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Reconsidering Risk Aversion

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Abstract

Risk aversion is typically inferred from real or hypothetical choices over risky lotteries, but such "untutored" choices may reflect mistakes rather than preferences. We develop a procedure to disentangle preferences from mistakes: after eliciting untutored choices, we confront participants with their choices that are inconsistent with expected-utility axioms (broken down enough to be self-evident) and allow them to reconsider their choices. We demonstrate this procedure via a survey about hypothetical retirement investment choices administered to 596 Cornell students. We find that, on average, reconsidered choices are more consistent with almost all expected-utility axioms, with one exception related to regret.

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I. Introduction

Policymakers, economists, and the popular media have long been worried that Americans may not be investing appropriately in preparation for retirement (e.g., Benartzi and Thaler 1999; Campbell 2006). It may therefore be valuable to give people advice about their asset allocation or to use policy tools, such as defaults, to nudge people toward better allocations (e.g., Thaler and Sunstein 2009). However, to identify what is a "good" asset allocation for an individual (or to set an optimal default allocation for a group), a key input is individuals' risk preferences. Economists' usual approach to measuring risk preferences is to infer them from real or hypothetical choices over risky lotteries.[1] But there is reason for concern that people's untutored choices may not accurately reflect their preferences, since for most people, risky decisionmaking (even if simplified) is unfamiliar and cognitively challenging. Moreover, people's choices often violate basic, seemingly compelling axioms of expected utility (EU) theory, such as the Reduction of Compound Lotteries axiom. While there are economic models that can accommodate such non-EU behavior (e.g., Segal 1990), most are explicitly meant to be descriptive (rather than normative) and thus admit the interpretation that non-standard behaviors represent mistakes, rather than features of actual preferences.

In this paper, we develop a two-stage procedure to measure risk preferences and implement it via a survey administered to a sample of 596 Cornell students. The first stage is the standard method of eliciting choices over risky lotteries. We use hypothetical choices about investing for retirement. We call participants' behavior in this stage their *untutored choices* (which we think of as the experimental analog to real-world investment choices that may be mistaken). Our innovation is the second stage: We confront participants with *inconsistencies* in their untutored choices: their inconsistent responses to choices framed differently that should be the same according to normative axioms of expected utility theory. We also confront participants with *intransitivities* in their untutored choices. We ask participants whether their untutored choices were mistaken, and if so, how they would like to reconsider their choices. We call participants' revised choices their *reconsidered choices*. The major potential concern with such a

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[1] When financial advisors make their portfolio-allocation advice contingent on an individual's risk attitudes, they typically measure the individual's relative ranking in the population, e.g., using a qualitative scale. According to economic theory, however, what is needed is the numerical value of the individual's risk-preference parameters (or at least the distribution of these numerical values in the population, so that an individual's relative ranking can be interpreted numerically). These numerical values would need to be elicited using real or hypothetical choices over risky lotteries, as discussed here.

reconsideration procedure is experimenter demand effects (e.g., Zizzo 2010; de Quidt, Haushofer, and Roth 2018), as we discuss in more detail below.

The key assumption underlying our procedure is that, relative to the untutored choices, the reconsidered choices are a better indicator of the individual's *normative preferences* (which could be used to give people advice or set policy). By normative preferences, we mean the choices an individual would make after full deliberation and absent cognitive error (as in typical philosophical definitions of well-being: e.g., Railton 1986; Hausman 2011).[2] Our approach can be viewed as an implementation of the "behavioral revealed preference" program (Bernheim and Rangel 2009; Bernheim 2016), where we identify a particular frame—namely, the frame generated by understanding of the axiom and full deliberation (which we aim to approximate with our reconsideration procedure)—as the welfare-relevant domain, in which choices are identified with preferences. Our assumption builds on an ancient tradition in moral philosophy, in which individuals aim to achieve a state of harmony between particular judgments and general principles, often called the "method of reflective equilibrium" (Rawls 1971). Decision analysis (e.g., Raiffa 1968) typically draws on a similar method, in which individuals formulate their preferences by resolving internal inconsistencies between initial choices. Our assumption is also related to a traditional defense of the expected utility axioms as normative: the claim that when it is pointed out that people's choices violate the axioms, people would endorse the axioms and reject their choices (e.g., Savage 1954; Raiffa 1961; Morgenstern 1979). To be clear, we do not claim that revised choices are closer to normative preferences in all contexts. For example, time-inconsistent preferences may also cause people to revise choices, typically *away* from normative preferences as a tempting option becomes closer in time (as in Giné et al. 2018). We believe our assumption is most reasonable for abstract choices made in a deliberative state of mind—a context well approximated in our experimental setting. Given our assumption, we can use our

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[2] As Hausman (2016) argues, the attribution of what we are calling normative (i.e., latent, error-free) preferences to an individual is theoretically useful for economists but does not presuppose that they truly exist. Normative preferences are "an account, which the agent can affirm or dispute, of what matters most to this flesh-and-blood individual" (p. 28). Hausman points out, however, that postulating such preferences is epistemologically problematic if there is no way of learning about them from actual behavior. Our reconsideration procedure is one proposal for how we may learn about normative preferences. See also Ferreira (2018) for a philosophical defense of "confirmed choices" as a proxy for welfare.

reconsideration procedure to separate mistakes from deliberate axiom violations, and to obtain a better measure of risk preferences for normative purposes.[3]

We conduct a proof-of-concept test of our reconsideration procedure in a sample of 596 Cornell students, 237 of whom returned to the lab 2-4 weeks later for a second wave of the experiment. In each wave, the first stage of our experiment elicited untutored risk choices. These were measured using hypothetical scenarios about investing for retirement, with monetary outcomes describing "how much you have to spend each year during retirement from age 65 on." For example, in one of the screens, shown in Figure 1A, participants chose between two compound lotteries, a riskier lottery ("BDF") pictured on the left and a safer lottery ("BDE") pictured on the right. In another screen, shown in Figure 1B, participants again made a choice between two lotteries—the "same" two lotteries according to the Reduction of Compound Lotteries axiom but framed as reduced simple lotteries. As in much prior work on framing effects and non-expected utility (e.g., Kahneman and Tversky 1979), we find that participants often make inconsistent choices across different frames. In the Reduction of Compound Lotteries example, among those who participated in both waves of our experiment, 26.1% made different choices in their initial, wave-1 untutored choices.

In the second stage, we confront participants with intransitivities and inconsistencies in their untutored choices. Continuing the example, suppose that in the first stage, a participant had answered one of the survey screens with "BDE" and the other with "BDF." We show both decisions on the same screen and ask the participant to endorse one of two statements: "It makes sense to have the same choice in both questions" or "It makes sense to have different choices." If a participant reported that it made sense to have the same choice, then we give the participant the option of changing one or both decisions.

As noted above, the key concern with an experimental design like this, in which participants are asked if they want to change choices they made earlier, is a possible "experimenter demand effect": a participant may infer from the question itself that he or she *should* change the earlier choice or, relatedly, should be making consistent choices. Our

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[3] In our context of retirement investment choices, other approaches to inferring normative preferences (as in Beshears et al. 2008) are difficult to implement. For example, we typically cannot observe what choices people would make with repetition and feedback because retirement investment choices are only made once, and we cannot rely on the choices made by experienced or expert decision-makers if there is meaningful heterogeneity in risk preferences.

experimental design included three main features intended to minimize such effects or measure their impact. First, whenever we offered participants the opportunity to change one of their choices, we also offered the additional options of keeping both choices the same and of switching *both* choices, thereby making our intent less obvious than if we had urged participants to make their choices consistent. Similarly, when we offered participants the opportunity to rank options for which pairwise choices led to an intransitive cycle, we always offered the option of not ranking the options.

Second, roughly half the time that we offered participants the opportunity to change one of their choices, we selected pairs of choices that were already *consistent* with the relevant normative axiom. By doing so, we further masked our intentions and also obtained a placebo measure of how often people change their choices when prompted to do so. While participants who participated in both waves revised their untutored choices on average 46.0% of the time when these choices were inconsistent, they did so only 1.9% of the time in the placebo cases when the choices were originally consistent.

Third, we formulated axioms of expected utility theory in a way that made each axiom transparently simple. This is an important innovation of our design. It is crucial that participants understand the axioms, but explaining the axioms to participants could strengthen demand effects. We broke down the Independence Axiom, which is complex to someone untrained in economic theory, into six easy-to-understand subcomponents, one of which is Reduction of Compound Lotteries. These six axioms plus transitivity, together with completeness and continuity (which we assume but do not test), imply expected utility theory. When we confronted experimental participants with choices inconsistent with an axiom, it was thus self-evident why someone might want the choices to be consistent, and we left it up to the participants to decide if they thought the situations were sufficiently different to warrant different choices. In addition, to minimize misunderstandings based on lack of familiarity with probabilities, we only used probabilities of 50% and 25%, and we provided participants with basic probability training.

We divide axiom violations into "intransitivities" and "inconsistencies" (all other axiom violations). We find that, on average across the six axioms we examine, in their initial untutored choices, those who participated in both waves exhibit 22.4% of the inconsistencies that would be possible (relative to a benchmark of 50% for random choice). The reconsideration procedure leads to substantial movement overall toward endorsing the normative axioms. By the end of the

second wave of the experiment, the average inconsistency rate fell to 8.4%. Respondents similarly exhibit a substantial reduction in intransitivities, from 38.1% of potential intransitivities in initial untutored choices to 5.3% at the end of the second wave. While we do not know if we would see further declines with additional stages of reconsideration, we interpret our results as suggesting that for most participants and for all the axioms except one, violations of the axioms in untutored choices reflect mistakes rather than normative preferences. The one exception is an axiom we call "Irrelevance of Background Counterfactuals," which is related to anticipated regret or reference-dependent preferences with a counterfactual reference point. For that axiom, we find no evidence of a reduction in inconsistencies across multiple stages of reconsideration in both waves of the experiment.

To complement our descriptive analyses, we conduct a structural estimation. While our descriptive analyses allow for the possibility that participants' preferences may violate one or more expected-utility axioms, our structural estimation assumes not only expected-utility theory but, more specifically, constant relative risk aversion (CRRA). Within each of three frames, pooling choices across participants, we estimate participants' relative risk aversion and response-error variance. In the structural model, intransitivities and any other within-frame inconsistencies are attributed to response error. We estimate that response-error variance declined with each round of reconsideration. This result largely reflects the finding from our descriptive analysis that intransitivities declined over the course of the experiment. We estimate a high level of risk tolerance in our sample (close to log utility), and we find no evidence of a systematic change in risk aversion resulting from our reconsideration procedure.

This paper contributes to a growing literature on behavioral welfare economics (see Bernheim and Taubinsky 2018 for a review) and methods of using observed choices to draw inferences about normative preferences (e.g., Benkert and Netzer 2018; Goldin and Reck forthcoming). It is most closely related to other work that also aims to learn about normative preferences by offering experimental participants an opportunity to revise their choices (both an older literature pioneered by MacCrimmon 1968 and several recent papers: Gaudeul and Crosetto 2019; Breig and Feldman 2020; Nielsen and Rehbeck 2020).[4] In Section V, we briefly

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[4] Less directly related but in a similar spirit to the experiments reviewed here, Zhang and Abaluck (2016) interview Medicare Part D enrollees, walking them through the Medicare.gov online plan-finder tool to find the lowest-cost health insurance coverage, and then assessing their interest in switching away from their current plan. They found that few enrollees wanted to switch plans because their plan had been chosen by someone else (e.g., another family

review that body of work, categorize the experiments that have been conducted, and place this paper in the context of that literature.

