out these differences will allow us to more clearly see what principles separate different actualist direct theories from one another and to more clearly see what principles separate actualist direct theories from indirect theories and non-actualist theories.[11]

1 Some Observations about the Logic of Actualist Direct Theories

I begin by considering what verdicts these theories give about the case of Procrastinate (§1.1). I then turn to what this tells us about the logic of these theories (§1.2).

1.1 Deontic Verdicts about Professor Procrastinate

To start, we will more carefully introduce our target theories and discuss their claims about the case of Professor Procrastinate. The features that unite actualist direct theories are the following:

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[10]Most writers do not consider this definition of alternative. One reason for this may be that these writers follow Bergström 1966: 35 who assumes that (i) if ψ is an alternative to ϕ, the ϕ is an alternative to ψ and (ii) if ψ is an alternative to ϕ and ϕ is an alternative to χ, then ψ is an alternative to χ (for distinct ψ and χ). Our definition of alternative ensures (i) holds (because $\phi \wedge \psi$ is equivalent to $\psi \wedge \phi$). We however do not assume (ii). Our definition, instead, is similar to the notion of inconsistency among sentences or propositions where it is possible that A is inconsistent with B and B is inconsistent with C without A being inconsistent with C. This has the advantage of avoiding a problem of finding some distinguishes set of "relevant" alternatives that ibid. and others since have discussed (see Carlsson 1995: Ch. 6 for discussion of some of these proposals). On our proposal, each act is compared to every incompatible act.

Other writers such as ibid.: Ch. 6 and Carlsson 1999 reject the idea that if ϕ is an alternative to ψ for S, then S is unable to $\phi \wedge \psi$. But Carlsson's view is arguably best understood as an indirect theory for reasons suggested by Bykvist 2002:§4. Other theories proposed in light of Carlsson's work include ibid. and Gustafsson 2014. Bykvist 2002 offers a maximalist theory (or perhaps more precisely, something quite close to a maximalist theory). So it is an indirect theory. Gustafsson 2014 is also an indirect theory because it determines the deontic status of certain single acts but considering the deontic status of certain act sets. Because of this, none of the theories are the main topic of this paper. Finally, I note in passing that because we adopt Brown 2018's theory of the structure of action, we reject certain claims about action and alternatives made by Bykvist 2002, Bykvist 2007, and Gustafsson 2014. See Brown 2018: §3 for discussion.

[11]This paper has some overlap with Nair 2020. That paper however is less focused on the three actualist direct theories that we will focus on. And it does not consider the full set of logical properties discussed here.

- the deontic status of an act depends how the outcome of that act compares to alternatives

- a possible world, o, is the outcome of S's ϕ-ing iff if S were to ϕ, then o would obtain[12]

Due to these two features and the fact that Procrastinate would not write the review if he were to accept the invitation to do so, actualist direct theories determine the deontic status of Procrastinate accepting the invitation by considering the outcome in which Procrastinate both accepts and does not write the review. Table 1 summarizes the facts in the case of Professor Procrastinate.

Table 1: The Case of Professor Procrastinate

Acts	Outcomes	Ranking of Outcome
accept and write	accepts and writes	Best
accept and not write	accepts and does not write	Worst
accept	accepts and does not write	Worst
refrain from accepting	does not accept	Middle

It may be worth noting that this table mentions both accepting and refraining from accepting as actions. But it does not mention the action of refraining from both accepting and writing and the action of refraining from both accepting and not writing. These acts could be included for completeness, but we do not need to include them for our purposes. Evidently, when Procrastinate refrains from accepting and writing the outcome will either be the same as the outcome in which one accepts and does not write or the same as the outcome in which one refrains from accepting. Similarly, when one refrain from accepting and not writing the outcome will either be the same as the outcome in which one accepts and writes or the same as the outcome in which one refrains from accepting. Which of these it is will not matter for our purposes. And in any case, the main focus of discussion of examples likes this have historically been on the acts of accepting, accepting and writing, and refraining. We will follow this practice.

Next recall that our actualist direct theories are the following.

BETTER-THAN-NOT: S is obligated to ϕ iff the outcome of S's doing ϕ is better than the outcome of S's doing $\neg\phi$

BETTER-THAN-ALT: S is obligated to ϕ iff the outcome of S's doing ϕ is better than the outcome of any alternative to ϕ that is available to S

NOT-WORSE-THAN-ALT: S is permitted to ϕ iff the outcome of S's doing ϕ is not worse than the outcome of any alternative to ϕ that is available to S

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[12]This definition makes sense in light of certain assumptions (e.g., that there is a unique possible world that would obtain if S were to ϕ). See §B for discussion.

where, recall, we say ψ is an alternative act to ϕ available to S just in case S is able to ψ but S is unable to $\phi \wedge \psi$. Applying these theories to the information in Table 1 yields the results provided in Table 2. We can see that accepting lacks

Table 2: Deontic Verdicts of Theories

Theory	Accept and Write	Accept	Reject
BETTER-THAN-NOT	Obligatory	Not Obligatory	Obligatory
BETTER-THAN-ALT	Obligatory	Not Obligatory	Not Obligatory
NOT-WORSE-THAN-ALT	Permissible	Not Permissible	Not Permissible

positive deontic status according to BETTER-THAN-NOT and BETTER-THAN-ALT because it is not obligatory. And we can see that accepting lacks positive deontic status according to NOT-WORSE-THAN-ALT because it is not permissible.

Given only the information we have now, it is hard to compare the verdicts about permissiblity given by NOT-WORSE-THAN-ALT with the verdicts about obligation given by BETTER-THAN-NOT and BETTER-THAN-ALT. There are several ways to over come this difficult. The most straightforward way is to supplement these theories with the following commonly accepted claim:

> DEONTIC DUALISM: S is obligated to ϕ iff it is not the case that S is permitted to $\neg\phi$

This is the approach that we will pursue in the main text. But there are approaches that do not directly connect obligation and permission as DEONTIC DUALISM does. Instead, these approach define both obligation and permission directly in terms of the goodness of outcomes. These approaches will be discussed in an appendix (§A).

But for now, let us focus on the approaches that do adopt DEONTIC DUALISM. Since the relation between obligation and permission is mediated by whether the negation of some act is permissible, we need to pause to be clear on what the negation of the actions in this case are. We have already been assuming that not accepting is the same as rejecting. Earlier, I mentioned the act of not both accepting and writing. As I said there, we will assume this act has the same outcome as accepting and not writing or has the same outcome of rejecting. This means that the outcome of not both accepting and writing is either the middle or worst outcome listed in Table 1. Which particular outcome it is doesn't matter for our purposes. So we may leave it open that there are different ways of precisfying the case that might affect how we understand what outcome would eventuate if one did not both accept and write. Table 3 summarizes the results of these theories supplemented with DEONTIC DUALISM.

1.2 Some Logical Principles

Let us explore some logical principles in the context of this case. Our focus will be on four principles:

Table 3: Deontic Verdicts of Theories Supplemented with DEONTIC DUALISM

Theory	Accept and Write	Accept	Reject
BETTER-THAN-NOT + DEONTIC DUALISM	Obligatory + Permissible	Not Obligatory + Not Permissible	Obligatory + Permissible
BETTER-THAN-ALT + DEONTIC DUALISM	Obligatory + Permissible	Not Obligatory + Permissible	Not Obligatory + Permissible
NOT-WORSE-THAN-ALT + DEONTIC DUALISM	Obligatory + Permissible	Obligatory Not Permissible	Obligatory Not Permissible

INHERITANCE: If S is obligated to ϕ, S able to ψ, S is not able to $\phi \wedge \neg\psi$, then S is obligated to ψ

AGGLOMERATION: If S is obligated to ϕ and S is obligated to ψ, then S is obligated to $\phi \wedge \psi$

NO CONFLICTS: If S is obligated to ϕ and S is obligated to ψ, then S is able to $\phi \wedge \psi$

O ENTAILS P: If S is obligated to ϕ, then S is permitted to ϕ

But some variants and related principles will also be discussed.

1.2.1 Inheritance

By inspecting Table 3, we can see that the case of Professor Procrastinate illustrates that both BETTER-THAN-NOT+DEONTIC DUALISM and BETTER-THAN-ALT+DEONTIC DUALISM must reject INHERITANCE. It also shows that NOT-WORSE-THAN-ALT+DEONTIC DUALISM must reject INHERITANCE though this takes more unpacking.

To see this, first notice that accoriding ot NOT-WORSE-THAN-ALT+DEONTIC DUALISM it is obligatory to not accept. Next notice that it is not possible to not accept and both accept and write. So if INHERITANCE held it would imply that one is obligated to not both accept and write. But next notice that that accepting and writing is permissible according to NOT-WORSE-THAN-ALT. DEONTIC DUALISM therefore implies that it is not obligatory to not both accept and write. In this way, the case of Professor Procrastinate also illustrates that NOT-WORSE-THAN-ALT must rejects INHERITANCE.

