Indeterminacy, Angst and Conflicting Values
JRG Williams

How should we make choices where the values we subscribe to give conflicting recommendations? I will be defending a reduction of decision making under conflict to decision making under indeterminacy, in the spirit of Broome (1998). To defend this, I set out and endorse the basic features of decision making under conflict that Ruth Chang (2002) identifies. I show that we find exactly those features arising in cases of decision making under indeterminacy not involving conflicting values. Further, my theory of decision making under indeterminacy (*Philosophers' Imprint,* 2014) predicts and explains these features. Particular attention will be paid to the aspect that Chang herself emphasizes as the decisive problem for the Broomean reduction: the resolutional residue, or angst, that decision making under conflict evinces.

1. The case of conflicting values.

Here are some tricky choices:

Bitcoin vs. Altruism. *You have some free time in the evenings this week. You can use this to earn money by setting up a bitcoin mining account or you can spend the same time and energy writing letters for Amnesty.*

Charity vs. Charity *You have a box of goods to give to a charity. Down the road to your left is the local Arts charity. Down the road to the right is the Shelter trust. Do you go left or right? (The case is from Schoenfield 2014).*

Emergency Repayment. *You owe your acquaintance money; but urgent need arises in your home village; all others are ignoring the need. You are in a position to help, but only by defaulting on your obligations.*

Many details are left unspecified, and one can produce intuitions that one or the other option is clearly right by varying e.g. the amount of money you stand to gain by the bitcoin mining; the relative efficiency of the charities or the kind and significance of the need in one's home village. But as we vary these parameters from one clear case towards the other, we produce cases where it's very unclear what to do. We are *torn* between conflicting considerations. Following Chang (2002) call these *superhard choices.*

So construed, each scenario presents a choice between two options, and two recognizable sources of value that order the actions in opposing ways. In choosing how to act, we *resolve* this conflict. But what is the right way to do so? This is the central question of *decision making under conflict.*

Decision making under conflict has bottom-up interest for each of us because large-scale, high-stakes, life-shaping choices often have this character (though it is pervasive in mundane cases too).[1] But it's also of theoretical interest. Formal decision theory, often used as a model of rational choice in philosophy and used extensively in other disciplines, works very nicely when we as

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[1] Compare (Ullmann-Margalit 2004).

theorists can assign numerical values to the possible outcomes of our acts, probabilities (whether objective or agent-relative) to available acts bringing about those outcomes, and so calculate the relative choiceworthiness of each option open to us. But decision making under conflict are cases where it's radically unclear how to assign values to the outcomes.

In this respect, the situation is comparable to the puzzle of *decision making under unquantifiable uncertainty*, where another presupposition of applying standard decision-theoretic tools seems to lapse. For example, in deciding whether to invest in an exciting tech start-up, I'd ideally like to know whether it will be a success and make me a profit. Failing that, I'd like to know the *odds* of it being a success and making me a profit—I can then at least figure out the *expected* returns. But the right probability to assign in these cases is radically unclear. So, just as in the case of conflicting values, it appears our normative model of rational choice can't be applied.

One reaction is to develop some new tools designed to handle the job. The classic approach to decision making under unquantifiable uncertainty had this character, proposing choice rules like *maximin* which were discontinuous with the rules for decision making under probabilistic uncertainty.[2] The second reaction is to *reduce* the case to one that the existing tools can handle. The *subjectivist* response to alleged unquantifiable uncertainty is an example of this (the gambit being that in cases like the tech start up, what are not known are the *objective chances of success*, but the relevant quantities for decision theory are *subjective confidence*, which have not been argued to be absent).

This paper defends a reductive response to decision making under conflicting values. It argues (following Broome) that we should identify *decision making under conflict* with *decision making under indeterminacy*—that is, with situations in which it is indeterminate which outcome maximizes value.

The reductive gambit will be informative only to the extent that we have ready-to-hand an account of decision making under indeterminacy. That is a topic that has not been extensively studied, and this means the content of the proposed reduction itself has often been unclear. This paper will do better, since it can draw upon recent work on decision making under indeterminacy. This foundation will allow us to both to evaluate the plausibility of the reduction, and to use features of the underlying phenomenon to predict and explain aspects of decision making under conflict.

The plans of campaign is as follows. After presenting the proposed reduction, I will set out and endorse Chang's identification of key features of decision making under conflict: Sweetening-insensitivity, Permissivism/binding and Resolutional remainder. Those provide a basis for evaluating proposed reductions. I will then give three examples of decision making under indeterminacy (not involving conflicting values), and urge that the very same features are present therein. It is prima facie appealing to find a common source for the shared features, and I will set out the account of indeterminacy and decision making defended in my (2014). That paper predicts and explains sweetening-insensitivity and permissivism/binding (the latter being a particular focus of discussion). But the earlier paper does not discuss resolutional remainder, nor what I take to be its accompanying affect: Angst. Explaining that feature is critical to the plausibility of the reduction defended here, and (given that it's a feature of decisions made under indeterminacy without conflicting values) it's equally a desideratum for the account itself. I'll explain how it arises. I'll also show that Angst guides choice in certain cases. Decision making under indeterminacy is the kind

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[2] (Luce and Raiffa 1989) is a reprint of a survey of the classic approaches. A much more satisfying modern version of this (present e.g. in Schoenfield 2014) is the treatment of decision making under uncertainty via sets of probability functions, as it allows decision making under probabilistic uncertainty to emerge as the limiting case where the set is a singleton.

that underlyies decision making under conflict; but features particularly salient in the special case also illuminate the general structure.