The rest of the paper is organized as follows. In Section II, we describe the sample, the risky choices posed to participants, and the experimental design. Section III presents descriptive results. In Section IV, we report results from our structural estimation of CRRA utility. Section V discusses related literature, and Section VI concludes. The Survey Appendix contains screenshots from the experiment. The Web Appendixes contain additional and robustness analyses.

II. Experimental Design

II.A. Participants and Session Procedure

We recruited 596 experimental participants from the subject pools of Cornell's LEEDR and Business Simulation laboratories. Of the participants, 65% were female. Mean age was 20.9 years, with approximately 90% between the ages of 18 and 22.

We initially collected data on 321 participants from July to December 2013. We collected data on 275 additional participants in April 2014. We refer to these two groups as the "version 1" and "version 2" samples because we modified the experiment slightly in the later data collection. In particular, in version 1, we elicited open-ended responses to questions about why a person revised their choices as they did or why they did not revise their choices (these responses are listed in Web Appendix A). In version 2, we instead elicited multiple-choice responses. Also, in version 2, as described below we elicited more information in one of the frames, Complete Contingent Action Plan. The experiment was otherwise identical.

We invited all of the version 2 sample back to the laboratory 2-4 weeks later, and 237 (86.2%) agreed. When we pool across the version 1 and version 2 samples and analyze data from only the first time participants came to the lab, we refer to the sample as "wave 1." The wave 1 sample thus includes all 596 participants. When we restrict the data to the version-2 participants

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member) or because they were satisfied enough with their current plan and were afraid the new plan may be worse for an unanticipated reason. Our paper is also related to Ambuehl, Bernheim, and Lusardi (2017), who present experimental participants with different framings of the same asset, where the frames should be irrelevant according to mathematical principles (e.g., $10 invested for 15 days at 6% interest per day compounded daily versus $24 in 15 days). Ambuehl, Bernheim, and Lusardi use the difference in willingness-to-pay across frames for the assets with the same dollar value as a measure of participants' mistakes.

who participated in both waves of the experiment, we refer to the sample as "wave 1+2." The wave 1+2 sample includes the 237 who came back to the lab. Below we describe the differences between waves 1 and 2. The experiments were otherwise identical. Throughout the paper, in order to analyze data across both waves and keep the sample constant, we focus most discussion on the wave 1+2 sample. Web Appendix D reports complete results for the wave-1 sample.

Participants were paid $40.25 per wave. In wave 1, version-2 participants were also offered the option of participating in another, unrelated experiment that additionally paid them, and almost all participants agreed.[5] Experimental sessions were scheduled for 2 hours each. After initial introductions and setup that took roughly 10 minutes, participants filled out the online survey, which was programmed in the RAND Corporation's Multimode Interviewing Capability (MMIC) survey software. Mean completion time for the survey was 72.5 minutes for version 1, 63.8 minutes for version 2 wave 1, and 52.7 minutes for version 2 wave 2.

In designing our experiment, we decided to recruit undergraduate participants, and we decided to have them make hypothetical investment choices. We recruited undergraduates because we could obtain a large sample at relatively low cost, and (relative to a web sample) we could better monitor them to minimize distractions during the long experiment. We focused on investment choices because such choices motivated our experiment. Our design decisions have disadvantages relative to studying an older sample for whom the choices would be more familiar and relevant, and/or using incentivized small-stakes gambles. We view our experiment as a test of feasibility for our design, which could subsequently be refined and extended to other samples and choice contexts.

In wave 1, the experimental session had five parts:

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[5] This was a happiness-tracking experiment that had two components. First, participants received six text messages per day over a 4-week period, both before and after wave 2. Participants were paid $0.25 per text message that they responded to within 90 minutes, as long as they responded to at least 70% of the text messages. Those who reached the 70% threshold could earn between $35 and $50. Second, during the wave-2 experimental session, participants who signed up for wave 2 had an opportunity to win money from a coin flip. Each participant was randomly assigned to one of four amounts of money they could win: $1, $5, $25, and $125. The expected additional payment for wave-2 participation was therefore $19.50. The coin flip occurred immediately after the wave-2 elicitation of untutored preferences (described below). These participants also filled out a short questionnaire at the end of their wave-2 experimental session.

1. **Training Batteries:** Explained the symbols used in the investment choices and described background assumptions we wanted subjects to hold while making their choices.[6] Participants could not continue until they correctly answered nearly all quiz questions about the training.

2. **Elicitation of Untutored Preferences:** Choices between hypothetical investments.

3. **Psychological and Cognitive Batteries:** These included: the cognitive reflection task (Frederick 2005); a number series task (McArdle, Rodgers, and Willis 2015); a 10-question Big-Five personality battery (Gosling, Rentfrow, and Swann 2003); a probabilistic sophistication battery (developed by Miles Kimball); and the need for cognition scale (Cacioppo and Petty 1984). These batteries were interspersed between sets of questions from part 2 in a random order.

4. **Reconsideration of Preferences:** Opportunities to revise untutored preferences.

5. **Post-Experimental Questionnaire and Demographics:** Questions such as how much the experiment made them feel enjoyment, annoyance, stress, and frustration, and demographic questions.

Parts 2 and 4 constitute the core of our experiment and are described in the next two sections. Other parts of the experiment are mentioned as needed throughout the paper.[7] Screenshots of the complete survey are in the Survey Appendix.

In wave 2, we omitted part 3, and we abbreviated parts 1 and 5 by dropping the quizzes and demographic questions. These returning participants saw a re-randomized version of parts 2 and 4.

II.B. Instructions

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[6] We randomized half the participants to also get a probability training and quiz (alongside the other training batteries). The other half of participants did not get the training and answered the quiz in Part 5 (immediately before the demographic questions). This randomization allowed us to test the effect of probability training on the number of inconsistencies in the untutored choices. Participants who received the training had somewhat fewer inconsistencies (5.6) than those who did not (6.0), but the p-value for the difference is 0.28 (Web Appendix Table C.12).

[7] We also included a set of 12 text-based, binary hypothetical choices between a certain amount of consumption each year in retirement and a 50-50 gamble between two amounts. These were inspired by similar questions asked in the Health and Retirement Study (Barsky et al. 1997). The questions were randomized to appear during part 1 for half the participants and during part 5 for the other half. We initially designed these text-based questions because we intended to assign monetary amounts for the survey (as described in Section II.C below) to each participant based on which CRRA parameter was closest to what would be implied by their responses to the text-based questions. Ultimately, however, we decided instead to randomize the monetary levels and randomize the placement of the text-based questions, and we did not use the data from them.

At the very beginning of the survey, before explaining the symbols used in the investment choices, we instructed participants to interpret the payoffs as representing annual consumption streams in retirement: "This amount of money is *how much you will be able to spend every year during retirement, from age 65 on*. It is the only money you will be able to spend each year. It must be used to cover rent, food, clothing, entertainment, etc. This amount is what you have to spend after paying income taxes." Later, among the training batteries in part 1, we further instructed participants to make some assumptions that help ensure that the monetary payoffs represent consumption streams:

> In addition to the instructions you've already seen, you should imagine the following situation. These things are meant to help make your decisions a little easier, by removing some uncertainties you might otherwise have considered in your decision making:
>
> The government provides free medical insurance, and you are in good health.
>
> The government **no longer** provides social security (i.e. monthly checks).
>
> There is **no** inflation.
>
> Imagine that your friends and extended family outside of your household do **not** need financial help from you, and you **cannot** ask them for money.
>
> When you retire at age 65, you plan to move into rental housing that will have a monthly payment.
>
> **Note that you have no other resources beyond the amounts specified by your decisions.** For example, any money you get from selling your existing home has already been figured into the yearly spending you can afford.

We quizzed participants about these instructions and reviewed them if participants got fewer than five out of six quiz questions correct.

II.C. The Master Decision Tree

All the risky gambles we posed were derived from a *master decision tree*, shown in Figure 2. There is an initial binary choice made at age 35 between A and B. A is a riskless choice, meant to correspond to a portfolio of safe assets, whereas B is a risky choice, meant to correspond to a portfolio of equities. Conditional on choosing B, there is a 50% chance of each of two subsequent binary choices to be made at age 50, meant to correspond to rebalancing a risky portfolio that may have gone up or down in value. Each of these choices, C versus D or E

versus F, is between a safe and a risky option. Five contingent plans are possible: A, BCE, BCF, BDE, and BDF.

Several design decisions are apparent from the figure. For example, we labeled safe options as "conservative," we depicted probabilities with a shaded pie chart, and we only used familiar probabilities: 50% and (when we reduce compound lotteries) 25%. These and other design decisions were informed by feedback we received during pilot testing about how to make the risky gambles easier to understand.

Figure 2 depicts one of ten sets of monetary amounts into which participants were randomized. Web Appendix B lists all ten sets. Within each set, the payoff triples in each of the three risky choices in the master decision tree are a constant multiple of each other, except that we rounded payoff amounts to the nearest 1k. For example, for the monetary amounts in the figure, the triples (225k, 150k, 108k) (the payoffs in the E versus F choice), (108k, 72k, 52k) (the payoffs in C versus D), and (150k, 100k, 72k) (the payoffs in A versus B, assuming safe choices for B) are approximately constant multiples of each other. Given the roughly fixed payoff ratios, an agent with constant relative risk aversion (CRRA) equal to 1.576 would be roughly indifferent at every decision node. The next four sets of monetary amounts have payoffs 100k, 150k, and 225k for the same outcomes as in Figure 2 but adjust the other payoffs to correspond to CRRA indifference cutoffs of 2.958, 4.865, 12.113, and 17.967. We chose this range of CRRA indifference cutoffs to roughly correspond to the 10th and 90th percentiles of estimated CRRA parameter values from Kimball, Sahm, and Shapiro's (2008) study of Health and Retirement Study respondents' choices in hypothetical gambles, which were 2.5 and 16.0, respectively. The last five sets of monetary amounts are the same as the first five but with every payoff cut in half, and so the last five correspond to the same CRRA levels as the first five. Due to a bug in our code, all version-1 participants were randomized into one of the four sets corresponding to the CRRA levels of 12.113 and 17.967. To reduce the imbalance across all the monetary levels, we randomized all version-2 participants into one of the six sets corresponding to the CRRA levels of 1.576, 2.958, and 4.865.

Within a wave, a participant was always asked questions based on the same set of monetary amounts. Participants who returned for a second wave received a re-randomized version of the survey. Since all of these were version-2 participants, they had a 4/5 chance of

being randomized into a different set of monetary amounts. Except where otherwise mentioned, all of our analyses pool data across the monetary amounts.

While Figure 2 and other figures in this paper depict the master decision tree with A at the top of the screen and the E vs. F choice at the bottom, we randomized whether participants saw their decision screens this way, which we call "rightside up," or saw instead an "upside down" orientation of all decision screens, in which A was at the bottom of the screen and E vs. F was at the top. This randomization allows us to test and correct for any tendency to choose options toward the top of the screen. We do not find such a tendency (comparing untutored choices in each of the 41 decision screens across the randomization, the *p*-value is less than 0.05 for only one screen; Web Appendix Table C.9). We thus pool these data in all analyses.

II.D. Frames, Normative Axioms, and Elicitation of Untutored Preferences

When eliciting untutored preferences, we posed a total of 36 risky choices, each on a separate screen. These are derived from the master decision tree by asking, within each of seven frames, all choices between the five contingent plans that make sense given the frame. After describing the frames and the normative axioms implicitly defined by them, we explain our rationale for studying these frames.

To understand the frames, it is helpful to accompany their descriptions with screenshots. Frames 6 and 7 are shown in Figure 1, and frame 4 is shown in Figure 2. The rest are shown in Figure 3. The seven frames are:

1. Single Action in Isolation (2 screens: C vs. D, E vs. F): A choice at a single node, with the rest of the tree not shown.