These observations confirm the claim made in the literature that actualist direct theories (unlike their competitors) must reject INHERITANCE.[13]

Though it is controversial, I myself find INHERITANCE plausible. So I regard it is a cost to actualist direct theories that they must reject it.

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[13]See Timmerman and Cohen 2019: §1.3 and following for a discussion of the historical context and subsequent debate.

1.2.2 Agglomeration

We now consider whether the theories satisfy AGGLOMERATION:

> AGGLOMERATION: If S is obligated to ϕ and S is obligated to ψ, then S is obligated to $\phi \land \psi$

In doing this, I will assume all of the theories will claim that if one is unable to ϕ, then ϕ-ing lack positive deontic status. So one is not obligated to ϕ and one is not permitted to ϕ. It is not entirely obvious whether the these theories entail this claim because it is not clear how to conceive of an outcome of an act one is unable to do (often, this would involve evaluating a counterfactual claim with an inconsistent antecedent). But I take it the principle is a plausible one that should be added to these theories even if they do not entail it.

With this assumption in hand, we can inspect Table 3 and see that the case of Professor Procrastinate illustrates that both BETTER-THAN-NOT+DEONTIC DUALISM and NOT-WORSE-THAN-ALT+DEONTIC DUALISM must reject AGGLOMERATION. They both claim that it is obligatory to accept and write and it is obligatory to reject. But since no one is able to both accept and write and reject, it follows from these theories that it is not obligatory to accept and write and reject so AGGLOMERATION does not hold.

On the other hand, this case does not show that BETTER-THAN-ALT+DEONTIC DUALISM must reject AGGLOMERATION. Indeed, it can be shown that BETTER-THAN-ALT in fact entails AGGLOMERATION (Proposition 9 in §B).

These observations are relevant to some of the literature about whether actualist direct theories or their competitors are true. It has been suggested there that actualist direct theories must reject AGGLOMERATION.[14] But, as I just mentioned, this is not true of BETTER-THAN-ALT+DEONTIC DUALISM.

Though it is controversial, I myself find AGGLOMERATION plausible. So the fact that BETTER-THAN-ALT+DEONTIC DUALISM accepts this principle counts in its favor.

We can also consider a variant of AGGLOMERATION that concerns a mixture of claims about obligation and permission.:

> O/P-AGGLOMERATION: If S is obligated to ϕ and S is permitted to ψ, then S is permitted to $\phi \land \psi$[15]

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[14]This issue most directly comes up in the contexts of discussions of NO CONFLICTS, see n. 18. In a different contexts, Goble 1996: 318-9 suggests actualist direct consequentialist theories fail to satisfy AGGLOMERATION. Goble briefly mentions (in his n. 2) BETER-THAN-ALT but sets it aside on the grounds that the notion of an alternative is not sufficiently precise. Goble's discussion however does not present grounds for thinking that the definition of an alternative given in this paper is problematically imprecise. Later (in his §6) he discusses an account on which every act is evaluated relative to a fixed set of mutually exclusive and exhaustive acts. This differs from the present proposal according to which a given act is evaluated against alternatives to that very act.

[15]We might wonder about the following agglomeration principle:

> P-AGGLOMERATION: If S is permitted to ϕ and S is permitted to ψ, then S is permitted to $\phi \land \psi$

Inspecting Table 3 shows that the case of Professor Procrastinate illustrates that all three theories must reject O/P-AGGLOMERATION. According to BETTER-THAN-ALT+DEONTIC DUALISM and BETTER-THAN-NOT+DEONTIC DUALISM one is obligated to accept and write and permitted to reject. Since one is unable to do both, one is not permitted to do both. According to WORSE-THAN-ALT+DEONTIC DUALISM one is obligated to reject and permitted to accept and write so by similar reasoning O/P-AGGLOMERATION fails.

It is worth noting (see proof of Proposition 1 in §B) that O/P-AGGLOMERATION is equivalent given DEONTIC DUALISM to the following principle:

> DEONTIC DISJUNCTIVE SYLLOGISM: If S is obligated to $\phi \vee \psi$ and S is obligated to $\neg\phi$, then S is obligated to ψ[16]

This is, to my mind, an appealing principle. And so though BETTER-THAN-ALT+DEONTIC DUALISM has the advantage of accepting AGGLOMERATION, we should not overstate its plausibility. It still must reject (arguably) plausible principles like DEONTIC DISJUNCTIVE SYLLOGISM and INHERITANCE.

Indeed, these facts are not unrelated. It can be shown that the package of AGGLOMERATION and INHERITANCE is equivalent to DEONTIC DISJUNCTIVE SYLLOGISM (see proof of Proposition 2 in §B) . So it follows from the fact that each of the theories that we have discussed rejects INHERITANCE that they reject DEONTIC DISJUNCTIVE SYLLOGISM (and O/P AGGLOMERATION). On the other hand, it only follows from a theory rejecting DEONTIC DISJUNCTIVE SYLLOGISM that it rejects at least one of INHERITANCE and AGGLOMERATION.[17] For this reason, it is useful to focus on the more specific question of the status of INHERITANCE and AGGLOMERATION rather than the directly focusing on DEONTIC DISJUNCTIVE SYLLOGISM.

1.2.3 No Conflict

Let's turn to some no conflict principles beginning with the following one:

> NO CONFLICTS: If S is obligated to ϕ and S is obligated to ψ, then S is able to $\phi \wedge \psi$

We can inspect Table 3 and see that the case of Professor Procrastinate illustrates that both BETTER-THAN-NOT+DEONTIC DUALISM and NOT-WORSE-THAN-ALT+DUALISM must reject NO CONFLICTS. They both claim that it is obligatory to accept and write and it is obligatory to reject.

But this principle is not plausible in general because there are cases where incompatible acts are both merely permissible.

[16]This in turn is equivalent to

> K: if S is obligated to ϕ and S is obligated to $\phi \rightarrow \psi$, then S is obligated to do ψ

And the idea that INHERITANCE and AGGLOMERATION are equivalent to K is a familiar one from discussions in deontic logic surrounding moral conflicts.

[17]As I have noted, BETTER-THAN-ALT+DEONTIC DUALISM is an example of a theory that rejects DEONTIC DISJUNCTIVE SYLLOGISM but preserves AGGLOMERATION. None of the theories discussed in this paper reject DEONTIC DISJUNCTIVE SYLLOGISM and preserve INHERITANCE. But there are theories that do this. The earliest example of such a theory that I am aware of is Chellas 1974.

On the other hand, this case does not show that BETTER-THAN-ALT+DEONTIC DUALISM must reject NO CONFLICTS. Indeed, it can be shown that BETTER-THAN-ALT+DEONTIC DUALISM in fact entails NO CONFLICTS (Proposition 8 in §B).

These observations are relevant to some of the literature about whether actualist direct theories or their competitors are true. It has been suggested there that actualist direct theories must reject NO CONFLICTS.[18] But, as I just mentioned, this is not true of BETTER-THAN-ALT.

Since all the theories that we are considering assume DEONTIC DUALISM, it is worth noting (see proof of Proposition 3 in §B) that NO CONFLICTS is equivalent to the following "mixed" inheritance principle:

O/P-INHERITANCE: If S is obligated to ϕ, S is able to ψ, S is not able to $\phi \wedge \neg\psi$, then S is permitted to ψ

So this shows that though BETTER-THAN-ALT+DEONTIC DUALISM cannot accept INHERITANCE, it accepts a variant of it. This principle, however, can fail for BETTER-THAN-NOT+DEONTIC DUALISM and NOT-WORSE-THAN-ALT+DEONTIC DUALISM.

On the other hand, it is also worth noting (see proof of Proposition 4 in §B) that INHERITANCE is equivalent, given DEONTIC DUALISM, to the following "mixed" no conflict principle:

NO O/P-CONFLICTS: If S is obligated to ϕ and S is permitted to ψ, then S is able to $\phi \wedge \psi$[19]

So this show that though BETTER-THAN-ALT+DEONTIC DUALISM can accept NO CONFLICTS, it (as well as the other theories) cannot accept a variant of it.

Finally, we can consider the following very restricted no conflicts principle:

NO S-CONFLICTS: It is not the case that S is obligated to ϕ and obligated to $\neg\phi$

We can see from Table 3 that NOT-WORSE-THAN-ALT+DEONTIC DUALISM must reject NO S-CONFLICTS. We can show BETTER-THAN-NOT+DEONTIC DUALISM entails NO S-CONFLICTS (Proposition 6 in §B). Since NO S-CONFLICTS follows from NO CONFLICTS, BETTER-THAN-ALT+DEONTIC DUALISM entails this principle as well (Corollary 8.1 in §B).