2. The reduction.

Our goal is to treat decision making under conflict as a special case of decision making under indeterminacy. Let's start by assuming that each source-of-value allows us to attach numerical utilities to the two actions. For example, in *Charity vs. Charity,* we have a way of ranking all acts by how good they'll in fact be in promoting the flourishing of the arts---and donating your box of goods to the arts charity has a certain numerical ranking on this scale, as does failing so to do. Likewise, we assume a similar numerical ranking of acts by how good they'll be in ameliorating the suffering caused by homelessness---and donating your box of goods to the other charity has a value on this scale, as does failing so to do. Clearly, the arts charity ranks higher on the first assignments, and the homelessness charity on the second. We now need to capture the fact that these *conflict* in seemingly irresoluble ways.

To apply standard techniques, we need an *overall* ranking. What would do the job is some kind of formula that takes a weighted average of the two numerical rankings in each case. (The following will be an ultra-simplified model, which is just what we want to convey the general idea.) Each act would have overall value $Ax+(1-A)y$, where x is the value attributed by the first source of value, and y is the value attributed by the second, and A is a number between 1 and 0 that gives the rate-of-exchange. Once we fix the weight A, this would give us an overall ranking of the two acts. But—according to this diagnosis of the phenomenon of conflicting values—there is no fact of the matter regarding how A is set. To be sure, we can rule out some suggestions. Extreme weightings, setting $A=1$ or $A=0$, are determinately wrong. But, says the reductionist, there is a zone of indeterminacy in candidate weightings. It is determinately the case that the correct weighting is somewhere in the zone, but where no one weighting within the zone is determinately correct. The net result is the following: in *Charity vs. Charity*, one not-determinately-incorrect weighting of the importance of artistic-enhancement vs. suffering-relief recommends the agent turn left, while another not-determinately-incorrect weighting recommends turning right. Overall, the result is that it is indeterminate whether turning left or right is the thing to do.

So that is our reductive hypothesis, standing ready for a theory of decision making under indeterminacy to tell us how to handle it. To make the case for its plausibility, we will look at features of choice under conflict and show they also arise for choice under indeterminacy.

3. Features of choice under conflict (after Chang).

Here are three features that Chang identifies as characteristic of decision making under conflicting values. I will illustrate them with *Emergency Repayment* but they are intended as general characteristics of the class.

- **Feature 1: Sweetening-insensitivity[3]**
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In the *Emergency Repayment* scenario, the agent is faced with a quandary over what to do. But the quandary is not immediately resolved if we "sweeten" one side of the choice. The intended contrast is between conflicting values and tied values. Suppose that I've fixed on a charity to give

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[3] For the phenomenon, see Chang (1997), p23, 2002 p.667), who credits Raz (1986),Sinnott-Armstrong (1988) and de Sousa (1974). Recent discussion and this label can be found in White (2010), Hare (2010) and Schoenfield (2014).

money to, and I just have to decide whether to donate via Visa or via Mastercard. Such situations may be tied for best---there's nothing to speak for one over the other. However, in the case of ties, if Visa add an extra 0.5% to your donation, then it seems mad not to break the tie in their favour, given that all else is equal. The extra "sweetening" of one option breaks the symmetry and makes one choice clearly best.

Chang's claim is that the *Emergency Repayment* case (and conflicting values cases in general) doesn't exhibit this phenomenon. Add a 0.5% credit card donation to my contribution to the emergency, and it still leaves a quandary whether I should donate or repay.

• Feature 2: Permission/Binding.

In the *Emergency Repayment* scenario, according to Chang (2005), we may resolve the quandary either way—we are all things considered *permitted* to take either option.[4] However, the permissivism is qualified. Suppose you opt for repayment of your loan in the given scenario. Then, if a similar situation arises again, you are committed (have bound yourself) to resolving it in the same way.[5]

To get a grip on what this entails, recall the model of aggregating the conflicting values via some weight A. Opting for loan repayment requires that A is high enough to favour repayment over emergency aid in that scenario. Opting for emergency aid requires A being low enough to favour the reverse. That commitment on the value of A is transferred to future choice situations---if the question of loans vs. repayment comes up again, then (at least on pain of inconsistency) the options for how to fix the rate of exchange have narrowed.[6]

• Feature 3: Resolutional remainder and Angst

Although we are permitted to choose either option in conflicting values scenarios, according to Chang (2002) these permissions have a distinctive character. Let us suppose we have opted to repay rather than donate in *Emergency Repayment*. Chang will say that this was a permissible thing to do. And yet, even though we have in one sense resolved the issue of the relative weighting of the conflicting values, "there is still a further question as to which, if any, weighting one ought to adopt" (2002,p.685). If two agents opt for different resolutions of the same superhard case "there is genuine substantive disagreement between them, not a mere clash of arbitrary decisions". So the resolutional remainder is a kind of persisting perplexity over what the right thing to do was, even once we've admitted that taking either side of a superhard choice is permissible.

That superhard choices have a resolutional remainder is compelling, though it is not immediately clear how to square what it says with Permission/Binding. Part of what I aim to provide below further details about the source and character of the resolutional remainder. I am convinced that it is a central characteristic of decision making under conflicting values, for without it we would

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[4] See Chang (2005) "that it's not a mistake to choose either [option] and that this may continue to be true even if one is improved… roughly approximates what I take to be the practical consequences of being on a par" (p.344); "there are three different cases in which choice between either alternative is rationally permissible: when the alternatives are equally good, incomparable, or on a par" (p.345). Here "on a par" is Chang's name for the relation which on her favoured diagnosis produces the phenomenon of conflict with which we are concerned.