2. Single Action with Backdrop (2 screens: C vs. D, E vs. F): A choice at a single node, with the rest of the tree grayed out. Participants were instructed: "**These grayed-out parts of the picture are things that could have happened, but you know for sure did not happen.**"

3. Two Contingent Actions with Backdrop (1 screen: C vs. D and E vs. F): A choice at two nodes, with the relevant choice contingent on a 50-50 realization and with the rest of the tree grayed out.

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4. Complete Contingent Action Plan (1 screen: master decision tree): First, a choice at the A vs. B node. Participants were instructed: "If you choose B, you also need to make two decisions that will lock in how you will invest at age 50." In version 1 of the experiment, participants also make a choice at the C vs. D and E vs. F nodes only if they choose B. In version 2 of the experiment, all participants make a choice at the C vs. D and E vs. F nodes; participants who choose A were instructed to imagine that that option was not available and to make a choice at the C vs. D and E vs. F nodes.

5. Pairwise Choices Between Complete Strategies (10 screens: all pairwise choices between the five contingent plans): Pairwise choice between two contingent plans, with the plans displayed in the master decision tree. Participants were instructed: "You need to make a **choice between two investment plans, Option 1 and Option 2.** Each has a set of choices locked in along the way (at age 35 and age 50), shown by circled letters…**Grayed out parts are used to show things that can't happen if you choose that investment plan.**"

6. Pairwise Choices Between Compound Lotteries (10 screens: all pairwise choices between the five contingent plans): Pairwise choice between two contingent plans, with the plans involving B displayed as compound lotteries.

7. Pairwise Choices Between Reduced Simple Lotteries (10 screens: all pairwise choices between the five contingent plans): Pairwise choice between two contingent plans, with the plans involving B displayed as reduced simple lotteries.

We call the first four *nodewise frames* because each question involves one or more actions at nodes of the master decision tree. We call the last three *pairwise frames* because each question involves a pairwise choice between contingent plans. We explained above in Section II.C how the nodewise frames are randomized to be rightside up or upside down. In all pairwise frames, in any given wave, *both* contingent plans are either shown in the orientation of the figures or in an upside-down configuration, whichever is consistent with how the participant was randomized for

the nodewise frames. On each screen of a pairwise frame, we randomize which contingent plan is shown on the left and which on the right.

The frames are ordered such that every contiguous pair of frames defines a normative axiom, according to which the "same" choice should be made in both frames. For example, axiom 1 says that the "same" choice should be made in frames 1 and 2; axiom 2, in frames 2 and 3; and so on. We call the resulting six normative axioms:

1. Irrelevance of Background Counterfactuals
2. Simple Actions = State-Contingent Actions
3. Irrelevance of Counterfactual Choices
4. Shift from Nodewise to Pairwise
5. Complete Strategies = Implied Lotteries
6. Reduction of Compound Lotteries

Using the machinery for dynamic choice under uncertainty (Kreps and Porteus 1978), Web Appendix F formalizes these axioms (doing so requires introducing a lot of notation to distinguish between frames) and relates them to previous work linking the Independence Axiom to axioms of dynamic choice (Karni and Schmeidler 1991; Volij 1994). In addition to these, we study the (standard) transitivity axiom.

7. Transitivity: Aside from indifference, if Option A is chosen over Option B, and Option B is chosen over Option C, then Option A is chosen over Option C.

We chose the frames such that the implied normative axioms 1-6 would satisfy two criteria: transparency and yielding expected utility theory. The expected utility theory criterion is that, together with completeness and continuity (which we assume but do not test) and the transitivity axiom, axioms 1-6 are necessary and sufficient for preferences to satisfy expected utility theory. The transparency criterion is that the argument for making the "same" choice across adjacent frames would be self-evident to experimental participants. In Web Appendix F, we prove the equivalence between the axioms and expected-utility theory. Aside from Reduction of Compound Lotteries, which is a standard axiom, the others are implicit in the setup of

expected utility theory or are components of the well-known Independence Axiom. We broke down the Independence Axiom into "baby step" components because the Independence Axiom taken as a whole would fail the transparency criterion, as anyone who has taught intermediate microeconomics can attest. Because the axioms satisfy transparency, it was possible for experimental participants to endorse the logic of expected utility theory without ever being required to understand a complex chain of reasoning. Transparency was part of our strategy for minimizing potential experimenter demand effects because it eliminated the need to explain the axioms to participants. We also chose the frames we did because we believe that axioms 1-6 are interesting in themselves as elements of normative economic reasoning.

When eliciting untutored preferences, we randomized participants into one of three groups in which they saw the frames with equal probability: (i) order 1, 2, …, 7; (ii) the reverse order 7, 6, …, 1; and (iii) a random order. With each frame, the ordering of questions was randomized.

II.E. Procedure for Reconsideration

After participants completed the elicitation of untutored preferences, the instructions stated: "Our research project depends on understanding your choices in a deep way. Now, we're going to ask you about some of the choices you've made so far."

Our algorithm for the reconsideration phase of the experiment had four stages, in this order:

1. Inconsistencies: Participants are given the opportunity to reconsider every pair of untutored choices from adjacent frames that is inconsistent with the corresponding axiom (*inconsistencies*), as well as a randomly selected ¼ of the pairs of untutored choices from adjacent frames that are consistent (*placebos*). The inconsistencies and placebos were presented in a random (therefore often interspersed) order, and which choice from each pair was shown on the top versus bottom of the screen was randomized. On average across both waves, participants in the wave 1+2 sample faced 9.9 inconsistencies and 10.1 placebos at this stage.

2. Intransitivities: For all intransitivities among the stage-1 choices in pairwise frames, participants are given the opportunity to rank the options. Our algorithm for identifying

intransitivities among the five strategies was as follows: (i) try to identify the highest- and lowest-ranked strategies; (ii) if we can identify both, then eliminate both and return to step (i); (iii) if we cannot identify both a highest- and lowest-ranked strategy, then we have an intransitivity. The number of strategies remaining determines whether we call it a 3-way, 4-way or 5-way intransitivity. (If this algorithm eliminates all strategies without identifying an intransitivity, then the stage-1 choices are transitive.) On average across both waves, participants in the wave 1+2 sample faced 1.7 intransitivities at this stage.

3. Inconsistencies again: Stage 1 is repeated, except that all the inconsistencies from the stage-2 choices are presented. On average across both waves, participants in the wave 1+2 sample faced 6.8 inconsistencies and 11.2 placebos at this stage.

4. Intransitivities again: Stage 2 is repeated, except that all the intransitivities among the stage-3 choices from pairwise frames are presented. On average across both waves, participants in the wave 1+2 sample faced 0.8 intransitivities at this stage.

To determine the order in which a participant saw inconsistencies and intransitivities, the computer program walked through the participant's choices in the order they were made. The first inconsistency or intransitivity encountered was presented to the participant first, and so on. Figure 4 panels A and B show screenshots of an inconsistency reconsideration and an intransitivity reconsideration, respectively. We now discuss the stages in more detail.

II.E.i. Stages 1 and 3: Inconsistency and Placebo Reconsiderations

Inconsistencies and placebos proceeded identically, with only one difference. For inconsistencies, the top of the screen reads: "In one question you chose [Option 1] over [Option 2], but in another question you chose [Option 2] over [Option 1]." For placebos, the top of the screen reads: "In these two questions, you chose [Option 1] over [Option 2]." In both cases, the screen showed both of the participants' choices and then asked, "Do you think the two situations are different enough that it makes sense to have different choices, or should they be the same?" There were two possible answers, which triggered different follow-up questions. The sequence of follow-up questions, which we now describe, are also depicted as a flowchart in Figure 5.

One possible answer was "It makes sense to have different choices." In that case, there was one follow-up question: "Why do you want to make different choices in these two situations?" In version 1 of the experiment, we elicited open-ended responses to this question (listed in Web Appendix A). In version 2, we instead offered the following multiple-choice responses:

- The two situations are different enough that I want different choices.
- Some of the options are equally good to me, so it doesn't matter which one I choose.
- I chose how I thought the experimenters wanted me to choose.
- I don't know which options I prefer.
- I don't know or am confused.
- Other: [free-response box]

We interpret the first of these options as suggesting that the participant rejects the axiom that implies that the choices should be the same. We interpret the second as suggesting indifference.

The other possible answer to the initial question, "It makes sense to have the same choice," triggered a longer set of follow-ups. First, we asked "Which better represents your preference: your choice of [Option 1] over [Option 2], or your choice of [2] over [1]?" To try to avoid communicating that we wanted or expected participants to make their choices consistent, participants could choose among all four logically possible responses: (i) "Option 1 over 2"; (ii) "Option 2 over 1"; (iii) "I changed my mind: I realized that it does make sense to have different choices in these two situations. I would like to keep my current choices"; and (iv) "I changed my mind: I realized that it does make sense to have different choices in these two situations. I would like to change *both* of my choices." If the participant chose (iii), then she was asked the follow-up question "Why do you want to make different choices in these two situations?" as above. If she chose (i), (ii), or (iv), then she was shown a screenshot of what it would look like to make that choice and was asked to confirm, "Is this what you wanted your choices to be changed to?" If the participant did not confirm, she was taken back to the earlier screen with response options (i)-(iv). If she did confirm, then she was asked the final follow-up question, "Why did you want to change your choices as you did?" In version 1 of the experiment, we elicited open-ended responses to this question (also listed in Web Appendix A). In version 2, we instead offered the following multiple-choice responses:

- I made a mistake when I first chose.

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- Answering all of these questions made me change what I want.

- Some of the options are equally good to me, so it doesn't matter which one I choose.

- I chose how I thought the experimenters wanted me to choose.

- I don't know which options I prefer.

- I don't know or am confused.

- Other: [free-response box]

Assuming participants changed their choices to be consistent, we interpret the first two of these options as suggesting that the participant endorses the axiom that implies that the choices should be the same. We interpret the third as suggesting indifference.

II.E.ii. Stages 2 and 4: Intransitivity Reconsiderations

The instructions for intransitivity reconsiderations read:

> Sometimes it is possible to rank options. Given your choices so far, we could not figure out how to rank these [3, 4, or 5] options. Would you like to rank these options? If so, please label the option you like best 1, the option you like second best 2, etc. If there is a tie between two options, you can rank them in any order, but please enter 1 only once, 2 only once, etc. If you do not want to rank these options, please *only* check the box below.
>
> [BOX] I do not want to rank these options!

The 3, 4, or 5 options were displayed below. Figure 4 panel B shows an example of a 4-way intransitivity reconsideration.

In version 2 of the experiment (but not version 1), if a participant opted not to rank the choices, we asked them: "Why couldn't you rank the options on the previous slide?" We offered four response options:

- I couldn't rank the options because they are all equally good to me.

- I couldn't rank the options because I don't know which option I prefer.

- I should be able to rank the options, but it's extremely hard.

- I couldn't rank the options for another reason: [free-response box]

We interpret the first response as suggesting indifference. The second and third responses do not distinguish between truly intransitive preferences, incomplete preferences, or insufficient effort to figure out the participant's truly complete, transitive preference order.[8]

III. Descriptive Results

III.A. Reconsideration Procedure

Reassuringly, participants virtually never changed their choices when facing the placebos: 98.1% of the time, wave 1+2 participants chose "It makes sense to have the same choice" (or chose "It makes sense to have different choices" but upon further reflection selected that they had changed their mind so ultimately remained consistent) (Web Appendix Figure C.5). This finding indicates that merely prompting participants to revise their choices does not lead them to do so. In contrast, when facing inconsistencies, wave 1+2 participants revised their choices toward consistency 46.0% of the time (Figure 5; we obtain this value by multiplying the proportion of participants who chose "It makes sense to have the same choice" by the proportion of participants who chose either "Option 1 over 2" or "Option 2 over 1") and 72.9% of the time when facing intransitivities (out of 591 intransitivities in total, Table 3 reports 160 unrevised).