The lesson once again is that there is something attractive about BETTER-THAN-ALT but we should not overstate how attractive the view is.[20]

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[18]See Kiesewetter 2015, White 2017, and Kiesewetter 2018 for a recent discussion. Timmerman and Cohen 2019 provide a survey and historical reference related to our discussion in their §1 and §3.1.

[19]For similar reasons to the case of agglomeration discussed in n. 15 we do not consider the principle that uses permissibility throughout.

[20]Timmerman and Cohen 2019 claims that every form of actualism is committed to the result that we can avoid obligations due to bad character (in their §3.5.1) and incur obligation to do otherwise bad acts due to bad character (in their §3.5.2). Our discussion shows that the second claim they make is not true: not all forms of actualism are committed to incurring obligations to do otherwise bad acts.

1.2.4 Obligations Entail Permissions

Finally, we can consider the following principle:

O ENTAILS P: If S is obligated to ϕ, then S is permitted to ϕ

We can inspect Table 3 and see that the case of Professor Procrastinate illustrates that NOT-WORSE-THAN-ALT+DEONTIC DUALISM must reject this principle. On the other hand, the example does not show BETTER-THAN-NOT+DEONTIC DUALISM or BETTER-THAN-ALT+DEONTIC DUALISM must reject this principle. And indeed it can be shown that they both entail it (Proposition 7 and Proposition 10 in §B).

Since O ENTAILS P is plausible, this counts against NOT-WORSE-THAN-ALT+DEONTIC DUALISM. Table 4 summarizes the results of §1.2.

Table 4: The Status of Some Logical Principles in Each Theory

Principle	BETTER-THAN-NOT+ DEONTIC DUALISM	BETTER-THAN-ALT+ DEONTIC DUALISM	NOT-WORSE-THAN-ALT+ DEONTIC DUALISM
INHERITANCE	✗	✗	✗
AGGLOMERATION	✗	✓	✗
NO CONFLICTS	✗	✓	✗
NO S-CONFLICTS	✓	✓	✗
O ENTAILS P	✓	✓	✗

2 Conclusion

My goal in this note has been to bring into sharper relief what separates actualist direct consequentialism from one another and what separates these theories from alternative views. Three main points have emerges. First, the literature at various points (see n. 13, 14, 18) has claimed INHERITANCE, AGGLOMERATION, NO CONFLICTS are all principles that separate actualist direct theories (which must reject them) from competitors. But what our work here shows is that this not correct. Instead, the sharpest separation between actualist direct theories and their competitors only concerns INHERITANCE. Second, there are a myriad of other comparisons (§1.2 and §A) to be made among actualist direct theories. Third, BETTER-THAN-ALT+DEONTIC DUALISM stands out among actualist direct theories because it entails variety of logical principles (including principle implicated in debates between actualist direct theories and their competitors). My opinion is that this counts in favor of BETTER-THAN-ALT+DEONTIC DUALISM. But a deeper investigation of these matters is needed.

A Doing without Deontic Dualism

In the main text, we took each of our main three approaches:

> BETTER-THAN-NOT: S is obligated to ϕ iff the outcome of S's doing ϕ is better than the outcome of S's doing $\neg\phi$

> BETTER-THAN-ALT: S is obligated to ϕ iff the outcome of S's doing ϕ is better than the outcome of any alternative to ϕ that is available to S

> NOT-WORSE-THAN-ALT: S is permitted to ϕ iff the outcome of S's doing ϕ is not worse than the outcome of any alternative to ϕ that is available to S

and paired it with:

> DEONTIC DUALISM: S is obligated to ϕ iff it is not the case that S is permitted to $\neg\phi$

This appendix considers what happens if we do not assume DEONTIC DUALISM.

If we do not make this assumption, we need to supplement BETTER-THAN-NOT and BETTER-THAN-ALT with a theory of permission and supplement NOT-WORSE-THAN-ALT with a theory of obligation. Evidently, BETTER-THAN-ALT and NOT-WORSE-THAN-ALT are natural supplements to one another. The features of this package, BETTER-THAN-ALT+NOT-WORSE-THAN-ALT, will be explore in this appendix.

By analogy, it is natural to supplement BETTER-THAN-NOT in the following theory of permission:

> NOT-WORSE-THAN-NOT: S is permitted to ϕ iff the outcome S's doing ϕ is not worse than the outcome of S's doing $\neg\phi$

Interestingly, the package of BETTER-THAN-NOT and DEONTIC DUALISM is equivalent to the package BETTER-THAN-NOT and NOT-WORSE-THAN-NOT (see proof of Proposition 5 in §B). So at least the most natural way of supplementing BETTER-THAN-NOT with a theory of permission distinct from DEONTIC DUALISM ends up entailing DEONTIC DUALISM. There maybe other ways of supplement BETTER-THAN-NOT, but we won't consider them further in this paper.

On the other hand, BETTER-THAN-ALT+NOT-WORSE-THAN-ALT is distinctive. We can see this by returning to the case of Professor Procrastinate and appropriately making use of the information from Table 3 to give us the results we see here in Table 5. While BETTER-THAN-ALT+DEONTIC DUALISM has the same verdicts about obligation as BETTER-THAN-ALT+NOT-WORSE-THAN-ALT, they differ about what is permissible. The first claims it is permissible to accept and permissible to reject; the second claims neither is permissible. And while NOT-WORSE-THAN-ALT+DEONTIC DUALISM has the same verdicts about permission BETTER-THAN-ALT+NOT-WORSE-THAN-ALT, they differ about what is obligatory. The first claims it is obligatory to accept and obligatory to reject, the second claims neither is obligatory.

Table 5: Deontic Verdicts of Theories With and Without DEONTIC DUALISM

Theory	Accept and Write	Accept	Reject
BETTER-THAN-ALT + DEONTIC DUALISM	Obligatory + Permissible	Not Obligatory + Permissible	Not Obligatory + Permissible
NOT-WORSE-THAN-ALT + DEONTIC DUALISM	Obligatory + Permissible	Obligatory Not Permissible	Obligatory Not Permissible
BETTER-THAN-ALT + NOT-WORSE-THAN-ALT	Obligatory + Permissible	Not Obligatory + Not Permissible	Not Obligatory + Not Permissible

This show that DEONTIC DUALISM does not hold in certain examples according to BETTER-THAN-ALT+NOT-WORSE-THAN-ALT. Since rejecting is not accepting, we can see that it is not permissible to not accept, but nonetheless it not obligatory to accept.

Let us next consider the status of the main principles that we discussed earlier. The failures of INHERITANCE can be seen by noting that according to

Table 6: The Logical Principles With and Without DEONTIC DUALISM

Principle	BETTER-THAN-ALT + NOT-WORSE-THAN-ALT	BETTER-THAN-ALT + DEONTIC DUALISM	NOT-WORSE-THAN-ALT + DEONTIC DUALISM
INHERITANCE	✗	✗	✗
AGGLOMERATION	✓	✓	✗
NO CONFLICTS	✓	✓	✗
NO S-CONFLICTS	✓	✓	✗
O ENTAILS P	✓	✓	✗
DEONTIC DUALISM	✗	✓	✓

BETTER-THAN-ALT+NOT-WORSE-THAN ALT, it is obligatory to accept and write and not obligatory to accept.

AGGLOMERATION, NO CONFLICTS, NO S CONFLICTS and can be shown to hold for the same reason they hold for BETTER-THAN-ALT+DEOTNIC DUALISM This is because the reasoning that supports these claims only relies on BETTER-THAN-ALT and does not rely on DEONTIC DUALISM (as can be confirmed by inspecting the proofs of Proposition 9, Proposition 8, and Corollary 8.1).

On the other hand, the reasoning given in favor of O ENTAIL P (see the proof of Proposition 10) does rely on DEONTIC DUALISM. So we should consider whether it holds for BETTER-THAN-ALT+NOT-WORSE-THAN-ALT. As it turn out, a new argument can be provided to show that it does hold (see the proof of Proposition 11 in §B).

We can explore some further questions that are opened up when we do not assume DEONTIC DUALISM. The example of a failure of DEONTIC DUALISM that we looked at earlier showed the following claim was false:

RIGHT-TO-LEFT DEONTIC DUALISM: if it is not the case that S is permitted to $\neg\phi$, then S is obligated to ϕ

This leaves open the possibility that the following may still hold according to BETTER-THAN-ALT+NOT-WORSE-THAN-ALT:

LEFT-TO-RIGHT DEONTIC DUALISM: if S is obligated to ϕ, then it is not the case that S is permitted to $\neg\phi$

And indeed, it does hold (Proposition 12).

We can now turn to the status of some principles that we argued were equivalent given DEONTIC DUALISM. Since these principle need not be equivalent in a setting in which DEONTIC DUALISM fails, we will need to consider them separately.