[5] See Chang (2005, p.346-7).

[6] Chang (2005) offers a "value pump" argument for binding: "Suppose A is on a par with B, B is on a par with A+, and A+ is better than A. [the scenario is possible due to sweetening insensitivity]. Now if one is faced with a choice between A+ and B, it is rationally permissible to choose either since they are on a par. Suppose one chooses B. Now suppose that one is offered a choice between B and A. Since they are on a par, again it is rationally permissible to choose either. Suppose one chooses A. But now one is left with A where before one might have had A+, which is better than A. The rational permissibility of choosing either of two items on a par, then, must be constrained by one's other choices." (p.346-7).

struggle to account for the phenomenology of choice in such situations. In high stakes instances, there's a distinctive affect of being forced to make decisions under conflict: an affect we can call *angst*. Sartre's student, torn between joining the free French or supporting his mother, is in angst about what to do. In *Emergency Repayment*, whether you opt to repay or aid your village, it is normatively appropriate to feel angst about your decision. If we couldn't account for the appropriateness of this reaction, something would go wrong.

Why should we feel this angsty way about decision making under conflict? Neither sweetening-insensitivity nor permissivism/binding shed any light on this; and it's hard to account for on a neutral basis. The affect is not explained simply by our seeing the pro tanto value in the option forgone, and regretting that one cannot "have it all"---if that were so, then the same angst would be appropriate in a case of a moral tie, where we can e.g. save only one person out of five, and decide by lot who to save. Such situations may be terribly emotionally wracked, but we take comfort that we did as much as we could. But if there are genuinely conflicting values, one feels angst over *whether one has done the right thing*. That angst, I take it, is tied to the cognitive issue that Chang calls a resolutional remainder---the persisting perplexity over the superhard choice.

A normative theory of decision making under conflict isn't knocked out of contention if it doesn't fit with these characteristics—after all, a normative theory is a potentially revisionary theory. But happily, the reductive account to be proposed here can fit with and explain exactly these characteristics.

4. The case of Alpha and Omega.

I begin to build the case for the reduction of decision making under conflict to decision making under indeterminacy by asking you to consider three cases. Each involves a decision situation where what one should do turns on the answer to a particular question---whether x is the same person as y. We'll set up the case, however, so that there's no fact of the matter whether x is the same person as y. This is a recipe for generating decision problems under indeterminacy, and further, for constructing a variety of cases where *there's a lot at stake* in the decision. (One unfortunate aspect of the theoretical discussion of indeterminacy is that it often focuses on e.g. borderline cases of paradigmatically vague predicates like "red", "bald", "tall" where it's hard to see what could be non-instrumentally at stake. An overriding focus on low-stakes cases distorts our sense of the topic, since it's hard to see why we should *care* about getting to the right answer).

The setup is the following: Alpha will in the weeks ahead be stepping into *van Inwagen's Cabinet* (van Inwagen 1990).[7] While in this devilish invention her psychology and physiology will be scrambled in whatever way is required to make it indeterminate whether she is the same person as the person who steps out the other end---Omega. Perhaps this will be by disrupting the memory links and planning states to mean Alpha is borderline psychologically-connected-enough to Omega---but *you* get to fix the dials on the cabinet so that the case is one where according to *your* favoured theory of personal identity the case is as described.

Ahead of encabination, Alpha is approached with the following offer:

Trade-off. *Broker offers Alpha a deal. She can take a holiday and some consumables now, on the understanding that Omega will do some hard manual labour later on (Omega will be forced to undertake it if she resists). That's the only deal on the table—take it or leave it.*

If Alpha is Omega, then the deal is sweet (from Alpha's perspective). She wants the consumables, and a bit of labour in payment would be well worth it. But if Alpha is not Omega, then the deal is

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[7] Williams (2014a,b) uses this kind of setup to explore issues of prudential decision making under indeterminacy.

morally repugnant. Alpha is getting the goods, and someone else—Omega—will be forced into paying.

The case of Alpha and Omega is one of action taken under *moral* indeterminacy. Determinately, it is morally permissible for Alpha to take the deal iff she is Omega.[8] Since it is indeterminate whether the latter condition obtains, it is indeterminate whether taking the deal is morally permissible. More fully, it's indeterminate whether taking the deal is for Alpha (i) prudentially excellent and morally permissible; or (ii) prudentially excellent and morally repugnant.

The theme has variations, since personal identity is also a locus for morally significant interpersonal tradeoffs and supererogation as well as intrapersonal tradeoffs. We'll set out two variations:

Forced Choices. *The broker offers Alpha a forced choice. Alpha is going to get the goodies either way; but she has to elect who pays the price. Someone will have to do forced labour; it could be Omega, or it could be Beta (an individual determinately distinct from Alpha and Omega). Omega if selected would do labour twice as hard, twice as long as Beta.*

Sacrifice/Murder. *Alpha knows that Beta is at 80% risk of death on the train tracks. She can orientate the cabinet so that the outgoing Omega falls straight onto the points, diverting the train and saving Beta but with a 90% risk of death to Omega herself; or she can orientate it onto the bridge nearby, so that Omega lands safely.*

In *Forced Choices*, if Alpha is Omega, then it is obligatory for her to make Omega pay the price. After all, if Alpha is Omega, then the one who suffers would receive compensation for the labour. On the other hand, if Alpha is not Omega, then Beta should pay the price. Both options are bad, involving the uncompensated suffering of another, but Omega's suffering would be worse, and assuming both are distinct from Alpha, that is morally decisive. So in *Forced Choices*, determinately, choosing Beta is morally permissible and obligatory iff Alpha is not Omega; choosing Omega is morally permissible and obligatory iff Alpha is Omega. Indeterminacy in whether Alpha is Omega produces indeterminacy in what is morally obligatory. Whereas in *Trade-Off,* the morally risk-averse could walk away from the broker's deal, taking the hit on prudential utility in order to ensure they act in ways that are *determinately* morally permissible, in *Forced Choices,* there's no escaping moral indeterminacy.