Figure 6 panel A shows, for the wave 1+2 sample, for each stage of the experiment, a histogram of the number of inconsistencies in the current set of choices (we discuss the inconsistency rate by frame later in this section and by axiom in Section III.B). The x-axis in each histogram is the number of inconsistencies, from 0 to 20 (the maximum possible number is 19). The y-axis is the percentage of participants. In the first row of five histograms, the first histogram corresponds to the "stage-0" untutored choices in wave 1; the second, to the stage-1 choices (after the first round of inconsistency reconsiderations); and so on, up to the fifth, which corresponds to the stage-4 choices (after both rounds of inconsistency and intransitivity

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[8] As an additional attempt to avoid giving participants the impression that we disapprove of intransitivity, we asked a survey question about intransitivity in the abstract immediately before part 2 (the elicitation of untutored preferences): "Ian Trantivi is facing a weird problem. He is on a game show, and has just won! As a prize, he can choose one of three piles of stuff. He says that he prefers the first pile to the second, the second pile to the third, and the third pile to the first! Do you think you could ever imagine feeling this way?" In the wave 1+2 sample, 54.4% of participants in wave 1 and 55.3% in wave 2 answered "Yes, I can imagine feeling like Ian about some number of choices," rather than the other option "No, I cannot imagine feeling like Ian about some number of choices." The correlation between answering "Yes…" to this question with the number of intransitivities, when both are from stage 0 of wave 1, is 0.074.

reconsiderations). The second row of five histograms is analogous, except it shows the choices from wave 2.

Among the untutored choices in wave 1, the median number of inconsistencies was 6, and only 4.0% participants had zero inconsistencies. The numbers of inconsistencies declined in each stage of reconsideration. By the end of stage 4, the median number was 2, and 23.5% had zero. At the beginning of wave 2 several weeks later, there was partial "reset," but participants had fewer inconsistencies at the beginning of wave 2 than at the beginning of wave 1. This reduction from wave 1 to wave 2 is very unlikely to be due to participants remembering their earlier choices; it occurs even for the 4/5 of participants who faced gambles with different monetary payoffs across the two waves (Web Appendix Figure C.6). Thus, the reduction in inconsistencies from wave 1 to wave 2 suggests that participants had learned from the wave-1 procedure. By the end of wave 2, the median number of inconsistencies was 1, and 33.8% participants had zero inconsistencies.

If participants revised their inconsistent or intransitive choices in a random way, then their revised choices can create new inconsistencies, and we would not in general expect the total number of inconsistencies to fall on average. The decline in the number of inconsistencies over the course of the experiment therefore indicates that participants reconsidered their choices in a direction that led to a set of choices that were overall more consistent with the axioms.

Figure 6 panel B is analogous to panel A, except for intransitivities rather than inconsistencies. Each 3-way, 4-way, or 5-way intransitivity counts as one intransitivity, so the maximum possible number is three (one for each of the three pairwise frames). As with the inconsistencies, the number of intransitivities declined over wave 1, reset partially at the beginning of wave 2, and then declined over wave 2. The mean number of intransitivities was 1.1 at the beginning of wave 1 and 0.1 at the end. For wave 2, the analogous numbers are 0.8 and 0.2.

When faced with inconsistencies, when participants did *not* revise their choices, their survey responses indicated that it was usually because the two frames were considered "different situations" or because the participants were indifferent. Table 1 shows the percentage of responses to the question "Why do you want to make different choices in these two situations?" The rows of the table break down the results by axiom, and the bottom row shows the results aggregated across all axioms. In aggregate, participants selected "The two situations are different

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enough that I want different choices" 56.8% of the time. We interpret this response as consistent with rejecting the axiom that implies that choices should be the same. Participants selected the indifference response option, "Some of the options are equally good to me, so it doesn't matter which one I choose," 24.9% of the time. The other response options were selected $\leq 6.2\%$ of the time.

For inconsistencies, when participants revised their choices, their survey responses indicated that it was virtually always because they initially erred, they learned something from thinking through their choices, or they were indifferent. Table 2 is analogous to Table 1 but for the question "Why did you want to change your choices as you did?"[9] The response "I made a mistake when I first chose" was selected 45.7% of the time; "Answering all of these questions made me change what I want," 38.4%; and "Some of the options are equally good to me, so it doesn't matter which one I choose," 9.4%. We interpret the first two of these as consistent with endorsing the axiom that implies that choices should be the same. The other response options were selected $\leq 2.9\%$ of the time.[10]

When participants refused to rank intransitive choices, their survey responses indicated it was usually *not* because of indifference. As Table 3 shows, they selected "Options all equally good" only 15.0% of the time, whereas they selected "I don't know what I prefer" 45.6% of the time and "Too hard to rank" 13.8% of the time. Of the 5.6% who selected "Other," most complained about being tired or noted that the task was too hard.

While we would like our reconsideration procedure to generate a more accurate elicitation of participants' normative preferences, an alternative possibility is that participants are averse to inconsistencies and intransitivities and revise to eliminate them, without getting closer to their normative preferences. We can obtain some relevant evidence by examining how consistent choices at the end of wave 1 and at the end of wave 2 are with *each other*. The idea is that participants might be eliminating inconsistencies within each wave but not converging

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[9] The row for the axiom Irrelevance of Counterfactual Choices is omitted from the table because, due to a programming error, this follow-up question was not asked for this one axiom.

[10] While we have little confidence in participants' self-reports of experimenter demand effects, we note that these self-reports provide a bit of further evidence against experimenter demand effects driving participants' revisions. Specifically, recall that when we asked participants their reasons for revising or not revising their choices, we offered participants the option to select: "I chose how I thought the experimenters wanted me to choose." Although very rarely selected, it was selected more often when participants did not revise an inconsistency (3% of the time) than when they did (1%) (see Tables 1 and 2; the *p*-value for this comparison is <0.0001), the opposite of what might have been expected if participants were revising inconsistencies due to experimenter demand effects.

toward the same set of choices. However, if they are revising toward *the same* preferences in each wave, then their choices should be more consistent across waves at the end of the waves than at the beginning of the waves. Table 4 shows an analysis that aims to test this hypothesis. Each row corresponds to a frame, except for the last row, which aggregates over all the data. Columns (1)-(4) show the number of potential inconsistencies and three percentages of *consistent* choices: untutored choices from waves 1 and 2, final choices (after stage 4 of the reconsideration procedure) from waves 1 and 2, and the expectation under random behavior. In aggregate, the amount of consistency increased from 68.1% at the beginning of the waves to 72.2% at the end of the waves. (If we restrict the analysis to participants who faced the same monetary amounts in waves 1 and 2, these percentages are 72.5% and 77.7%, respectively; see Web Appendix Table C.4.) Column (5) reports that the *p*-value for the null hypothesis of equality between these two percentages is < 0.0005. Column (6) reports that the *p*-value for the null hypothesis of equality between the amount of consistency at the end of the waves and random behavior is also < 0.0005. The table shows that we can similarly reject random behavior for each of the individual frames. The evidence for increasing consistency going from the beginning to the end of the waves is concentrated among the pairwise frames, where we have greater statistical power (due to the larger number of potential inconsistencies). We conclude from this analysis that participants do appear to be moving toward the same set of preferences in the two waves.

One way that participants might revise their choices that would eliminate inconsistencies and intransitivities but *not* necessarily represent their normative preferences is if they followed a heuristic. To obtain some relevant evidence, we considered four heuristics that would be simple to follow in this experiment: choose the option that maximizes expected value (EV), choose the option that minimizes EV, choose the option shown on the top of the screen, and choose the option shown on the bottom of the screen. In our data, behaviors consistent with these heuristics are confounded: for participants randomized to the rightside-up orientation, the top option is always the safe option that minimizes EV, and vice-versa for participants randomized to the upside-down orientation. We break these correlations by restricting the sample to the 109 participants who were in both waves but were randomized to opposite rightside-up/upside-down orientations in the two waves, and we pool together their choices from the end of wave 1 and the end of wave 2. The top panel of Table 5 shows the percentage of participants whose choices are

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consistent with each heuristic and with none of the heuristics. The choices of 93.6% of the sample do not fit any of the four heuristics. The bottom panel of Table 5 examines a less stringent criterion: at least 60 of the 68 choices (34 per wave) are consistent with the heuristic. According to this criterion, 80.7% of the sample do not fit any of the heuristics. We interpret this evidence as casting doubt on the possibility that our results are driven by participants behaving according to the heuristics we examine.

When participants revise their choices, do they revise in the direction of greater risk tolerance or greater risk aversion? In Section IV, we examine this question with the help of structural assumptions about preferences, but here we aim to shed light on it with descriptive data and minimal assumptions. Since D and F are the risk-tolerant choices regardless of utility's functional form, one simple approach is to focus only on the choices C vs. D and E vs. F. For such choices, the top and bottom panels of Figure 7 show, for the wave 1+2 sample, the percentage of participants choosing D and F, respectively, in each frame over the course of both waves. The standard error on each data point is relatively large (roughly 3 percentage points; see Web Appendix Table C.10) both because we are cutting the data by frame and because we are only using a subset of participants' choices. Nonetheless, both panels of the figure hint at some overall increase in the frequency of the more risk-tolerant choices. For a more formal test, we pool all the data underlying Figure 7, and we run an OLS regression of choice of D or F on stage of the experiment, with fixed effects for frame and wave and with standard errors clustered by participant. The regression results confirm the visual impression from the figures, with the coefficient on stage estimated to be 0.37 percentage points (SE = 0.11) (Web Appendix Table C.11 column 1).

As another descriptive approach to assessing whether participants revise in the direction of greater risk tolerance or risk aversion, we directly examine participants' revisions. For each reconsideration in the wave 1+2 sample, and for each axiom $j = 1,2,...,6$ as well as overall, the top panel of Table 6 shows how often participants revised toward their frame-j or frame-$(j + 1)$ choice in cases where their current frame-j choice was riskier. The middle panel shows the revision frequencies in cases where participants' current frame-$(j + 1)$ choice was riskier. Although not relevant for our purposes, for completeness the bottom panel shows the cases where the current frame-j and frame-$(j + 1)$ choices are not risk-ranked (e.g., CF vs. DE) (the first two rows have no observations because this is not possible for the choices in frames 1 and

2). As an example of how to read the table, consider the first row of the top panel, which shows results for Axiom 1 (Irrelevance of Background Counterfactuals). In cases of inconsistencies with Axiom 1 where participants' choice in the frame 1 (Single Action in Isolation) was riskier than in frame 2 (Single Action with Backdrop), the first column shows that participants revised to make both choices consistent with their (riskier) frame-1 choice 33.3% of the time. The second column shows that they revised to make both choices consistent with their (less risky) frame-2 choice 20.5% of the time. The third column gives the *p*-value for the null hypothesis that these percentages are equal, which is 0.1236. (The fourth and fifth columns show how often participants did not revise either choice and swapped their choices, and the sixth column gives the number of observations.) To facilitate reading the table, in each row we have bolded whichever frame-*j* or frame-$(j + 1)$ number is larger. The main result from Table 6 can be seen from the "overall" rows of both panels: on average, when participants revise their choices, they do so toward the riskier choice. This tendency is also seen for most axioms (albeit sometimes with large *p*-values). This finding from examining revision behavior thus reinforces the conclusion from examining the C vs. D and E vs. F choices.