First, we noted (Proposition 1) that if DEONTIC DUALISM is true, the following principles are equivalent:

O/P-AGGLOMERATION: If S is obligated to ϕ and S is permitted to ψ, then S is permitted to $\phi \wedge \psi$

DEONTIC DISJUNCTIVE SYLLOGISM: If S is obligated to $\phi \vee \psi$ and S is obligated to $\neg\phi$, then S is obligated to ψ

And we also noted DEONTIC DISJUCTIVE SYLLOGISM is equivalent to INHERITANCE+AGGLOMERATION (Proposition 2).

Since we know BETTER-THAN-ALT+NOT-WORSE-THAN-ALT does not validate INHERITANCE, we also know it does not validate DEONTIC DISJUNCTIVE SYLLOGISM. But since DEONTIC DUALISM does not hold according to BETTER-THAN-ALT+NOT-WORSE-THAN-ALT, we cannot conclude from this that O/P-AGGLOMERATION must fail. And indeed, O/P-AGGLOMERATION can be shown to hold (see the proof of Proposition 13) according to BETTER-THAN-ALT+NOT-WORSE-THAN-ALT.

Second, we noted (Proposition 3) that if DEONTIC DUALISM is true, the following principles are equivalent:

NO CONFLICTS: if S is obligated to ϕ and S is obligated to ψ, then S is able to $\phi \wedge \psi$

O/P-INHERITANCE: If S is obligated to ϕ, S is able to ψ, S is not able to $\phi \wedge \neg\psi$, then S is permitted to ψ.

We mentioned earlier than the same proof of NO CONFLICTS (Proposition 8) given for BETTER-THAN-ALT+DEONTIC DUALISM also shows that NO CONFLICTS holds for BETTER-THAN-ALT+NOT-WORSE-THAN-ALT. But since we are not assuming DEONTIC DUALISM, it does not follows O/P-INHERITANCE holds. And indeed it does not hold for BETTER-THAN-ALT+NOT-WORSE-THAN-ALT. As the row for BETTER-THAN-ALT+NOT-WORSE-THAN-ALT in Table 5 shows, it is obligatory to accept and write, but it is not permissible to accept.

Third, we noted (Proposition 4) that if DEONTIC DUALISM is true, then the following principles are equivalent:

INHERITANCE: If S is obligated to ϕ, S is able to ψ, S is not able to $\phi \land \neg\psi$, then S is obigated to ψ.

NO O/P-CONFLICTS: if S is obligated to ϕ and S is permitted ψ, then S is able to $\phi \land \psi$

We already know that INHERITANCE fails according to BETTER-THAN-ALT+NOT-WORSE-THAN-ALT. But since we are not assuming DEONTIC DUALISM, it does not follow that NO O/P CONFLICTS fails. And indeed, it can be shown to hold (see proof of Proposition 14) according to BETTER-THAN-ALT+NOT-WORSE-THAN-ALT.

Fourth, though we did not state it in the main text, if DEONTIC DUALISM is true, then the following two principles are equivalent:

AGGLOMERATION: if S is obligated to ϕ and S is obligated to ψ, then S is obligated to $\phi \land \psi$

PROHIBITION AGGLOMERATION: if S is not permitted to ϕ and S is not permitted to ψ, then S is not permitted to $\phi \land \psi$

This because they just involve substitution claims that are logically equivalent according to DEONTIC DUALISM (as well some different choices of arbitrary letters). Similar remarks hold for the following principles regarding no conflicts:

NO CONFLICTS: if S is obligated to ϕ and S is obligated to ψ, then S is able to $\phi \land \psi$

NO PROHIBITION CONFLICTS: if S is not permitted to $\neg\phi$ and S is not permitted to $\neg\psi$, then S is able to $\phi \land \psi$

So for BETTER-THAN-ALT+DEONTIC DUALISM and NOT-WORSE-THAN-ALT+DEONTIC DUALISM, these principles stand or fall together. And indeed, they all hold according to the first package and all fail according to the second.

But since we are considering a package that does not include DEONTIC DUALISM, we cannot assume they stand or fall together. And indeed, they do not. As already mentioned, the principles concerning obligation both hold. But neither of the principles concerning the impermissible do.

Begin with NO PROHIBITION CONFLICTS. As we can see from the row for BETTER-THAN-ALT+NOT-WORSE-THAN-ALT in Table 5, it is not permissible to accept (i.e., not reject) and it is not permissible to reject (i.e., not accept). But it is impossible to reject and accept.

It is easiest to show PROHIBITION AGGLOMERATION does not hold if we move away from out central example. Instead, consider the abstract example described in Table 7. In this example, it is not permissible to ϕ because the outcome of S doing ϕ—the outcome in which S does $\phi \land \neg\psi$—is worse than the outcome in which S does $\neg\phi$ (which is an alternative to ϕ)—the outcome in which S does $\neg\phi \land \neg\psi$. Similarly, it is not permissible to ψ because its outcome is worse than the outcome of $\neg\psi$. But, it is permissible to $\phi \land \psi$ because the outcome of this act is better than all other outcomes. So PROHIBITION

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Table 7: Abstract Counterexample to Prohibition Agglomeration

Acts	Outcomes	Ranking of Outcome
$\phi \wedge \psi$	$\phi \wedge \psi$ occurs	Best
ϕ	$\phi \wedge \neg\psi$ occurs	Worst
ψ	$\neg\phi \wedge \psi$ occurs	Worst
$\neg\phi$	$\neg\phi \wedge \neg\psi$ occurs	Middle
$\neg\psi$	$\neg\phi \wedge \neg\psi$ occurs	Middle

AGGLOMERATION does not hold according to BETTER-THAN-ALT+NOT-WORSE-THAN-ALT.

Overall then, BETTER-THAN-ALT+NOT-WORSE-THAN-ALT enjoys the logical power of BETTER-THAN-ALT+DEONTIC DUALISM when it comes to principles that only concern obligation. But when it comes to principles that include claims about the (im)perissible, matter are more complex. Sometimes BETTER-THAN-ALT+NOT-WORSE-THAN-ALT validates certain principles rejected by BETTER-THAN-ALT+DEONTIC DUALISM. And sometimes BETTER-THAN-ALT+NOT-WORSE-THAN-ALT fails to validate certain principles that are validated by BETTER-THAN-ALT+DEONTIC DUALISM.

B   Proofs

Though our results (or variants in the spirit of them) may hold in certain other settings, we will assume for concreteness a specific semi-formal picture of the structure of action, the relation between action and outcomes, and the properties of goodness. We begin by describing this background framework and defining each of the theories and principles within this framework. After this, we turn to the proofs.

B.1   The Background Framework

We will assume the picture of the structure of action defended by Campbell Brown (Brown 2018). According to this view, the acts available to an agent at a time form a Boolean algebra. So these acts of an agent S (at a time t) can be modeled by a structure $\langle \mathcal{A}_S, \ll_S \rangle$ where $\mathcal{A}_S$ is the set of act available to the agent and $\ll_S$ is an entailment relation on these acts. More exactly, $\ll_S$ is a reflexive, transitive, and anti-symmetric relation on $\mathcal{A}_S$. We understand $\alpha \ll_S \beta$ as telling us that α entails β for S in the sense that it is impossible for there to be situation in which S does α and S does not do β. We further assume that $\mathcal{A}_S$ is closed under disjunction so that for any two acts, α and β, there is an act $\alpha \vee \beta$.[21] Similarly, we assume that it is closed under conjunction so

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[21]More precisely, for any $A \subseteq \mathcal{A}_S$, there is something, call it $\bigvee A$, such that (i) $\bigvee A \in \mathcal{A}_S$, (ii) $\alpha \ll \bigvee A$ for every $\alpha \in A$, and (iii) for any β such that $\alpha \ll \beta$ for all $\alpha \in A$, $\bigvee A \ll \beta$.

there is such a thing as $\alpha \wedge \beta$[22] and closed under negation so that there is such a thing as $\neg\alpha$.[23] Though these are substantive and potentially controversial assumptions, they are often tacitly accepted by philosophers and have, in any case, been plausibly defended by Brown 2018 (cf. Portmore 2019's notion of "performance entailment").

We can now more precisely define the notion of an alternative. Given a structure $\langle \mathcal{A}_S, \ll_S \rangle$ and acts $\phi, \psi \in \mathcal{A}_S$, we say

ϕ is an alternative to ψ just in case $\phi \wedge \psi = \bigwedge \mathcal{A}_S$

Given the definitions of conjunction given above, $\bigwedge \mathcal{A}_S$ is the act that entails all other acts. This means that it is the impossible act. So this definition says alternatives acts are ones that are impossible to do together. We will also assume for S to be unable to do some act ϕ is for $\phi = \bigwedge \mathcal{A}_S$. We can then understand the usual propositional connectives and entailment in terms of the typical set theoretic resources.