In Sacrifice/Murder, if Alpha is Omega, then orientating the cabinet towards the points constitutes heroic self-sacrifice. Alpha would be incurring great personal risk to save another. If Alpha is not Omega, then Alpha would be arbitrarily switching risk from one person to another, in the process increasing the total risk of death. Once more, we have moral indeterminacy in virtue of indeterminate personal identity. In this variation, there's an option for Alpha which is determinately morally permissible (leaving the cabinet where it is, so Omega survives and Beta dies). The *other*

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[8] I will be working here with a non-information-dependent moral ought. It's certainly possible to run these cases factoring in Alpha's beliefs, but to do so would require further specification of the cases, and also require background theory about what attitudes are appropriate to adopt to questions that are known to be indeterminate. I provide a systematic set of resources to handle these questions elsewhere, but I don't think it's necessary for present purposes.

option for Alpha, whereby Omega takes the hit and saves Beta, is indeterminate between two statuses: supererogatory vs. impermissible.[9]

5. The features are present in decision making under indeterminacy.

Chang's three features---Sweetening Insensitivity, Permission/Binding and Resolutional Remainder and Angst, are present in the three quandaries just given, just as much as in superhard choices given earlier. There are two ways to evaluate. The first—which each reader must perform for him or herself—is to run through the cases and ask—is this a case where sweetening one of the options would break the symmetry and remove the quandary? Is it one where there's something wrong with taking either side? Is it one where once we've taken the choice, there's no resolutional remainder? In each case, I submit the answer is no.

However, invocation of intuitions will not bear much dialectical weight. Some readers (I trust, a minority) will dissent from these verdicts, or find the wells of intuition running dry.[10] And I confess myself that I do not find *binding* something that I have off-the-cuff opinions about one way or another. This is not surprising—similar skepticism could be raised over whether the three features are characteristic of decision making under conflict, too. But we can go better, by *arguing* that decisions made under indeterminacy will have the three features. In so doing, we not only make the case that the features are common to both Conflicting Values and Indeterminacy, but we show

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[9] In deriving moral indeterminacy in these three settings, I have built upon material-mode formulations of the moral significance of personal identity such as: it's morally okay for y to commit x to unpleasant tasks for y's benefit iff x is the same person as y. This is no doubt only an approximation to the true principle in this area, but simple approximations are an excellent way to study phenomena in a clutter-free way. I doubt that *first-order ethical refinements* of the principle would change the discussion to follow, but I want to flag up (but then set aside) a *truth-theoretic* refinement. Contrast the following pair:

(a) It's morally okay for y to commit x to unpleasant tasks for y's benefit iff x is the same person as y.
(b) It's morally okay for y to commit x to unpleasant tasks for y's benefit iff it's true that x is the same person as y.

The difference here is simply in the insertion of "it's true that" into (b). In a classical setting, the truth equivalence schema tells us that (necessarily) it is true that p iff p. That makes the two principles equivalent. However, if indeterminate propositions are neither true nor false, this requires a nonclassical setting on which the equivalence scheme fails.[9] That matters! Let us suppose that it is indeterminate whether x is the same person as y, and that the right treatment of indeterminacy is gappy, so that it is neither true nor false that x is the same person as y. This makes the right hand side of the (a)-biconditional indeterminate, but it makes the right hand side of the (b)-biconditional false. The (a)-biconditional allows us in these circumstances to derive that it's indeterminate whether it's morally okay for y to commit x to unpleasant tasks for y's benefit. But in the exact same circumstances, the (b)-biconditional will allow us to derive that it's not morally okay for y to commit x to unpleasant tasks for y's benefit. In a classical setting, with the equivalence scheme presupposed, such truth-theoretic variations of moral principles will be mutually entailing, and so there's no need to choose amongst them. But in a nonclassical setting, these are different moral principles. This paper will run with the truth-free version (which is the only option for one who wishes to defend a non-revisionary *classical* theory of indeterminacy). The resources for extending the discussion to nonclassical cases I provide elsewhere.

[10] I want to emphasize that the reader should remember that this is explicitly to be a case where *it's indeterminate what to do*. Some readers may dissent from my case, because they do not agree that this is the right treatment. For example, even if one does not endorse the whole Parfittian package, one might think that the *right* think to do in cases of scaled-down psychological connectedness is to *partially* treat the future individual as you would yourself. This is a theoretical option, but it is not one where we can endorse the material-mode biconditionals above.

that the reductive hypothesis that decision making under conflict *just is* decision making under indeterminacy will *predict* and *explain* those features.

5.1.   Decision making under indeterminacy is sweetening insensitive.

I'll make the theoretical case for sweetening insensitivity in the case of *Forced Choices*, and then apply it to a representative superhard choice under the proposed reduction to indeterminacy, to illustrate the explanation on offer.