As a final question about the effects of the reconsideration procedure, we ask: is there a particular frame (or frames) toward which participants revise their choices? And in particular, do participants revise their choices in the direction of what they chose in a "simpler" frame? We conjecture that the cognitively simplest nodewise frame is Single Action in Isolation (frame 1), and the cognitively simplest pairwise frame is Pairwise Choices Between Reduced Simple Lotteries (frame 7). From Table 6 we find no evidence that participants revise toward their choices in these frames; on average, participants revise toward their choices in those frames if those were the riskier choices and away from them otherwise. There is only one frame where we see some evidence for participants revising toward their choice in that frame: Complete Contingent Action Plan (frame 4). Specifically, participants revised in the direction of their choice in frame 4 even when that was the less risky choice (see row 3 in the top panel and row 4 in the bottom panel). Although intriguing, we do not draw any confident conclusion about this frame because the *p*-values are large in both relevant rows.

III.B. Reconsidered Choices

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We now turn from analyzing the effects of the reconsideration procedure to examining the properties of the set of choices that result from the procedure. It is clear from Figure 6 panel B that the reconsidered choices have far fewer intransitivities than the untutored choices. For example, in the wave 1+2 sample shown in the figure, by the end of wave 2, the mean and median number of intransitivities are 0.2 and 0, respectively.

There are many more inconsistencies possible from the choices we posed to participants than intransitivities, but Figure 6 panel A shows that inconsistencies too are dramatically reduced in the reconsidered choices relative to the untutored choices. Moreover, most of the remaining inconsistencies are driven by relatively few participants: in the wave 1+2 sample shown in the figure, by the end of wave 2, 33.8% of participants have zero inconsistencies, 54.0% have ≤ 1, and 67.1% have ≤ 2. Only 14.9% of participants have > 5.

To facilitate comparison across axioms, we calculate for each axiom the inconsistency rate: the number of inconsistencies divided by the number of possible inconsistencies. For the wave 1+2 sample, Table 7 shows the inconsistency rate for the untutored choices and reconsidered choices in each wave, separately by axiom and in aggregate. With one exception—the Irrelevance of Counterfactual Choices axiom, discussed below—the inconsistency rates fall substantially from the beginning of wave 1 to the end of wave 2 and are ≤ 11.0% by the end of wave 2. For example, the Reduction of Compound Lotteries axiom has an inconsistency rate at the beginning of wave 1 of 26.1%, which is the highest. By the end of wave 2, its inconsistency rate is 8.9%. In aggregate, inconsistency rates fall by almost 2/3, from 22.4% to 8.4%. We interpret the low inconsistency rates for the reconsidered choices as suggesting that many of the axiom violations in the untutored choices are math errors or other mistakes rather than reflections of normative preferences.

As noted above, the main exception is the Irrelevance of Counterfactual Choices axiom. As Table 7 indicates, its inconsistency rate at the beginning of wave 1 was 13.9% and, while it fluctuated over the course of the experiment, it ended up at 14.2% at the end of wave 2. Violations of the axiom might therefore reflect normative preferences. It can be seen from Figure 4 panel A that violations of this axiom involve making a different choice in C vs. D or E vs. F when the participant had chosen B over A than when the participant ended up on this branch of the decision tree without having chosen B over A. Most plausibly, such behavior may implicate

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anticipated regret (e.g., Loomes and Sugden 1982) or reference-dependent risk preferences (as in Kőszegi and Rabin 2006) with the counterfactual payoff from A influencing the reference point.

To explore whether our data may be consistent with one such model, we report additional analyses in Web Appendix G. We formally analyze a model of reference-dependent risk preferences in which the reference point is influenced by foregoing a sure payoff. In the frame Two Contingent Actions with Backdrop (frame 3), where the participant makes the C vs. D and E vs. F choices without having faced the A vs. B choice, we assume that the safe payoff—the payoff from C or from D—is the reference point in each choice. In the frame Complete Contingent Action Plan (frame 4), we assume that when a participant chooses B over A, foregoing the payoff from A shifts the reference point for both the C vs. D and E vs. F choices. We show that this shift in reference point leads to greater risk tolerance *regardless* of what the new reference point is. Therefore, the model predicts greater risk tolerance—i.e., more willingness to choose D and F—in frame 4 than in frame 3. However, in our data we find no evidence of this pattern in the reconsidered choices. We conclude that the (in our view, plausible) form of reference-dependence we study does not predominantly explain violations of the axiom.

IV. Estimating CRRA Preferences

In our descriptive analyses in Section III.A, we found that intransitivities (as well as inconsistencies with other normative axioms) declined over the course of the experiment (Figure 6). When we restricted the data to C vs. D and E vs. F choices (Figure 7) and examined the frequency of revisions toward the choices made in particular frames (Table 6), we found some evidence that when participants revised their inconsistencies, they tended to do so in the direction of more risk tolerant choices. As a complementary approach to addressing these questions, in this section we estimate a structural model for risk aversion within each frame and examine how the risk aversion parameter and the variance in response error vary over the course of the experiment. The structural estimation has the advantages that it allows us to use more of the data when measuring risk aversion (not just C vs. D and E vs. F choices), control for covariates, model heterogeneity in risk preferences, incorporate response error into the analysis, and measure risk aversion in economically meaningful units. The disadvantages are that we assume preferences satisfy expected utility theory and impose a particular structure on those

preferences and on the response error. Because we assume expected utility theory, intransitivities in participants' choices are attributed entirely to response error. Inconsistencies do not directly affect the structural estimates because we estimate the model separately within each frame, but they matter indirectly because changes in risk aversion occur in response to the reconsideration procedure. As is common in studies of retirement investment, we assume constant relative risk aversion (CRRA) preferences. Following Barsky et al. (1997) and Kimball, Sahm, and Shapiro (2008), we estimate a random parameter model (as prescribed by Apesteguia and Ballester 2018).

Specifically, our model is as follows. We separately estimate relative risk aversion in each frame (but omit the frame subscript from all variables). As before, in each wave, we label untutored choices as "stage 0" choices, the choices after the first set of inconsistency reconsiderations as "stages 1" choices, etc. We allow individual i's relative risk aversion to evolve across waves $w \in \{1,2\}$ and stages $s \in \{0,1,2,3,4\}$ and denote it by γ_{iws}. As discussed more below, we work with log relative risk aversion: $x_{iws} \equiv \ln \gamma_{iws}$. In wave w and stage s, consider a question q eliciting a pairwise choice between Option 1 and Option 2. Let κ_q denote the level of log relative risk aversion at which an individual would be indifferent. We assume that the agent makes the safer choice if and only if

$$x_{iws} + \epsilon_{iwsq} \geq \kappa_q,$$

where $\epsilon_{iwsq} \sim N(0, e^{2z_{iws}})$ and is independently drawn for each question (we discuss below how the log standard deviation z_{iws} is determined). That is, experimental participants are assumed to respond as if their log relative risk aversion were their true log relative risk aversion x_{iws} plus a random error ϵ_{iwsq}.

Since there are a discrete number of contingent strategies in the master decision tree, any preference ordering over contingent strategies that can be rationalized by some relative risk aversion parameter value could be rationalized by a range of parameter values. Consequently, participant-specific parameters are not point-identified. To address this issue and to increase statistical power, we model a participant's log relative risk aversion as a random effect whose mean is a function of wave, stage, and demographics:

$$x_{iws} = \mu_0 + \mu_w \cdot 1\{w = 2\} + \mu_s \cdot (s - 1) + \mu_{ws} \cdot 1\{w = 2\} \cdot (s - 1) + \boldsymbol{\mu_X X}_{iws}$$

$$+\eta_{1,i} \cdot 1\{w = 1\} + \eta_{2,i} \cdot 1\{w = 2\} + \nu_i, \tag{1}$$

where $\boldsymbol{X}_{iws}$ is a vector of controls (which we omit in most specifications), and $\eta_{1,i} \sim N\left(0, \sigma_{\eta_1}^2\right)$, $\eta_{2,i} \sim N\left(0, \sigma_{\eta_2}^2\right)$, and $\nu_i \sim N(0, \sigma_\nu^2)$ are mutually independent. That is, the distribution of log relative risk aversion parameters governing stage-0 choices have means $\mu_0 + \boldsymbol{\mu_X X}_{iws}$ in wave 1 and $\mu_0 + \mu_w + \boldsymbol{\mu_X X}_{iws}$ in wave 2. These means shift over stages of reconsideration, with slope μ_s in wave 1 and slope $\mu_s + \mu_{ws}$ in wave 2. The population distribution of log relative risk aversion parameters has variance $\sigma_\nu^2 + \sigma_{\eta_1}^2$ in wave 1, variance $\sigma_\nu^2 + \sigma_{\eta_2}^2$ in wave 2, and covariance σ_ν^2 across waves.

We model the log standard deviation of the random error in choice, z_{iws}, similarly:

$$z_{iws} = \tau_0 + \tau_w \cdot 1(w = 2) + \tau_s \cdot (s - 1) + \tau_{ws} \cdot 1(w = 2) \cdot (s - 1) + \boldsymbol{\tau_Z Z}_{iws}, \tag{2}$$

where $\boldsymbol{Z}_{iws}$ is a vector of controls (which we omit in most specifications). That is, for the stage-0 choices, z_{iws} equals $\tau_0 + \boldsymbol{\tau_Z Z}_{iws}$ in wave 1 and $\tau_0 + \tau_w + \boldsymbol{\tau_Z Z}_{iws}$ in wave 2. The value of z_{iws} shifts over stages of reconsideration, with slope τ_s in wave 1 and slope $\tau_s + \tau_{ws}$ in wave 2.

Taken all together, the set of model parameters is $\{\mu_0, \mu_w, \mu_s, \mu_{ws}, \boldsymbol{\mu_X}, \sigma_{\eta_1}^2, \sigma_{\eta_2}^2, \sigma_\nu^2, \tau_0, \tau_w, \tau_s, \tau_{ws}, \boldsymbol{\tau_Z}\}$. We estimate the parameters with maximum likelihood, using a Stata implementation of adaptive quadrature. For more details, see Web Appendix E.

We focus our analysis on the three pairwise frames: Pairwise Choices Between Complete Strategies, Pairwise Choices Between Compound Lotteries, and Pairwise Choices Between Reduced Simple Lotteries. We have far greater statistical power in these frames, which elicit each participant's complete preference order over contingent plans, than in the nodewise frames, which only elicit partial preference orders. To keep the sample constant across waves, we use the wave 1+2 sample in our main analysis. We confirm robustness of our main findings in the wave 1 sample in Web Appendix Table D.8.

In our main analyses, we pool data across participants who faced different monetary levels in their choices. As a specification check, however, we estimate the model parameters

separately for the subsamples who faced monetary amounts that differed by a factor of two. CRRA utility and the other assumptions of our model imply that we should estimate the same mean log risk aversion for these two subsamples. Indeed, we cannot statistically distinguish the estimates of mean log risk aversion parameters $\{\mu_0, \mu_w, \mu_s, \mu_{ws}\}$ across these subsamples (although at $p < 0.05$, there is a difference in the estimate of the log standard deviation of the error parameter, τ_0, for one of the three frames; see Web Appendix Table E.8e).

Table 8 shows the results from estimating the model. The three panels A-C correspond to the three pairwise frames. The results are broadly similar across the three frames, so for concreteness, we walk through the parameter estimates only for Pairwise Choices Between Complete Strategies (panel A). Columns 1, 3, 4, and 5 depict the estimates from equation (1) above. In column 1, the estimate $\hat{\mu}_0 = -1.312$ (SE = 1.103) is not statistically distinguishable from zero. This finding is intriguing because $\mu_0 = 0$ would correspond to log utility in the untutored choices. However, the low value of relative risk aversion we find compared to estimates from hypothetical choices of older Americans (Kimball, Sahm, and Shapiro 2008) may reflect the younger age of our experimental participants. The other estimated parameters in column 1, $\hat{\mu}_w$, $\hat{\mu}_s$, and $\hat{\mu}_{ws}$, are all small and not statistically distinguishable from zero, indicating that the mean log relative risk aversion among participants does not change systematically across stages of the reconsideration procedure or across waves. Below we discuss the tension between this finding and the descriptive results pointing to greater risk tolerance in participants' revised choices.