Second, we need to be able to represent the relation between acts and outcomes. We characterized the notion of an outcome in the main text in terms of counterfactual. And the standard formal semantics for these expressions is a kind of possible world semantics. Here we will adopt a suggestion from a referee about how to formalize the relations that we are interested in. For our purposes, we only need to keep track of which acts are done by the agent. So we can identify a possible world with set of actions done by the agent that is consistent and complete. That is, given a structure $\langle \mathcal{A}_S, \ll_S \rangle$,

$w \subseteq \mathcal{A}_S$ *is a possible world* just in case $\bigwedge w \neq \bigwedge \mathcal{A}_S$ and for all $\alpha \in \mathcal{A}$ either $\alpha \in w$ or $\neg\alpha \in w$.

With this definition in hand, we can identify propositions with sets of worlds. So we identify the proposition that S does ϕ with the set of worlds that contain ϕ. We will, then, write $[\phi]$ for the proposition that S does ϕ. And so $[\phi] = \{w \mid \phi \in w\}$. We can accordingly understand the relation of entailment, equivalence, conjunction, disjunction, etc in the standard set theoretic way. And indeed, we will use these terms and symbols like $\wedge$ ambiguously for these relations defined among actions and relation defined among propositions. Context should make clear which is the correct reading.

We can now understand the counterfactual $\square\!\!\rightarrow$ as a relation among propositions satisfying certain constraints (relative to some structure $\langle \mathcal{A}_S, \ll_S \rangle$). The first such constraint is this:

OUTCOME UNIQUENESS: For each $\alpha \in \mathcal{A}_S$ such that $\alpha \neq \bigwedge \mathcal{A}_S$, there is exactly one possible world w such that $[\alpha] \square\!\!\rightarrow \{w\}$

We write $\alpha \vee \beta$ as a more convenient way to write $\bigvee\{\alpha, \beta\}$.

[22]More precisely, for any $A \subseteq \mathcal{A}_S$, there is something, call it $\bigwedge A$, such that (i) $\bigwedge A \in \mathcal{A}_S$, (ii) $\bigwedge A \ll \alpha$ for every $\alpha \in A$, and (iii) for any β such that $\beta \ll \alpha$ for all $\alpha \in A$, $\beta \ll \bigwedge A$. We use $\alpha \wedge \beta$ a more convenient way to write $\bigwedge\{\alpha, \beta\}$.

[23]More precisely, for any $\alpha \in \mathcal{A}_S$, there is something, call it $\neg\alpha$, such that (i) $\neg\alpha \in \mathcal{A}_S$, (ii) $\bigvee\{\alpha, \neg\alpha\} = \bigvee \mathcal{A}_S$, and (iii) $\bigwedge\{\alpha, \neg\alpha\} = \bigwedge \mathcal{A}_S$

This is a strong assumption that can be weakened by adding some complexity to what follows. But we will stick with it for the purposes of keeping things as simple as possible (and in any case, the dispute that is the topic of this paper is not centrally related to this issue). This assumption then allows us to define an outcome as follow:

> *o is the outcome of S's doing α* just in case o is a possible world and $[\alpha] \:\Box\!\!\rightarrow \{o\}$

Since we are assuming OUTCOME UNIQUENESS, it makes sense to describe o as *the* outcome of doing α. In what follows, we will, when it is convenient, omit the braces around propositions that are singleton sets of worlds. So, for example, we might write "$[\alpha] \:\Box\!\!\rightarrow o$" rather than "$[\alpha] \:\Box\!\!\rightarrow \{o\}$".

Though these ideas about outcomes are, perhaps, most at home in a strong logic of counterfactuals such as that due to Stalnaker 1968, the proofs themselves only rely on a few relatively weak further assumptions about the logic of counterfactuals.

> CAUTIOUS MONOTONICITY: If $[\alpha] \:\Box\!\!\rightarrow [\beta]$ and $[\alpha] \:\Box\!\!\rightarrow [\gamma]$, then $[\alpha] \wedge [\beta] \:\Box\!\!\rightarrow [\gamma]$
>
> RIGHT WEAKENING: If $[\alpha] \:\Box\!\!\rightarrow [\beta]$ and $[\beta]$ entails $[\gamma]$, then $[\alpha] \:\Box\!\!\rightarrow [\gamma]$
>
> LEFT EQUIVALENCE: If $[\alpha] \:\Box\!\!\rightarrow [\gamma]$, $[\alpha]$ is equivalent to $[\beta]$ then $[\beta] \:\Box\!\!\rightarrow [\gamma]$

Though CAUTIOUS MONOTONICITY fails in some very weak logics[24], it holds in the standard logics due to Lewis 2001 [1973] and Galles and Pearl 1998. LEFT EQUIVALENCE and RIGHT WEAKENING are accepted by every logic that I am aware of.[25]

Third I assume goodness has standard structural properties (e.g., connectivity and transitivity).[26].

These three elements comprise our background structure.

B.2 Definitions and Notation

We will use the notation 'o_ϕ', 'o_ψ', etc. to refer to outcome of ϕ-ing, the outcome of ψ-ing, etc.

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[24]See Halpern 2000, Zhang 2013, and Icard 2017 for discussion

[25]That said, the issue is a bit more delicate than is indicated in the main text. We are not using some simple notion of entailment such as, for example, the one from the classical propositional calculus. Instead, we have lifted to a propositional level a notion of entailment among acts ($\ll_S$) in a structure $\langle \mathcal{A}_S, \ll_S \rangle$. In effect, this means our notion of entailment (and hence equivalence) is allied with something like the notion of it being metaphysically impossible to do certain acts together rather than the more austere notion of entailment in, e.g, the propositional calculus. Nonetheless, I think this more robust notion of entailment nonetheless yields plausible principles that almost everyone would accept. It is, however, worth flagging this because it is perhaps worth investigating this issue more carefully than I have done here.

[26]That said, certain further assumptions would be required in order to prove this result if OUTCOME UNIQUENESS were abandoned. Roughly, the assumption needed is a version of what Hansson 2001 calls "interpolativity"

We will assume all theories to be discussed accept the following claims about contradictions and tautologies:

- $O\top$: S is obligated to $\bigvee \mathcal{A}_S$

- $\neg O\bot$: S is not obligated to $\bigwedge \mathcal{A}_S$

- $\neg P\bot$: S is not permitted to $\bigwedge \mathcal{A}_S$

Some of these principles are equivalent to one another given various other principles. But we state them separately and assume explicitly all hold because not all theories treat them as equivalent.

We next restate in slightly different form the theories (omitting mention of the above three claims that are also part of their definition) that we will discuss below. First BETTER-THAN-NOT+DEONTIC DUALISM

- S is obligated to ϕ iff o_ϕ is better than $o_{\neg\phi}$

- S is obligated to ϕ iff it is not the case that S is permitted to $\neg\phi$

Next, BETTER-THAN-ALT+DEONTIC DUALISM says:

- S is obligated to ϕ iff o_ϕ is better than o_ψ for every ψ such that $\phi \wedge \psi = \bigwedge \mathcal{A}_S$

- S is obligated to ϕ iff it is not the case that S is permitted to $\neg\phi$

Finally, BETTER-THAN-ALT+NOT-WORSE-THAN-ALT says:

- S is obligated to ϕ iff o_ϕ is better than o_ψ for every ψ such that $\phi \wedge \psi = \bigwedge \mathcal{A}_S$

- S is permitted to ϕ iff o_ϕ is not worse than o_ψ for every ψ such that $\phi \wedge \psi = \bigwedge \mathcal{A}_S$

Finally, we restate in slightly different form all the main principles that we will discuss below:

INHERITANCE: if S is obligated to ϕ, $\psi \neq \bigwedge \mathcal{A}_S$, and $\phi \wedge \neg\psi = \bigwedge \mathcal{A}_S$, then S is obligated to ψ

O/P-INHERITANCE: if S is obligated to ϕ, $\psi \neq \bigwedge \mathcal{A}_S$, and $\phi \wedge \neg\psi = \bigwedge \mathcal{A}_S$, then S is permitted to ψ

AGGLOMERATION: if S is obligated to ϕ and S is obligated to ψ, then S is obligated to $\phi \wedge \psi$

O/P-AGGLOMERATION: if S is obligated to ϕ and S is permitted to ψ, then S is permitted to $\phi \wedge \psi$

NO CONFLICTS: if S is obligated to ϕ and S is obligated to ψ, then $\phi \wedge \psi \neq \bigwedge \mathcal{A}_S$

NO S-CONFLICTS: it is not the case that S is obligated to ϕ and S is obligated to $\neg\phi$

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NO O/P-CONFLICTS: if S is obligated to ϕ and S is permitted to ψ, then $\phi \wedge \psi \neq \bigwedge \mathcal{A}_S$

O ENTAILS P: if S is obligated to ϕ, then S is permitted to ϕ

DEONTIC DUALISM: S is obligated to ϕ iff S is not permitted to $\neg\phi$

LEFT-TO-RIGHT DEONTIC DUALISM: if S is obligated to ϕ, then S is not permitted to $\neg\phi$

DEONTIC DISJUNCTIVE SYLLOGISM: If S is obligated to $\phi \vee \psi$ and S is obligated to $\neg\phi$, then S is obligated to ψ

B.3   Proofs of equivalences

Proposition 1. *If* DEONTIC DUALISM *is true then* O/P AGGLOMERATION *is equivalent to* DEONTIC DISJUNCTIVE SYLLOGISM

Proof. Assume that DEONTIC DUALISM is true. We now prove the result in two stages.