In *Forced Choice*, you could lessen the amount of forced labour that Beta would get slightly---sweetening that option---and this would have absolutely no effect on the overall diagnosis. Whether Beta would be forced to work for a day, or just for 23 hours, the principle at stake is that someone other than Alpha is paying the costs of the goodies Alpha receives. And this is not morally acceptable. If Alpha is not Omega, than the work should be imposed on Beta rather than Omega, as the lesser of two evils given that Omega would have to work far longer. So again, sweetening the option makes no difference. Even if we sweeten an option, it remains indeterminate what the agent should do, turning on the question of personal identity. So decision making under indeterminacy is sweetening-insensitive.

Now consider *Charity vs. Charity*. Under the reduction to indeterminacy, the rate of exchange between the goods of flourishing arts and suffering amelioration are indeterminate. Perhaps the appropriate rating is indeterminate over a continuous zone between 0.4 and 0.6., for example. We will suppose that donating to the Arts Charity gets 20 units of arts-goodness (and none of suffering-goodness), and donating to the Homeless Charity gets 25 units of suffering-goodness (and none of arts-goodness). At one extreme of the candidate aggregative weightings, donating to Arts charity gets assigned 8 units and donating to the Homeless charity 15 units. At the other extreme, donating to the Arts charity gets 12 units and donating to the Homeless charity 10. Since it is indeterminate which weighting (or the others in the zone) is correct, it is indeterminate what to do. But adding a sweetener to---say---Arts will not resolve the issue. It would add a bit of a boost (say, +1) to the Arts option, but that will leave the choice indeterminate (9 plays 15 on the one hand, still favouring the Homeless charity; 13 plays 10 on the other, still favouring Arts). So as expected, we have insensitivity to sweetening predicted by the reduction to indeterminacy.[11]

5.2.   Decision making under indeterminacy exhibits permissions/binding.

A case of decision making under indeterminacy is one where it's indeterminate what one ought do. In cases like the *Forced Choices*, it is indeterminate whether a given option---inflicting costs on Beta---is obligatory or forbidden. In that context, it is not at all obvious that we should end up saying that one is *permitted* to make either choice. Indeed, at first glance it looks like this cannot (really, determinately) be the case. If Xing is one of the options in question, then we are saying that (determinately) Xing is permitted on the one hand, but it is not determinate whether Xing is permitted or forbidden on the other. But this is a straightforward contradiction. Prima facie

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[11] Schoenfield 2014 highlights a different sort of case---opaque sweetening, where the agent is exactly 50/50 over which outcome their actions will produce. She argues that superhard decisions are insensitive to this sort of sweetening, and that many models of decision theory that get the right results for paradigm sweetening scenarios fail to generalize. As far as I can see, Schoenfield's challenge applies straightforwardly to the model I offer here, and so I must deny her initial premise, that superhard decision problems are insensitive to opaque sweetening.

decisions made under indeterminacy do not have the second characteristic of decisions made under conflict that Chang identifies.[12] That would be a big problem for the thesis of this paper.

This is where we can appeal to an extant account of decision making under indeterminacy. I have argued (Williams 2014a) that in cases like this, we need to distinguish between *strong* and *weak* notions of permission. In the scenarios we started with, it is indeterminate whether taking the broker's deals are morally permitted *in the strong sense*. That is true in Forced Choices of every action that is open to you. The Changian permissivist thes is is *not true* of decision making under indeterminacy under the strong reading of "permission". The combination of indeterminacy and the strong notion of permission, however, generates a secondary "weak" permission. Consider any option where it is not determinately the case that you are not permitted to perform it. Choosing such an option has a special status, because it is immune to *neutral* criticism and sanction. If your informed peers *judge* that you have done something morally impermissible, or impose sanctions, they are non-neutral in the sense that they take actions which are appropriate only if p, where p is indeterminate. If there's no option where you can reassure yourself that a neutral audience would *approve* – which is the situation in cases such as *Forced Choices* – then options where the neutral audience would at least cannot *condemn* are choiceworthy. Weak permissibility (lack of determinate strong impermissibility) secures this status. Under the reduction to indeterminacy, a decision under conflict such as *Charity vs. Charity* receives exactly the same treatment. Neither

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[12] Chang seems to suppose that decisions made under indeterminacy do have this permissivist character ("every existing account of vagueness…appears to suppose that the resolution of the indeterminacy of borderline cases can be an arbitrary matter"). However, she does explicitly restrict this to *semantic* treatments of vagueness, and sometimes talks as if what is involved in the resolution is a metalinguistic stipulation. But metalinguistic stipulation does not seem at all relevant to the target cases of decision making under indeterminacy I have presented.

option is determinately (strongly) permissible or impermissible, so both options are immune from neutral criticism and in that sense weakly permissible.[13]

Permissibility is one half of the permissibility/binding phenomenon. The other half is *binding*—that resolving a case of conflicting values on one occasion commits one to similar resolutions of similar future situations. For example, suppose that Alpha is faced successively with *Trade Off* and then *Forced Choices*. Taken individually, permissibility tells us that it's (weakly) okay for Alpha to take the broker's deal in Trade-Off, and (weakly) okay for Alpha to make Beta pay the costs in *Forced Choices*. However, the first is permissible only relative to resolutions of the indeterminacy where Alpha is Omega, and the latter is permissible only relative to resolutions of the indeterminacy where Alpha is not Omega. There is no resolution of the indeterminacy on which *both* taking the broker's deal *and* making Beta pay the costs are jointly okay. And because that sequence of choices is determinately not (strongly) permissible, the combination is not even permissible in the weak sense. This predicts a wide-scope "binding", with the effect that once one has made choices under indeterminacy, one narrows down one's options in future choice situations involving the same kind of indeterminacy, on pain of overall incoherence. The dynamics of sequential choice that this phenomenon produces are explored in detail in (Williams 2014a).