The estimated variance parameters, $\hat{\sigma}_{\eta_1}^2$, $\hat{\sigma}_{\eta_2}^2$, and $\hat{\sigma}_v^2$, are in Columns 3-5. They all have large standard errors, which makes us reluctant to use them to draw inferences about the change in variance of log relative risk aversion from wave 1 to wave 2 or the correlation across waves.

Column 2 depicts the estimates from equation (2) above. Continuing to focus on Panel A, the initial (wave 1, stage 0) log error-response standard deviation is estimated to be $\hat{\tau}_0 = 1.300$ (SE = 0.455), similar in magnitude to the estimated mean log relative risk aversion. The estimate $\hat{\tau}_s = -0.0953$ (SE = 0.0151) is negative, indicating that the log error-response standard deviation decreases over the stages of reconsideration. The estimate $\hat{\tau}_w = -0.735$ (SE = 0.550) is also negative, which may suggest that the log error-response standard deviation is smaller at the beginning of wave 2 than wave 1, but the estimate is not statistically distinguishable from zero. The estimate $\hat{\tau}_{ws} = 0.0589$ (SE = 0.0208) is positive, indicating that the rate of decrease

over the stages of reconsideration is smaller in wave 2 than in wave 1.[11] On the whole, these estimates from our structural model mirror our reduced-form analysis of intransitivities: declining from the beginning to the end of wave 1, then partial reset at the beginning of wave 2, and then further declines from the beginning to the end of wave 2. This is because, as noted above, intransitivities provide much of the information that identifies response-error variances.

What explains the tension between the finding from our structural model that mean log risk aversion does not change with reconsideration and the findings from our descriptive analyses that risk tolerance increases? The structural results are consistent with the descriptive results given the maintained assumptions of the model because the parameter estimates imply the following behavior. Our structural estimate of mean log risk aversion near zero corresponds to a lower value of the CRRA parameter than all six of the CRRA "cutoff" parameter values we used to set the monetary levels in the gambles (see Section II.C). Therefore, absent response error, most participants would make risk tolerant choices in all of the gambles (regardless of which monetary levels the participants were assigned to). Response error would thus be responsible for the risk-averse choices we observe in earlier stages of the experiment, but as the amount of response error shrinks over the course of the experiment, participants revise their erroneous choices to better align with their (risk tolerant) preferences. While we believe our apparently conflicting observations can be reconciled in this way, we caution that the conclusion from our structural estimation that mean relative risk aversion does not change relies on our structural model being correctly specified.

In Web Appendix E, we report a number of robustness checks and additional analyses, which we briefly summarize here. As a robustness analysis, we show that our results are robust to dropping the quintile of the sample who completed the experiment the fastest, who we suspect may have been paying less attention or deliberating less. Indeed, in this reduced sample, the standard errors are smaller and our results generally strengthen. We also test and confirm that our estimated parameters do not systematically vary across the subsamples randomized to different groups (e.g., the decision trees depicted upside down); while a few such comparisons reach $p <$

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[11] While this finding could be evidence of convergence of the log error-response standard deviation toward a positive asymptote, we caution that other explanations are possible. For example, in wave 1, we asked more questions in between the elicitations of untutored and reconsidered choices. The greater time gap or additional questions in wave 1 may have caused participants to have a fresher perspective during the reconsideration procedure.

0.05, the estimates are not consistent across the three frames (Web Appendix Tables E.8e-g). In addition, to make our structural estimation sample the same as that used in our descriptive analysis from Section III.A, we restrict to the subsamples involving C vs. D and E vs. F choices; despite larger standard errors, the results are similar to those from our main analysis (Web Appendix Table E.8h). Finally, although not the focus of our paper, we use our data and model to investigate how log relative risk aversion varies by sex and psychological characteristics such as performance on cognitive tests, while also allowing these variables to be correlated with the log standard deviation of the response error. Among the most interesting results are that higher cognitive-performance participants are estimated to have lower risk aversion and less error (consistent with the literature reviewed in Dohmen, Falk, Huffman, and Sunde 2018), and more extraverted participants are estimated to have greater risk aversion (the opposite direction to that found by Becker, Deckers, Dohmen, Falk, and Kosse 2012).

V. Related Literature

Classic early work on subjective expected utility invoked introspection by decision theorists and their readers about whether they would revise choices that conflicted with axioms of expected utility theory (e.g., Savage 1954; Raiffa 1961). MacCrimmon (1968) pioneered a small literature using laboratory experiments to collect evidence on whether people endorse the axioms (e.g., Moskowitz 1974; Slovic and Tversky 1974; MacCrimmon and Larsson 1979). Recently, motivated by the goal of distinguishing preferences from mistakes (which is crucial for behavioral welfare economics), a few papers have returned to the topic of whether people endorse the axioms (e.g., Gaudeul Ⓡ Crosetto 2019; Breig and Feldman 2020; Nielsen and Rehbeck 2020). In this section, we review the literature and place our paper in context.

The fundamental problem facing all work that aims to test if people endorse or reject axioms (including ours) is distinguishing between well-considered rejection of an axiom and failure to understand the axiom or apply it in practice. Addressing this problem introduces a tradeoff: a heavier-handed effort to explain the axiom to participants generates a stronger demand effect. Experiments in the literature lie on a continuum of heavy-handedness but can be roughly categorized into three approaches.

The first approach is the most light-touch: participants are simply asked if they want to revise earlier choices, without any reference to axioms or inconsistencies in choice. Some such

research has allowed participants to revise their responses to multiple price lists, in order to eliminate non-monotonic responses (e.g., Yu, Zhang, and Zuo forthcoming). In an experiment where participants make initial choices but can update them in continuous time over 20 seconds, Gaudeul Ⓡ Crosetto (2019) find that initial choices, but not final choices, display the attraction effect (in which the addition of a dominated option to a choice set increases choice of the option that dominates it). More closely related to our paper, Breig and Feldman (2020) face participants with a set of 25 risky choices two consecutive times and then offer them the opportunity to revise a subset of those choices. Breig and Feldman find that participants revise toward consistency with rational preferences (as measured by Afriat's Index) and stationarity (i.e., the same choices both times). A small related literature presents the same choice problems to respondents over several rounds, and generally finds that choices conform more to expected utility theory in later rounds (Hey 2001; van de Kuilen and Wakker 2006; van de Kuilen 2009; Nicholls, Romm, and Zimper 2015; Birnbaum and Schmidt 2015).[12] Since this lightest-touch approach makes no attempt to convey to participants that their initial choices violated normative axioms, it likely understates their well-considered endorsement of the axioms.

The second approach is the most heavy-handed, presenting normative axioms explicitly and examining whether participants revise choices to align with them. In the pioneering paper, MacCrimmon (1968) discussed five postulates of decision theory with business executives for roughly 30 minutes after the executives had made initial choices and had read arguments both for and against the postulates. MacCrimmon then offered the executives the opportunity to revise their choices. Most choices were consistent with the postulates either initially or after the discussion. In a classic paper on transitivity, Tversky (1969) found that undergraduates often made intransitive choices but endorsed transitivity when their intransitivity was pointed out to them.

Subsequent work using the second approach has focused on the Independence Axiom (or Sure-Thing Principle) and well-known patterns of choices that violate it, such as the Allais (or Ellsberg) paradox. Many of these papers expressed the concern that MacCrimmon's discussion with participants may have biased participants toward endorsing the postulates. None of the experiments included such a discussion, and perhaps for this reason, the findings have been

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[12] Following Agranov and Ortoleva (2017), a related line of work poses the same risky choice problem multiple times to study whether participants are intentionally randomizing their responses to the problem.

much more equivocal than MacCrimmon's. With students making real-stakes decisions over course grades in Allais-paradox problems, Moskowitz (1974) found that participants changed their choices in the direction of expected utility theory after reading one argument for and one against the Independence Axiom, but the change was small.[13] Slovic and Tversky (1974) reported two experiments. In the first, participants made a decision in one Allais-paradox and one Ellsberg-paradox problem, then read an argument for making the opposite decision to their own in the Allais-paradox problem, and then made both decisions again. Most participants violated expected utility theory in both problems, and few changed their choices. In the second experiment, participants were presented arguments in favor of each of the two opposing choices in both problems before making their decisions and rating the arguments. The results of this experiment were puzzling: participants rated the anti-Independence-Axiom argument as more compelling in both problems, even though in the Allais-paradox problem the majority of participants behaved in accordance with expected utility theory! In an extensive set of experiments, MacCrimmon and Larsson (1979) studied 20 rules that reflect either normative principles or reasons commonly given for non-normative choices (e.g., that spell out the reasoning for Allais-paradox choices). The paper reports a rich set of results in many decision problems, but the overall pattern of findings is similar to Slovic and Tversky's: experimental participants typically rated non-normative rules higher than normative rules, yet their choices often contradicted their rule rankings. In another experiment leaning against MacCrimmon's conclusion, Eli (2017) trained, incentivized, and tested experimental participants for their understanding of (i) the Independence Axiom, (ii) a decision rule based on Allais's (1979) argument in favor of choices consistent with the Allais paradox (and hence inconsistent with the Independence Axiom), and (iii) an anti-Allais-paradox decision rule (also inconsistent with the Independence Axiom). Among participants understanding all three rules, the largest group of participants made choices consistent with the Allais paradox, not expected utility.

Most recently, in an experiment involving incentivized choices over small-stakes lotteries, Nielsen and Rehbeck (2020) developed a lighter-touch version of the second approach that avoids presenting arguments: they directly elicited participants' preferences over axioms by

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presenting the axioms as algorithms, or "decision rules," that implement choices on behalf of participants as a function of earlier choices. Later in the experiment, they measured participants' willingness-to-pay to revise choices that conflict with the decision rules that the participants had selected. They studied six axioms, including transitivity and the Independence Axiom. Participants selected decision rules that implement axioms roughly 85% of the time, compared with roughly 10% for "control" decision rules that implement the opposite of an axiom. On average across the axioms, when confronted with an inconsistency between the choice made by a decision rule a participant had selected and a choice made directly by the participant, participants revised their choice (and kept the decision rule selected) 47% of the time, unselected the decision rule 13% of the time, kept both choices inconsistent 37% of the time, and changed both 3% of the time. Nielsen and Rehbeck's evidence, like ours, suggests that participants largely find the normative axioms compelling. The Independence Axiom, however, is among the axioms that receives relatively less support; for example, participants who had selected the Independence Axiom as a decision rule, when faced with an inconsistency with a choice they had made, revised their choice (and kept the decision rule selected) only 34% of the time.

Because it explicitly presents axioms to participants, the second approach is heavier-handed than other approaches in three ways. First, the logic and simplicity of an axiom can be seductive, obscuring reasons why a participant might want to violate the axiom when faced with particular choices (e.g., anticipated regret for the Independence Axiom). Second, participants (especially students) may be predisposed to think an axiom ought to be appealing merely because it is a general rule. Third, it is difficult to design placebo axioms or arguments that have demand effects equal to those of the normative axioms or arguments.