First, assume O/P AGGLOMERATION is true. And assume for *reductio* S is obligated to $\phi \vee \psi$, S is obligated to $\neg\phi$, and S is not obligated to ψ. By DEONTIC DUALISM, S is permitted to $\neg\psi$. Since S is obligated to $\phi \vee \psi$, it follows by O/P AGGLOMERATION that S is permitted to $(\phi \vee \psi) \wedge \neg\psi$. Since $(\phi \vee \psi) \wedge \neg\psi$ is equivalent to ϕ, this means S is permitted to ϕ. By DEONTIC DUALISM, S is not obligated to $\neg\phi$ which contradicts our assumption that S is obligated to $\neg\phi$.

Second, assume DEONTIC DISJUNCTIVE SYLLOGISM is true. And assume for *reductio*, S is obligated to ϕ, S is permitted to ψ, but S is not permitted to $\phi \wedge \psi$. By DEONTIC DUALISM, S is obligated to $\neg(\phi \wedge \psi)$. Since $\neg(\phi \wedge \psi)$ is equivalent to $\neg\phi \vee \neg\psi$, this means S is obligated to $\neg\phi \vee \neg\psi$. Given that S is obligated to ϕ (i.e., $\neg\neg\phi$), DEONTIC DISJUNCTIVE SYLLOGISM tell us that S is obligated to $\neg\psi$. By DEONTIC DUALISM, it follow that S is not permitted to ψ which contradicts our assumption that S is permitted to ψ. $\square$

Proposition 2. *If* $O\top$*,* DEONTIC DISJUCTIVE SYLLOGISM *is equivalent to* INHERITANCE+AGGLOMERATION

Proof. Assume $O\top$. We now prove the result in two stages.

First, assume that DEONTIC DISJUNCTIVE SYLLOGISM is true.

We begin by showing INHERITANCE holds. So assume that S is obligated to ϕ and S is unable to $\phi \wedge \neg\psi$. This means $\neg\phi \vee \psi = \top$. So by $O\top$, S is obligated to $\neg\phi \vee \psi$. Since we know S is obligated to ϕ (i.e., $\neg\neg\phi$), DEONTIC DISJUNCTIVE SYLLOGISM tells us that S is obligated to ψ which completes the proof.

We next show that AGGLOMERATION hold. So assume that S is obligated to ϕ and S is obligated ψ. Since ϕ is equivalent to $(\phi \wedge \psi) \vee (\phi \wedge \neg\psi)$, S is obligated to $(\phi \wedge \psi) \vee (\phi \wedge \neg\psi)$. Since S is obligated to ψ and INHERITANCE holds, S is obligated to $\neg\phi \vee \psi$. Since $\neg\phi \vee \psi$ is equivalent to $\neg(\phi \wedge \neg\psi)$, S is obligated to $\neg(\phi \wedge \neg\psi)$. So by DEONTIC DISJUNCTIVE SYLLOGISM, S is obligated to $\phi \wedge \psi$ which completes the proof.

Second, assume INHERITANCE and AGGLOMERATION are true. We now show DEONTIC DISJUNCTIVE SYLLOGISM holds. Assume S is obligated to $\phi \vee \psi$ and S is obligated to $\neg\phi$. By AGGLOMERATION, S is obligated to $(\phi \vee \psi) \wedge \neg\phi$. By INHERITANCE, S is obligated to ψ which completes the proof. $\square$

Proposition 3. *If* DEONTIC DUALISM *is true, then* NO CONFLICTS *is equivalent to* O/P-INHERITANCE

Proof. Assume DEONTIC DUALISM is true. We now prove the result in two stages.

First assume that NO CONFLICTS is true. And assume for *reductio* that S is obligated to ϕ, $\phi \wedge \neg\psi = \bigwedge \mathcal{A}_S$, but S is not permitted to ψ. By DEONTIC DUALISM, S obligated to $\neg\psi$. By NO CONFLICTS, $\phi \wedge \neg\psi \neq \bigwedge \mathcal{A}_S$ which contradict our assumption that $\phi \wedge \neg\psi = \bigwedge \mathcal{A}_S$.

Second assume that O/P-INHERITANCE is true. And assume for *reductio* that S is obligated to ϕ, S is obligated to ψ, but $\phi \wedge \psi = \bigwedge \mathcal{A}_S$. By O/P-INHERITANCE, S is permitted to $\neg\psi$. By DEONTIC DUALISM, S is not obligated to ψ which contradicts our assumption that S is obligated to ψ. $\square$

Proposition 4. *If* DEONTIC DUALISM *is true, then* INHERITANCE *is equivalent to* NO O/P CONFLICTS

Proof. Assume DEONTIC DUALISM is true. We now prove the result in two stages.

First, assume INHERITANCE is true. And assume for *reductio* that S is obligated to ϕ, S is permitted to ψ, but $\phi \wedge \psi = \bigwedge \mathcal{A}_S$. By INHERITANCE, S is obligated to $\neg\psi$. By DEONTIC DUALISM, S is not permitted to ψ which contradicts our assumption that S is permitted to ψ.

Second, assume NO O/P CONFLICTS. And assume S is obligated to ϕ and $\phi \wedge \neg\psi = \bigwedge \mathcal{A}_S$. By NO O/P CONFLICTS, S is not permitted to $\neg\psi$. By DEONTIC DUALISM, S is obligated to ψ. $\square$

Proposition 5. BETTER-THAN-NOT+DEONTIC DUALISM *is equivalent to* BETTER-THAN-NOT+NOT-WORSE-THAN-NOT

Proof. We prove the result in two stages.

First assume BETTER-THAN-NOT+DEONTIC DUALISM is true. It is immediate that BETTER-THAN-NOT is true. By DEONTIC DUALISM, BETTER-THAN-NOT is equivalent to the claim S is not permitted to ϕ iff $o_{\neg\phi}$ is better than o_ϕ. So S is permitted to ϕ iff it is not the case that $o_{\neg\phi}$ is better than o_ϕ. This is just the same claim as S is permitted to ϕ iff o_ϕ is not worse than $o_{\neg\phi}$ which is NOT-WORSE-THAN-NOT.

Second assume BETTER-THAN-NOT+NOT-WORSE-THAN-NOT is true. It is immediate that BETTER-THAN-NOT is true. Begin by assuming that S is obligated to ϕ. According to BETTER-THAN-NOT o_ϕ is better than $o_{\neg\phi}$. So $o_{\neg\phi}$ is worse than o_ϕ. Thus, according to NOT-WORSE-THAN-NOT, S is not permitted to $\neg\phi$. Therefore, left-to-right direction of DEONTIC DUALISM holds.

To complete, the proof suppose S is not permitted to $\neg\phi$. According to NOT-WORSE-THAN-NOT, this means that $o_{\neg\phi}$is worse than o_ϕ. So o_ϕ is better than $o_{\neg\phi}$. Thus, according to BETTER-THAN-NOT, S is obligated to ϕ. $\square$

B.4 Proofs for better-than-not+deontic dualism

Proposition 6. BETTER-THAN-NOT *entails* NO S-CONFLICTS

Proof. Assume BETTER-THAN-NOT is true. Given the logical properties of betterness, it cannot be that o_ϕ is better than $o_{\neg\phi}$ and $o_{\neg\phi}$ is better than o_ϕ. So BETTER-THAN-NOT tell us it cannot be that S is obligated to ϕ and obligated to $\neg\phi$ $\square$

Proposition 7. BETTER-THAN-NOT+DEONTIC DUALISM *entails* O ENTAILS P

Proof. Assume BETTER-THAN-NOT+DEONTIC DUALISM is true and assume S is obligated to ϕ. By Proposition 6, it follows S is not obligated to $\neg\phi$. Thus, S is permitted to ϕ. $\square$