Under the indeterminacy reduction, then, we predict the phenomenon of binding that Chang (2005) identifies in decisions made under conflict. Resolve *Charity vs. Charity* in favour of Arts on one occasion, and one has acted in a way that is permissible only relative to some of the resolutions of the indeterminacy in the rates of exchange. If one then acts in the future in ways that were *ex ante* available but require one of the rates of exchange now ruled out, then the course of action as a whole will not be okay under any resolution of the indeterminacy, and so will be determinately impermissible. We would expect the binding phenomenon to arise for decision making under conflict, under the present reduction.

5.3.   Decision making under indeterminacy exhibits Resolution Remainder.

The final feature to be accounted for is Chang's "resolutional remainder". Our characterization of that was somewhat up in the air, but we think of it as a *persisting* perplexity about whether one has done the right thing. In such cases, even after one has chosen an option, the question of whether the chosen option was the *right* thing to do or even an *okay* thing to do, remains pressing. I tied this to an accompanying affect: that of *angst*.

Buridanic situations---cases of choice under indifference or ties—can serve as an uncontentious baseline case where resolutional remainder is absent. Where one has to choose between two equally delicious bales of hay, we find a cluster of features. We are comfortable with letting some arbitrary process settle what we do (a coin flip for example); two actors in identical situations can act in divergent ways without any underlying disagreement; and there is no further normative question of *what to do* once we've laid out the two permissible options. In such cases, there is no "resolutional remainder"—and no angst! The same goes for Buridanic situations with high stakes, with one further overlay. If you can only rescue one of two cats from a house on fire, then you will

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[13] The same treatment goes for the conflicting values in *Emergency-Repayment*. However *Bitcoin vs. Altruism* is an interesting case, as it features a choice between an action that is determinately morally permissible (and determinately prudentially suboptimal) and something that is determinately prudentially optimal but not determinately morally permissible. How we resolve this case depends on the relation between moral and prudential values. If there is some kind of aggregating/averaging mechanism between such values, then this case will be like the others. However, I'm tempted to think that an individual may permissibly discount their own interests in making such choices, and so it will be determinately *all things considered* permissible to be altruistic. On the other hand, it is indeterminate whether it is permissible or not to generate the bitcoin. This view makes this into a case where you have a choice between something that is determinately strongly permissible, and something that is not determinately strongly permissible or impermissible---this is further discussed in the section below.

feel *really bad* about the cat you did not rescue who perished. You may feel personally responsible for their death. But this is not a persisting perplexity over whether your (arbitrary) choice was an *okay thing to do*. It's perfectly consistent to acknowledge, dwell upon and regret the bad consequences of the choice you made, and still reassure yourself that *you did the best you could*.

Superhard cases such as *Emergency Repayment* on Chang's account are like Buridanic case to the extent that multiple options are all things considered permissible (though Permissibility/Binding and Sweetening Insensitivity reflect formal differences from cases of value ties). But Chang is surely right that there's more than this going on—that resolving such situations with a coin flip seems inappropriate and callous, that two actors who take different options in such a situation may see their choices as genuinely in conflict, and that the question *what was the right thing to do?* seems appropriate, even pressing, even once we have recognized the case for what it is—the question of whether what you did was *the best you could do* (all things considered) is still open. Pro tanto regret is appropriate, but not angst over the choice itself.

This resolutional remainder (a focus for Chang 2002) sits somewhat uncomfortably with Permissibility/Binding (the focus of Chang 2005). I'll be arguing in a moment that the reduction to indeterminacy can illuminate this. But first we need to consider whether decisions made under indeterminacy pattern with the Buridanic choice situations or the superhard choice situations.

I maintain, pace Chang, that decisions made under indeterminacy pattern with superhard choice situations. Arguing against this, Chang asks us to consider the following:

> "Jack is required to sort items into one of two piles for a given predicate; items of which the predicate is true go into one pile, and those items of which the predicate is false go into the other pile … suppose that Jack must sort Herbert with respect to the predicate "bald." By hypothesis, he knows all the relevant facts concerning Herbert's cranial hair—the number he has, their distribution, thickness, and so on. Suppose he sees that Herbert is a borderline case of the predicate. Nevertheless, the rules of the game require that Herbert must be sorted into one of the two piles."

She maintains Jack's sorting decision here gives rise to no persisting perplexity. Now, I want to admit that there's little reason to think that Jack is going to sweat the issue much at all, and every reason to think he'd go for some ready-to-hand shortcut like a coin flip. I don't think here we find a strong contrast to the Buridanic cases. But in my view, this is already to be expected by the artificially low-stakes case that has been constructed (Chang emphasizes that no wider reward should turn on Jack getting the case right). Consider how different things are in the decision situations involving vagueness or indeterminacy that I have been using throughout. There, the distribution of risks and rewards, goods and hard labour, turns on the way that we practically resolve borderline cases. The vague predicate involved is morally *significant*. And here, flipping a coin to resolve the situation seems just as callous as in high stakes superhard cases. There is indeed a persisting perplexity over whether one who inflicts labour on Beta in *Forced Choices* has done the right thing. Two agents who take opposing options in the same choice situation may regard themselves as having taken different sides of a single question. Further, as a result of this persisting perplexity, we find angsty affect. I echo and endorse Dougherty's 2013 gloss on having to make high stakes decisions where it turns out to be indeterminate what one should do: "You feel torn…[when you learn that it is indeterminate] should your anxiety dissipate? It seems to me it should not".