Our paper uses the third and least explored approach, which aims to be as light-touch as possible (avoiding any explicit statement of an axiom) while still making clear to participants that their original choices may violate a normative axiom: examining how experimental participants make choices when two framings of the "same" decision problem are presented together. Prior to our paper, McNeil, Pauker, and Tversky (1988) and Druckman (2001) compared experimental participants' choices in a risky lottery framed in one of three ways: in

terms of "lives saved," "lives lost," and both together. Both papers found that behavior is intermediate between the two frames when both frames are presented together.[14]

While we find the third approach to be particularly appealing (and therefore pursue it in this paper), we believe that the three approaches provide complementary evidence about reconsidered choices because they engage different deliberations. For example, the second approach gets participants to think about whether they find an axiom's logic compelling regardless of the specific choices involved. In contrast, the third approach gets participants to think about whether a difference across frames warrants a difference in choices. Moreover, while lighter-touch approaches may underestimate participants' endorsement of normative axioms and heavier-handed approaches may overestimate it, taken together they should provide useful bounds.

Our paper differs from prior work in three main ways. First, we develop the third approach far beyond McNeil, Pauker, and Tversky (1988) and Druckman (2001), applying it systematically and iteratively over many rounds to the normative axioms underlying expected utility theory. Moreover, we have participants make decisions in each frame before facing both frames together, which may prompt more cognitive engagement and deliberation. To the extent that participants deliberate more deeply, we expect that the reconsidered choices are more informative about preferences.

Second, while prior work studied the Independence Axiom as a whole, we instead break it down into components that are easy to understand (even without explicitly stating the component axioms). This is important because, as Slovic and Tversky (1974) emphasized, it is hard to be confident that participants understand the Independence Axiom, and if they do not, the evidence on whether they endorse or reject it is difficult to interpret. Indeed, participants' failures to understand the axiom may be responsible for the mixed and somewhat contradictory evidence reviewed above. Our results much more clearly point to participants' endorsement of most

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[14] In the context of time preferences, Frederick and Read (revise and resubmit) use a similar approach (although not two framings of the *same* decision problem) to study the "magnitude effect": people discount smaller amounts of money more heavily than larger amounts of money. Making the common but questionable assumption that discounting over money corresponds to discounting over consumption (Frederick, Loewenstein, and O'Donoghue 2002), Frederick and Read argue that the magnitude effect violates the normative principle that discount rates should be independent of magnitude. They assess experimental participants' discounting over receipt of $10 or $1,000 and replicate the typical finding of greater discounting for $10. They ask some participants *jointly* about both amounts and find no diminution of the magnitude effect for these participants. They conclude that participants either reject the normative principle that discount rates should be independent of magnitude or that participants fail to appreciate this principle.

components of the Independence Axiom, while at the same time pinpointing the possible exception of a particular component related to anticipated regret or counterfactual reference points.

Finally, our experiment is grounded in a particular applied problem: how to measure risk aversion in retirement saving portfolio-allocation decisions for the purpose of giving advice or nudging behavior appropriately. As we discuss briefly in Section VI, we view our experiment as a proof of concept for a procedure that might, after further development and simplification, be adopted for practical use.

VI. Conclusions

In this paper, we elicited a sequence of hypothetical investment choices from experimental participants, and then we confronted participants with cases where their choices were intransitive or inconsistent with other normative axioms of expected utility theory. We asked if they would like to reconsider their choices, and if so, how. In our data, this reconsideration procedure virtually eliminates intransitivities and substantially reduces the frequency of inconsistencies with other normative axioms. The remaining inconsistencies are concentrated among relatively few participants. The exception of one axiom for which the frequency of inconsistencies does not decline suggests that anticipated regret or counterfactual reference points may cause normative preferences to deviate from expected utility theory, although for a minority of our experimental participants (given the choices we study), and in a way not consistent with a simple model of reference-dependent preferences (laid out in Web Appendix G).

Our results suggest, however, that other inconsistencies with expected utility are mainly mistakes, rather than normative preferences. For example, violations of the Reduction of Compound Lotteries axiom, which have received much attention from decision theorists and experimentalists (see, e.g., Halevy 2007, Shechter 2020), appear to be largely mistakes.

Three notes of caution are in order. First, while we see substantial reductions in inconsistencies over each of eight rounds of reconsideration (across two waves), we do not know what would happen after additional rounds of reconsideration. Our finding that eight rounds is insufficient for reconsidered choices to converge is itself of interest, but further work is needed to determine whether with additional rounds, inconsistency rates would stabilize or decline

further. Moreover, although in our structural estimation we find no evidence of a change in risk aversion resulting from our reconsideration procedure, this could be due to the high initial level of risk tolerance in our student sample. We do not know whether reconsideration would lead to a systematic change in risk aversion in older populations.

Second, while we took many steps to minimize experimenter demand effects, in retrospect we can see several ways we might have gone even further. For example, the instructions for reconsidering inconsistencies stated: "In one question you chose [Option 1] over [Option 2], but in another question you chose [Option 2] over [Option 1]." The word "but" subtly suggests that the participant erred. For future experiments, we would recommend using the word "and" instead. As another example, we labeled choices by their paths in the master decision tree (e.g., C and D). We did so to help make the axioms transparent to participants, but participants might have inferred that across two frames, they should choose the options that share the same label. For future experiments, we recommend exploring the alternative of labeling options differently in different frames, or even using the same label to refer to options that are different (according to a normative axiom) as a placebo treatment. Another placebo treatment would be to ask participants if they want to change a reconsidered choice back to an earlier, untutored choice.

Third, our procedure assumes that reconsidered choices are closer to normative preferences, but we have not validated that assumption. In principle, it could be tested whether after an experiment like ours, participants make real-world choices more in line with their reconsidered choices. If so, it would suggest that participants learned from the experiment and recognized that their reconsidered choices are closer to what they really prefer. Since we do not have such real-world data, the best we can do is test whether the change from untutored to reconsidered choices in wave 1 is reflected in untutored and reconsidered choices in wave 2. In Section III.A, we report two relevant findings, both supportive. First, the untutored choices in wave 2 have fewer inconsistencies than the untutored choices in wave 1, suggesting that participants had learned from the wave-1 procedure. Second, comparing wave 1 to wave 2, reconsidered choices are more consistent with each other than untutored choices are, suggesting that participants' choices are converging toward the same preferences in the two waves.

While our experiment was motivated by the applied problem of helping people make better retirement investment decisions, it is a proof of concept: our experimental procedure is no doubt too long and complicated to be used directly for financial advice. A useful next step would

be to develop a simplified version with fewer questions that could be used as an input into financial advice or as an immediate precursor to having individuals choose their retirement plan asset allocation. Our results could help the simplification process (with the caveat that our findings for undergraduates may not generalize to the relevant population). For example, our results suggest that transitivity could be imposed on participants' choices, since virtually all of our participants were fully transitive in their reconsidered choices. It would be particular helpful for practical applications if one of the frames elicited untutored choices that well approximated the reconsidered choices (a "revelatory frame" in the terminology of Goldin 2015). Looking at Figure 6, the frame Pairwise Choices Between Compound Lotteries is the only candidate for having this property in both the C vs. D and E vs. F choices. However, given the large standard errors and incomplete convergence of choices across frames by the end of the experiment, we do not draw a confident conclusion from this observation but instead view it as suggesting a hypothesis to be tested in future work.

Finally, while we developed the reconsideration procedure in the context of retirement investment choices, a similar procedure might be useful for helping to identify normative preferences in other types of choices. Within the realm of risk preferences, it would be interesting to apply the procedure to choices where loss aversion and probability weighting are known to influence untutored choices. It would also be of interest to apply the procedure to other preference domains.

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Figure 1: Examples of two frames

(A) Pairwise Choices Between Compound Lotteries (frame 6)
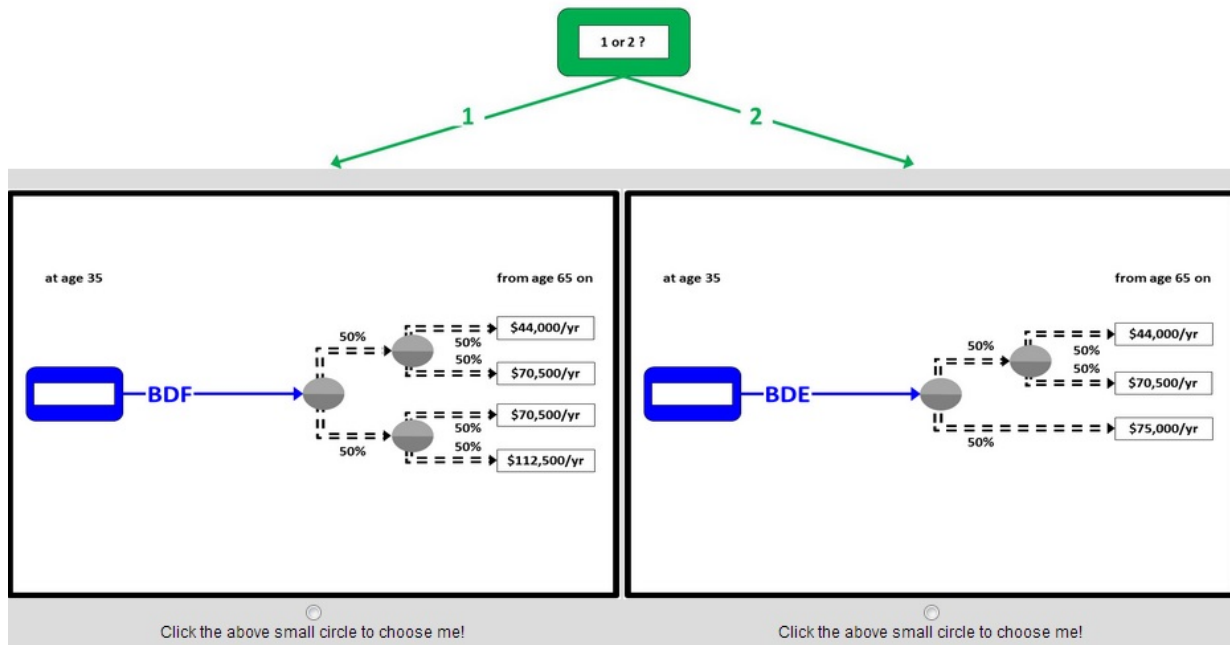
(B) Pairwise Choices Between Reduced Simple Lotteries (frame 7)
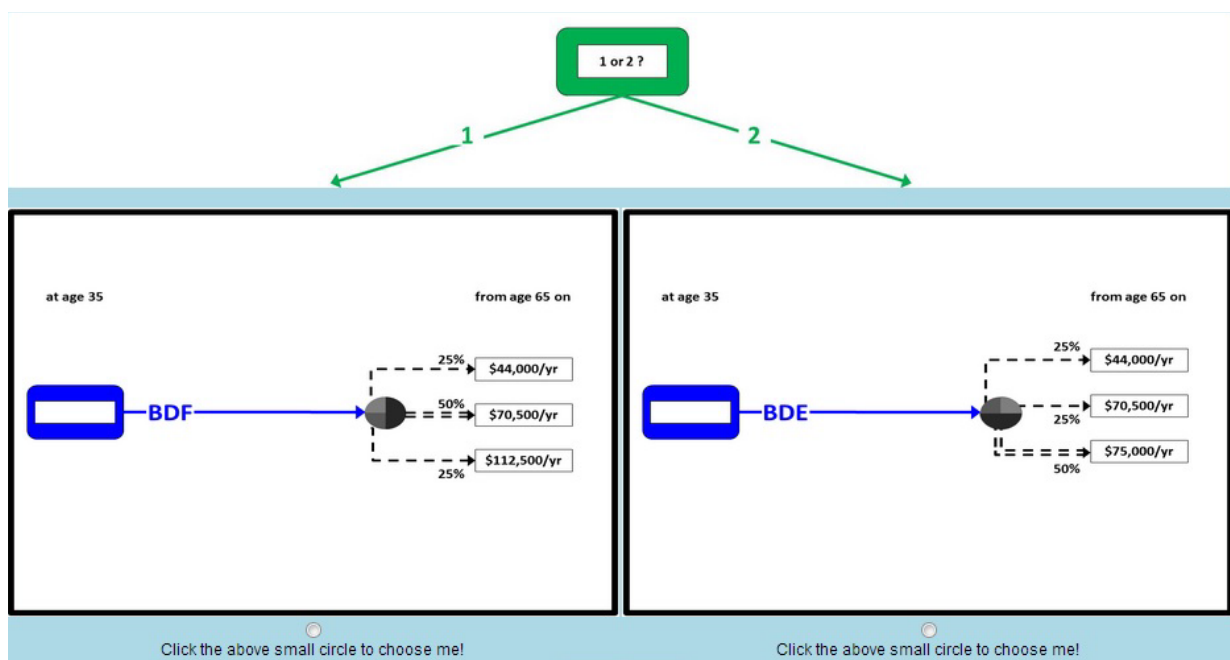
Figure 2: Master decision tree, which is also the frame Complete Contingent Action Plan (frame 4)

at age 35   at age 50   from age 65 on

A or B ?