B.5 Proofs for better-than-alt+deontic dualism

Proposition 8. BETTER-THAN-ALT *entails* NO CONFLICTS

Proof. Assume BETTER-THAN-ALT is true and suppose for *reductio* that (I) S is obligated to ϕ and S is obligated to ψ but (II) $\phi \wedge \psi = \bigwedge \mathcal{A}_S$. By (II), ψ is an alternative to ϕ and vice-versa. Given (I), BETTER-THAN-ALT tells us that the outcome of ϕ is better than the outcome of any alternative to ϕ. So o_ϕ is better than o_ψ. Therefore, there is an alternative to ψ that has a better outcome than o_ψ. So BETTER-THAN-ALT entails S is not obligated to ψ. This contradicts our *reductio* assumption. Thus BETTER-THAN-ALT entails NO CONFLICTS. This also establishes:

Corollary 8.1. BETTER-THAN-ALT *entails* NO S-CONFLICTS

$\square$

Proposition 9. BETTER-THAN-ALT *entails* AGGLOMERATION

Proof. Assume BETTER-THAN-ALT is true and suppose for *reductio* that S is obligated to ϕ and S is obligated to ψ but S is not obligated to $\phi \wedge \psi$. Given BETTER-THAN-ALT, there is some act χ that is an alternative to $\phi \wedge \psi$ such that $o_{\phi \wedge \psi}$ is not better than o_χ. From here, the proof proceeds by cases. The cases will be described in the main text as a structured series of nested binary

options. And a footnote includes a diagram that summarizes the structure of these cases.[27]

To begin then, since χ is an alternative to $\phi \wedge \psi$, it follows given OUTCOME UNIQUENESS that either (I) $\neg\phi \wedge \chi \in o_\chi$ or (II) $\neg\psi \wedge \chi \in o_\chi$.

To complete the proof from here, it helps to first establish the following useful lemma.

Lemma 9.1. *If $\alpha \wedge \beta \in o_\alpha$, then $o_\alpha = o_{\alpha \wedge \beta}$*

Proof of Lemma. Suppose $\alpha \wedge \beta \in o_\alpha$. So o_α entails $[\alpha \wedge \beta]$. We also know that by definition $[\alpha] \mathbin{\Box\!\!\to} o_\alpha$. So RIGHT WEAKENING tell us that $[\alpha] \mathbin{\Box\!\!\to} [\alpha \wedge \beta]$.

From this and once again the definition that tells us $[\alpha] \mathbin{\Box\!\!\to} o_\alpha$, it follows by CAUTIOUS MONOTONICITY that $[\alpha] \wedge [\alpha \wedge \beta] \mathbin{\Box\!\!\to} o_\alpha$.

Next since $[\alpha] \wedge [\alpha \wedge \beta]$ is equivalent to $[\alpha \wedge \beta]$, LEFT EQUIVALENCE tells us that $[\alpha \wedge \beta] \mathbin{\Box\!\!\to} o_\alpha$.

Finally, given this claim and the fact that OUTCOME UNIQUENESS implies that o_α is a possible world, it follows by OUTCOME UNIQUENESS that $o_{\alpha \wedge \beta} = o_\alpha$. $\qquad\square$

Return now to the main proof and suppose (I) is true, then by Lemma 9.1 $o_\chi = o_{\neg\phi \wedge \chi}$. Since S is obligated to ϕ and $\neg\phi \wedge \chi$ is an alternative to ϕ, BETTER-THAN-ALT tell us that o_ϕ is better than $o_{\neg\phi \wedge \chi} = o_\chi$. Now by OUTCOME UNIQUENESS either (i) $\phi \wedge \psi \in o_\phi$ or (ii) $\phi \wedge \neg\psi \in o_\phi$.
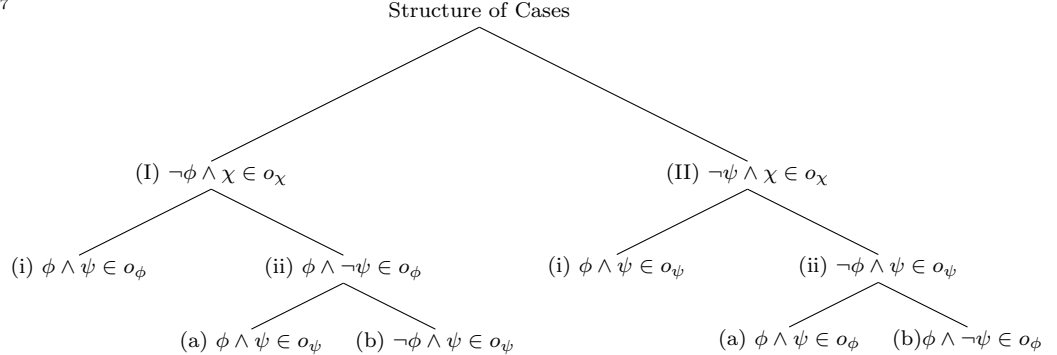
Suppose (i). It follows by Lemma 9.1 that $o_\phi = o_{\phi \wedge \psi}$. Thus, $o_{\phi \wedge \psi} = o_\phi$ is better than o_χ. But this contradicts our prior claim that $o_{\phi \wedge \psi}$ is not better than o_χ. So (i) is false.

So suppose instead that (ii). It follows by Lemma 9.1 that $o_{\phi \wedge \neg\psi} = o_\phi$. Since $\phi \wedge \neg\psi$ is an alternative to ψ and since S is obligated to ψ, BETTER-THAN-ALT tells us that o_ψ is better than $o_{\phi \wedge \neg\psi} = o_\phi$. Now by OUTCOME UNIQUENESS either (a) $\phi \wedge \psi \in o_\psi$ or (b) $\neg\phi \wedge \psi \in o_\psi$.

Suppose (a). It follows by Lemma 9.1 that $o_{\phi \wedge \psi} = o_\psi$. So $o_{\phi \wedge \psi} = o_\psi$ is better than $o_{\phi \wedge \neg\psi} = o_\phi$ which is better than $o_{\neg\phi \wedge \chi} = o_\chi$. This contradicts our assumption that $o_{\phi \wedge \psi}$ is not better than o_χ. So (a) is false.

So suppose instead (b). It follows by Lemma 9.1 that $o_{\neg\phi \wedge \psi} = o_\psi$. Since $\neg\phi \wedge \psi$ is an alternative to ϕ and since S is obligated to ϕ, BETTER-THAN-ALT

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[27]

Structure of Cases

(I) $\neg\phi \wedge \chi \in o_\chi$ (II) $\neg\psi \wedge \chi \in o_\chi$

(i) $\phi \wedge \psi \in o_\phi$ (ii) $\phi \wedge \neg\psi \in o_\phi$ (i) $\phi \wedge \psi \in o_\psi$ (ii) $\neg\phi \wedge \psi \in o_\psi$

(a) $\phi \wedge \psi \in o_\psi$ (b) $\neg\phi \wedge \psi \in o_\psi$ (a) $\phi \wedge \psi \in o_\phi$ (b) $\phi \wedge \neg\psi \in o_\phi$

tells us that o_ϕ is better than $o_{\neg\phi\wedge\psi} = o_\psi$. But this contradicts our earlier claim that o_ψ is better than $o_{\phi\wedge\neg\psi} = o_\phi$. So (b) is false which completes the proof that (I) cannot hold.

So suppose instead (II) holds. Analogous reasoning substituting ϕ's for ψ's and vice-versa shows that (II) cannot hold either.

Thus, BETTER-THAN-ALT entails AGGLOMERATION. □

Proposition 10. BETTER-THAN-ALT+DEONTIC DUALISM *entails* O ENTAILS P

Proof. The proof proceeds analogously to the proof of Proposition 7. □

B.6   Proofs for better-than-alt+not-worse-than-alt

Proposition 11. BETTER-THAN-ALT+NOT-WORSE-THAN-ALT *entails* O EN-TAILS P

Proof. Assume BETTER-THAN-ALT+NOT-WORSE-THAN-ALT is true. And assume that S is obligated to ϕ. According to BETTER-THAN-ALT, this means o_ϕ is better than the outcome of every alternative to ϕ. Therefore, o_ϕ is not worse and the outcome of any alternative. So according to NOT-WORSE-THAN-ALT, S is permitted to ϕ. Thus, BETTER-THAN-ALT+NOT-WORSE-THAN ALT entail O ENTAILS P □

Proposition 12. BETTER-THAN-ALT+NOT-WORSE-THAN-ALT *entails* LEFT-TO-RIGHT DEONTIC DUALISM

Proof. Assume BETTER-THAN-ALT+NOT-WORSE-THAN-ALT is true. And assume that S is permitted to $\neg\phi$. By NOT-WORSE-THAN-ALT, this means $o_{\neg\phi}$ is not worse than the outcome of any alternative to $\neg\phi$. Since ϕ and $\neg\phi$ are alternatives, it follows that o_ϕ is not better than the outcome of every alternative to ϕ. So by BETTER-THAN-ALT, S is not obligated to ϕ. Thus, BETTER-THAN-ALT+NOT-WORSE-THAN-ALT entail LEFT-TO-RIGHT DEONTIC DUALISM. □

Proposition 13. BETTER-THAN-ALT+NOT-WORSE-THAN-ALT *entails* O/P AG-GLOMERATION

Proof. Assume BETTER-THAN-ALT+NOT-WORSE-THAN-ALT is true. And assume for *reductio* that S is obligated to ϕ, S is permitted to ψ, but S is not permitted to $\phi \wedge \psi$. According to NOT-WORSE-THAN-ALT this means there is some χ that is an alternative to $\phi \wedge \psi$ such that $o_{\phi\wedge\psi}$ is worse than o_χ. From here, the proof proceeds by cases. The cases will be described in the main text as a structured series of nested binary options. And a footnote here includes a

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diagram that summarizes the structure of these cases.[28]

To begin, then, since χ is an alternative to $\phi \wedge \psi$ either (I) $\neg\phi \wedge \chi \in o_\chi$ or (II) $\neg\psi \wedge \chi \in o_\chi$.