Chang is wrong to say there is no resolutional remainder in the case of borderline cases or indeterminacy—once we control for stakes, decisions made under conflict and indeterminacy

pattern alike.[14] Even if I'm right on this front, however, this only gets us to the starting gate. The challenge is not just to make a prima facie case that characteristics of conflict are characteristics of indeterminacy, but also to use our theoretical grip on the latter to explain why the pair have these characteristics. And there's no extant story I'm aware of that explains why there should be angst in the case of indeterminacy.[15] The following sections will attempt to close this lacuna.

6. What underlies angst.

It is indeterminate whether Alpha is Omega. It is indeterminate, therefore, whether a person who judges that Alpha is Omega is judging correctly. If you take an action which is morally okay if and only if Alpha is Omega, it is indeterminate whether you are acting morally correctly. Can we leverage this into an explanation of persisting perplexity, and the accompanying angst? At first, it looks like we cannot, but when we dig deeper, we see how it can arise. I'll set out these in turn.

Suppose you take an action that you are full well aware is all-things-considered permissible if and only if Alpha is Omega (say, taking the broker's offer in Trade Off). On the *mindmaking* account of action under indeterminacy set out in Williams 2014a, you thereby commit yourself to the judgement that Alpha is Omega.[16] To see the case for this, note that due to binding, on pain of incoherence your future choices will have to be as-if Alpha was Omega. From a behavioural point of view, you are indiscernible from one who judged that that Alpha was Omega. Perhaps a case could be made (pace the mindmaking account) that your beliefs are not as your behaviour suggests, but this would require special pleading.

Supposing that is right, suppose you now consider the question of whether the way you have acted is morally okay. You are bound to answer that *yes, it's morally fine*. All sides have agreed at this point that giving the labour to Omega is morally okay iff Alpha is Omega. The agent who has just implicitly committed themselves to Alpha being Omega, will be committed by this biconditional to the claim that giving the labour to Omega was morally okay. Just as the agent takes a side on the indeterminate question about personal identity, they take sides on the indeterminate question about what is (strongly) permissible. It is true that the clear-eyed agent will acknowledge that they have not acted in a way that is *determinately* morally correct. But it's hard to see why we would predict angst on that basis. If you think you've acted morally correctly, why worry about whether this is determinately the case? Determinacy *as such* doesn't matter to us in the way that personal identity and morality do. So it looks like the question of *strong* permissibility as well as *weak* permissibility is closed from the agent's perspective. That makes Changian persisting perplexity, and the accompanying angst, seem inappropriate.

The explanation is close by, however. The reflective agent who opts to inflict labour on Omega appreciates the process that they have undertaken in making the choice. They see that they had a range of options in *Forced Choices* or *Sacrifice/Murder*, none of which were determinately morally

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[14] Note that Chang 2002 *does* leave open, in her closing remarks, that there *may* be some indeterminacy-phenomenon that leaves a resolutional remainder (the suggestion seems to be to link this to the nature of indeterminacy---perhaps that indeterminacy due to semantic indecision does not, but indeterminacy with another source might not). I think this would only be sustainable if for some reason it were irrational to care intrinsically about properties whose indeterminacy had a semantic source.

[15] Crispin Wright's 2003 "fifth column" account of vagueness comes close, but he takes angst-like phenomenon as *basic* features of the phenomenon he calls "quandary", not something to be explained and justified by a more basic theory.

[16] Is this too quick? Might someone take the option, e.g. by flipping a coin, in despair of knowing what to do, without committing themselves to the *truth* of this judgement at all? As well as the point about binding, I want to emphasize that flipping a coin to determine whether to take the broker's offer is a distinct act from *taking the broker's offer*---in these cases, it is often determinately impermissible (see discussion in cite….). Second, Thanks to Thomas Brouwer for pressing me on this point.

permissible. And (according to my story in Williams 2014a) they *randomly and groundlessly* made a judgement call---acted in a particular way, acquired an ongoing disposition to act in that way, and (if only implicitly) formed the corresponding judgement.

Ex ante, the agent had no view about which action is right. *Ex post*, the agent is committed to the view that their groundless judgement call hit on the truth, and the actions that flowed from it were morally fine. A peer, in the same setup, can resolve matters in the opposite direction. The agent will judge that their peer acted wrongly, and ended up with a false judgement. Symmetrically, their peer will judge that the agent acted wrongly, and ended up judging falsely. (Contrast Buridanic situations, where peers may diverge in their choices, but will not criticize the option each other takes.) Although a resolution of a decision made under indeterminacy will be immune from *neutral* criticism, as we have seen it is always vulnerable to *peer* criticism, specifically, to criticism based on judgements formed by the very same procedures and on the basis of the very same evidence as one's own. Vulnerability to peer criticism in this sense is one way that the question of *whether one has done the right thing* remains live, at the communal level.

This does not yet explain the phenomenon that Chang identifies as a resolutional remainder, since she emphasizes a persisting perplexity at an individual level. As of yet we have seen no reason to think that the agent should think negatively of their own choices in the light of the above. However, since the agent and their friend followed the same symmetry-breaking procedure in reaching their divergent choices and judgements, each's negative verdict on the other ramifies to an evaluation of the shared procedure. Each agree that the shared procedure sometimes produces true judgements, but sometimes produces false ones. The agent who makes a groundless, arbitrary judgment call in the course of decision making under indeterminacy must judge that *their own* belief-forming procedure is unreliable in securing truths, and their own practical decision making procedure unreliable in securing (strongly) permissible choices. So as well as vulnerability to peer

criticism, we are also committed to the unreliability of one's own judgement and choice-forming procedures.[17]

This is not yet *perplexity*---it is a settled negative verdict on one's procedure. However, it forms the basis for self-directed persisting perplexity. For quite generally, if one judges that one's own beliefs are unreliably formed, one will be continually tempted to reopen the question of whether they are correct. (Compare the phenomenology of learning about cognitive biases). Thomas Brouwer has suggested to me that this may be accompanied by a second, opposed pressure, *not* to reopen the question because to relegislating the judgement might force them to acknowledge the moral impermissibility of choices they have made. No wonder agents feel torn about being forced to make high-stakes choices where there's no reliable process for them to follow.

In sum, although choices in situations of indeterminacy will be immune from neutral criticism, they will be subject to three reinforcing sources of worry. They are vulnerable to peer criticism, they are based on an unreliable procedure, and (in virtue of this) the question of whether one acted the right way is continually reopened. In low stakes decisions (like Chang's sorting game) this simply won't matter very much, but raising the stakes, like turning up the volume, makes the phenomenon apparent. In high stakes situations, where *getting things right* matters to us emotionally, these three characteristics predictably generate the distinctive affect I've been calling angst.

Under the reductive account of decision making under conflict, all this transfers immediately to decisions made under conflict like *Emergency Repayment* or *Charity vs. Charity*. Whichever way you go, you will implicitly judge one value more weighty than the other. But there's no escaping angst over your vulnerability to peer criticism, the unreliability of your own procedures, and the worry that this prompts about whether your judgement and action were correct.

7. Angst guiding Choice

Each of the features Chang identifies has been grounded in features that flow naturally out of decision making under indeterminacy. This goes just as much for *Persisting-Perplexity/Angst* as for *Sweetening-Insensitivity* and *Permissivism/Binding*. But there is a difference: sweetening-insensitivity and permissivism/binding are properties of choice-behaviour, whereas perplexity/angst concern the agent's attitudes to their choices. I will argue that there is a distinctive property of choice-behaviour—indeterminacy aversion—that is underpinned by perplexity/angst.

Consider the following situation:

Early vs. Late. *Suppose Alpha is offered two deals by the Broker. Either way, she will get the goods. On the first deal, the labour that is payment for the goods will be carried out by precabinet Alpha. On the second, the labour is carried out by Omega as in* Trade-Off.

Under the hypothesis that Alpha is Omega, the two deals are morally equivalent. But under the hypothesis that Alpha is not Omega, one is repugnant and the other remains okay. It seems a uncontrovertible datum what we *should* do is go for the early repayment schedule, where it is *determinate* that the person who gets the goods does the time, rather than one where it's indeterminate whether this is the case. However, it's unclear how our model of decision making under indeterminacy will generate this result. The early repayment option, to be sure, is determinately (strongly) permissible, while opting by late repayment by Omega is not. However, opting for late repayment is not determinately forbidden—and so we should say that this option is immune from neutral criticism, and as such is weakly permissible. It looks like we have to qualify the verdict that weakly permissible options are things that it's okay for us to choose to do---that is so *providing they aren't trumped by an available strongly permissible option*. In a situation where one option is determinately (strongly) permissible, then we will go for that over others that are not determinately strongly permissible. This is indeterminacy aversion.

Faced with a choice between an option that's (determinately) strongly permissible and one that is merely weakly permissible, going for the strongly permissible option secures something which is *not* open to the resolutional remainder and accompanying perplexity/angst. Specifically, the indeterminacy-averse agent will minimize situations where they are vulnerable to peer criticism, where their procedures are unreliable. These observations do not constitute a special boost to the evaluative status of the strongly permissible *action* itself, but they are important characteristics of the *agent*. Agents who wish *reliably* to do what's right will treat merely weakly permissible options as a last resort. No wonder that our intuitions tell us that early repayment trumps late-repayment in *Early vs. Late* case.

Indeterminacy-aversion is a constraint on practical choices, but it has implications for the cognitive role of indeterminacy. Indeterminacy-aversion tells us to avoid undertaking judgement-calls on indeterminate cases unless we are forced to. And so we should expect agents to try to suspend judgement, so far as possible, on indeterminate cases, until their practical situation requires them to undertake a commitment.

Given the reductive account of decision making under conflict, we should expect to find indeterminacy-aversion surfacing in superhard choices too. We should expect to find agents trying to find ways to *bypass* apparent conflicts of values in order to avoid taking a stand on the rates of exchange. I will leave the question of whether we can find confirming instances of this for another day.

Conclusion.
This paper has argued for a reductive account of decision making under conflicting values---one which sees it as a special case of decision making under choice. The strategy has been to identify three characteristics of the former, and argue that they are (i) present in (some!) cases of decision making under indeterminacy and (ii) are predicted and explained by theory of practical reasoning under indeterminacy. Most attention has focused on the case of perplexity and angst, since it is this characteristic that Chang 2002 argued distinguished the cases. But this verdict was the result of a focus on low stakes cases. If we look to high stakes paradigms of decisions made under indeterminacy, indeed find perplexity and angst, and further, get a more refined sense of what exactly this involves. Confirmation arises from the phenomenon of indeterminacy-aversion, which can be explained in terms of that which generates perplexity/angst.

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[17] The observation about evaluations of the heritage of groundless judgment-calls was originally made to me by Crispin Wright as a worry for the mindmaking account. As is evident, I now take it to be a feature of the account, not a bug!

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