Suppose (I) is true, then by Lemma 9.1 $o_\chi = o_{\neg\phi \wedge \chi}$. Since S is obligated to ϕ and $\neg\phi \wedge \chi$ is an alternative to ϕ, BETTER-THAN-ALT tell us that o_ϕ is better than $o_{\neg\phi \wedge \chi} = o_\chi$. Now by OUTCOME UNIQUENESS either (i) $\phi \wedge \psi \in o_\phi$ or (ii) $\phi \wedge \neg\psi \in o_\phi$.

Suppose (i). It follows by Lemma 9.1 that $o_\phi = o_{\phi \wedge \psi}$. Thus, $o_{\phi \wedge \psi} = o_\phi$ is better than o_χ. But this contradicts our prior claim that $o_{\phi \wedge \psi}$ is worse than o_χ. So (i) is false.

So suppose instead that (ii). It follows by Lemma 9.1 that $o_{\phi \wedge \neg\psi} = o_\phi$. Since $\phi \wedge \neg\psi$ is an alternative to ψ and since S is permitted to ψ, NOT-WORSE-THAN-ALT tells us that o_ψ is not worse than $o_{\phi \wedge \neg\psi} = o_\phi$. Now by OUTCOME UNIQUENESS either (a) $\phi \wedge \psi \in o_\psi$ or (b) $\neg\phi \wedge \psi \in o_\psi$.

Suppose (a). It follows by Lemma 9.1 that $o_{\phi \wedge \psi} = o_\psi$. So $o_{\phi \wedge \psi} = o_\psi$ is not worse $o_{\phi \wedge \neg\psi} = o_\phi$ which is better than $o_{\neg\phi \wedge \chi} = o_\chi$. This contradicts our assumption that $o_{\phi \wedge \psi}$ is worse than o_χ. So (a) is false.
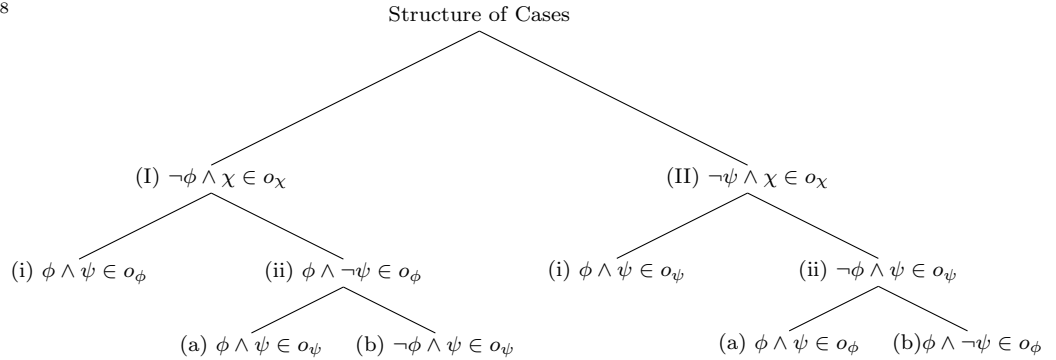
So suppose instead (b). It follows by Lemma 9.1 that $o_{\neg\phi \wedge \psi} = o_\psi$. Since $\neg\phi \wedge \psi$ is an alternative to ϕ and since S is obligated to ϕ, BETTER-THAN-ALT tells us that o_ϕ is better than $o_{\neg\phi \wedge \psi} = o_\psi$. But this contradicts our earlier claim that o_ψ is not worse than $o_{\phi \wedge \neg\psi} = o_\phi$. So (b) is false which completes the proof that (I) cannot hold.

So suppose instead (II) is true, then by Lemma 9.1 $o_\chi = o_{\neg\psi \wedge \chi}$. Since S is permitted to ψ and $\neg\psi \wedge \chi$ is an alternative to ψ, BETTER-THAN-ALT tell us that o_ψ is not worse than $o_{\neg\psi \wedge \chi} = o_\chi$. Now by OUTCOME UNIQUENESS either (i) $\phi \wedge \psi \in o_\psi$ or (ii) $\neg\phi \wedge \psi \in o_\psi$.

Suppose (i). It follows by Lemma 9.1 that $o_\psi = o_{\phi \wedge \psi}$. Thus, $o_{\phi \wedge \psi} = o_\phi$ is not worse than o_χ. But this contradicts our prior claim that $o_{\phi \wedge \psi}$ is worse than o_χ. So (i) is false.

So suppose instead that (ii). It follows by Lemma 9.1 that $o_{\neg\phi \wedge \psi} = o_\psi$. Since $\neg\phi \wedge \psi$ is an alternative to ϕ and since S is obligated to ϕ, BETTER-THAN-ALT tells us that o_ϕ is better than $o_{\neg\phi \wedge \psi} = o_\psi$. Now by OUTCOME UNIQUENESS either (a) $\phi \wedge \psi \in o_\phi$ or (b) $\phi \wedge \neg\psi \in o_\phi$.

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Structure of Cases

(I) $\neg\phi \wedge \chi \in o_\chi$

(II) $\neg\psi \wedge \chi \in o_\chi$

(i) $\phi \wedge \psi \in o_\phi$ (ii) $\phi \wedge \neg\psi \in o_\phi$

(i) $\phi \wedge \psi \in o_\psi$ (ii) $\neg\phi \wedge \psi \in o_\psi$

(a) $\phi \wedge \psi \in o_\psi$ (b) $\neg\phi \wedge \psi \in o_\psi$

(a) $\phi \wedge \psi \in o_\phi$ (b) $\phi \wedge \neg\psi \in o_\phi$

Suppose (a). It follows by Lemma 9.1 that $o_{\phi \wedge \psi} = o_\phi$. So $o_{\phi \wedge \psi} = o_\phi$ is better $o_{\neg \phi \wedge \psi} = o_\psi$ which is not worse than $o_{\neg \phi \wedge \chi} = o_\chi$. This contradicts our assumption that $o_{\phi \wedge \psi}$ is worse than o_χ. So (a) is false.

So suppose instead (b). It follows by Lemma 9.1 that $o_{\phi \wedge \neg \psi} = o_\phi$. Since $\phi \wedge \neg \psi$ is an alternative to ψ and since S is permitted to ψ, NOT-WORSE-THAN-ALT tells us that o_ψ is not worse than $o_{\neg \phi \wedge \psi} = o_\phi$. But this contradicts our earlier claim that o_ϕ is better than $o_{\neg \phi \wedge \psi} = o_\psi$. So (b) is false which completes the proof that (II) cannot hold.

Thus, BETTER-THAN-ALT+NOT-WORSE-THAN-ALT entails O/P-AGGLOMERATION. $\square$

Proposition 14. BETTER-THAN-ALT+NOT-WORSE-THAN-ALT *entails* NO O/P-CONFLICTS

Proof. Assume BETTER-THAN-ALT+NOT-WORSE-THAN-ALT is true. And assume for *reductio* S is obligated to ϕ, S is permitted to ψ, but $\phi \wedge \psi = \bigwedge \mathcal{A}_S$. Since $\phi \wedge \psi = \bigwedge \mathcal{A}_S$, ψ is an alternative to ϕ and vice-versa. Since S is obligated to ϕ, BETTER-THAN-ALT tells us that the outcome of ϕ is better than the outcome of any alternative to ϕ. So o_ϕ is better than o_ψ. Therefore, o_ψ is worse than the outcome of an alternative to ψ. So NOT-WORSE-THAN-ALT entails S is not permitted to ψ. This contradicts our assumption that S is permitted to ψ. Thus BETTER-THAN-ALT+NOT-WORSE-THAN-ALT entails NO O/P-CONFLICTS. $\square$

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