A — Conservative → $100,000/yr

B

50%

C or D ? — C Conservative → $72,000/yr

D → 50% → $52,000/yr

50% → $108,000/yr

50%

E or F ? — E Conservative → $150,000/yr

F → 50% → $108,000/yr

50% → $225,000/yr
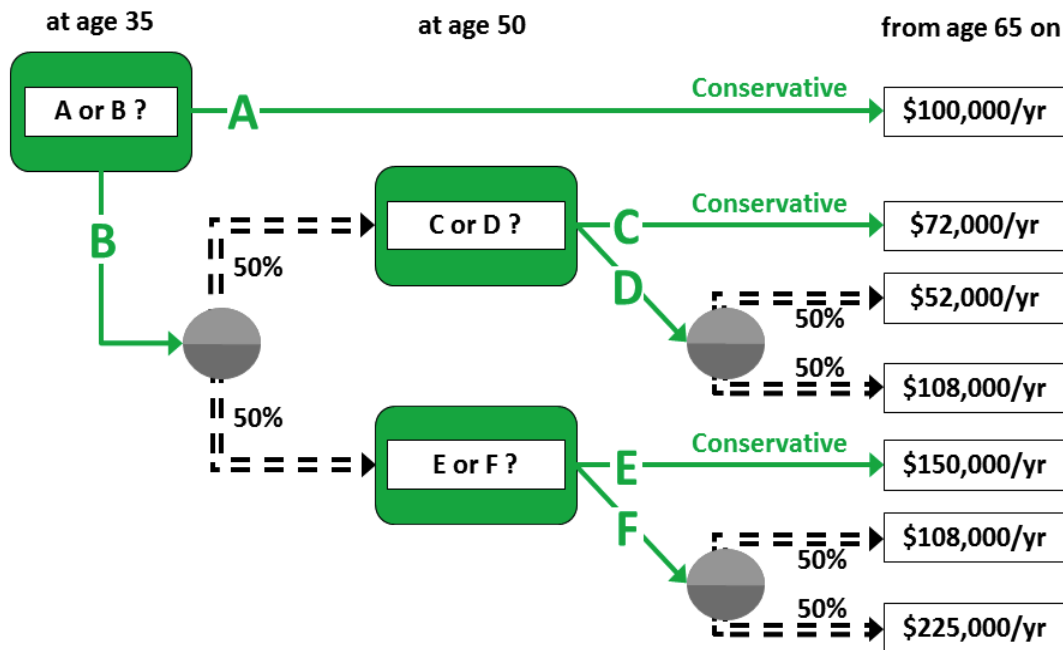
Figure 3: Examples of the remaining frames

(A) Single Action in Isolation (frame 1)
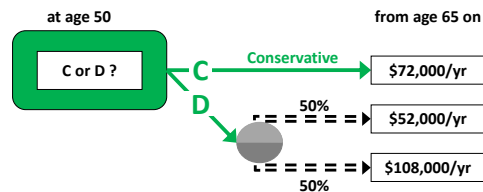
(B) Single Action with Backdrop (frame 2)
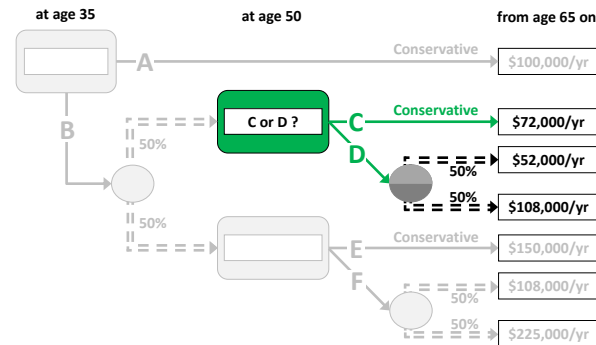
(C) Two Contingent Actions with Backdrop (frame 3)
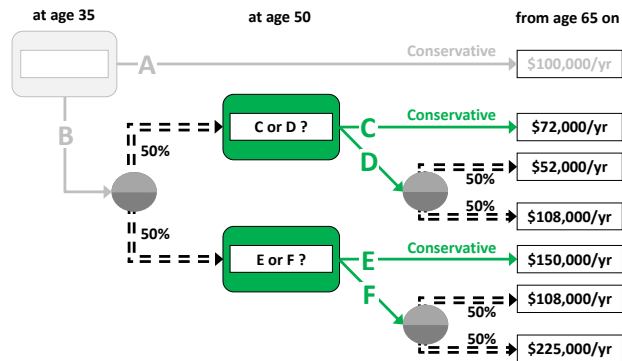
(D) Pairwise Choices Between Complete Strategies (frame 5)

Figure 4: Screenshots of inconsistency and intransitivity reconsiderations

(A) Inconsistency reconsideration

(B) Intransitivity reconsideration

Figure 5: Flow chart for the inconsistency reconsideration procedure

Note: The numbers in parentheses are frequencies of each choice across all instances of inconsistencies (not including placebos) in the Wave 1+2 sample. Percentages are rounded to the nearest 1% and therefore may not add up to 100%.

Figure 6: Histograms of number of inconsistencies and intransitivities

(A) Inconsistencies

(B) Intransitivities

Note: Wave 1+2 sample.

Figure 7: Percentage of participants who make the risky choice in simple lotteries

(A) C versus D
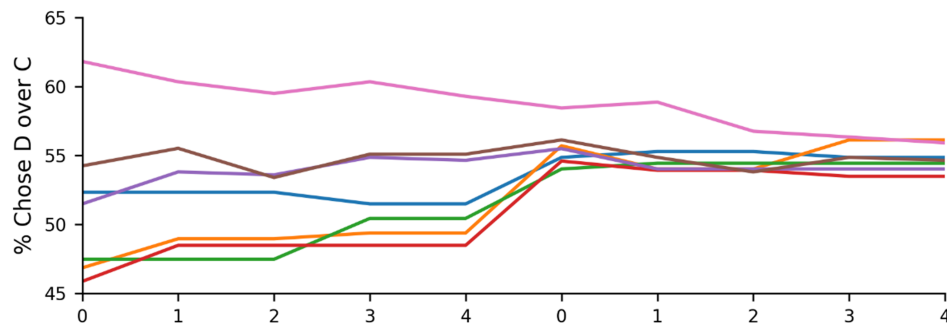
(B) E versus F
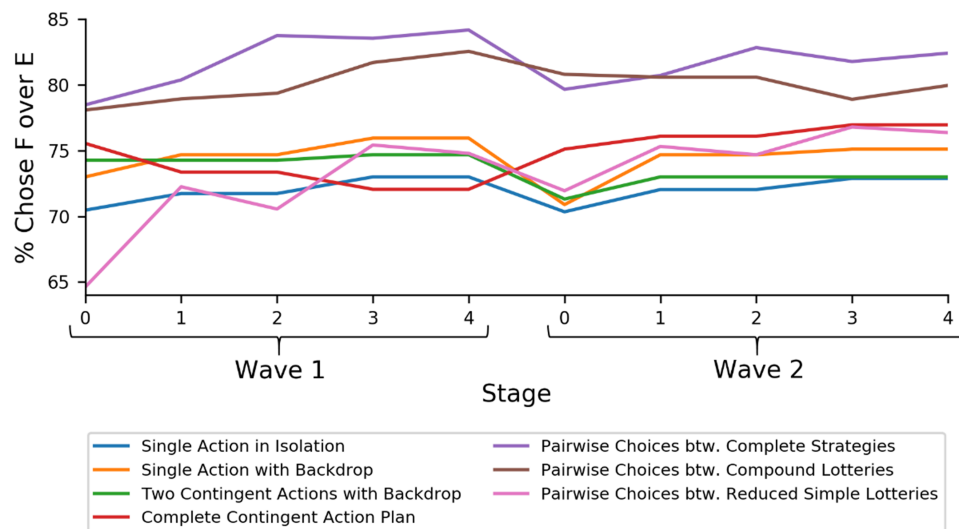
Note: Wave 1+2 sample. For each of the three pairwise frames, the top panel reports the average from the two questions eliciting BCE vs. BDE and BCF vs. BDF, and bottom panel reports the average from the two questions eliciting BCE vs. BCF and BDE vs. BDF. Standard errors around each plotted point are roughly 2-3 percentage points (not shown to avoid cluttering the figure but reported in Web Appendix Table C.11).

Table 1: Responses after not revising an inconsistency

Axiom	Different Situation	Indiff	Expt'er Demand	IDK	Confused	Other	#Obs
Irrelevance of Background Counterfactuals	56.6%	22.4%	0.0%	9.2%	9.2%	2.6%	76
Simple Actions = State-Contingent Actions	74.8	15.9	1.9	1.9	4.7	0.9	107
Irrelevance of Counterfactual Choices	55.9	25.5	2.0	8.8	3.0	4.9	226
Fusion + Shift from Nodewise to Pairwise	63.3	20.4	1.8	7.1	3.5	4.0	226
Complete Strategies = Implied Lotteries	54.6	25.1	3.4	7.7	2.9	6.4	626
Reduction of Compound Lotteries	54.4	27.5	2.7	4.8	4.0	6.6	805
Overall	56.8	24.9	2.6	6.2	3.8	5.7	1942

Note: Wave 1+2 sample. Percentages are averages across all stages in both waves. The full text of the responses to the question "Why do you want to make different choices in these two situations?" after not revising an inconsistency are: "The two situations are different enough that I want different choices", "Some of the options are equally good to me, so it doesn't matter which one I choose", "I chose how I thought the experimenters wanted me to choose", "I don't know which options I prefer", "I don't know or am confused", or "Other". Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table 2: Responses after revising an inconsistency

Axiom	Made Mistake	Learned	Indiff	Expt'er Demand	IDK	Confused	Other	#Obs
Irrelevance of Background Counterfactuals	46.9%	38.3%	8.6%	1.2%	1.2%	1.2%	2.5%	81
Simple Actions = State-Contingent Actions	34.7	42.9	12.2	0.0	4.1	2.0	4.1	49
Fusion + Shift from Nodewise to Pairwise	51.2	31.7	8.5	1.2	3.7	3.7	0.0	82
Complete Strategies = Implied Lotteries	46.4	37.1	9.1	0.5	4.2	0.5	2.1	614
Reduction of Compound Lotteries	45.1	39.7	9.7	0.6	2.0	1.1	1.8	814
Overall	45.7	38.4	9.4	0.6	2.9	1.0	2.0	1640

Note: Wave 1+2 sample. Percentages are averages across all stages in both waves. The full text of the responses to the question "Why did you want to change your choices as you did?" after not revising an inconsistency are:
"I made a mistake when I first chose", "Answering all of these questions made me change what I want", "Some of the options are equally good to me, so it doesn't matter which one I choose", "I chose how I thought the experimenters wanted me to choose", "I don't know which options I prefer", "I don't know or am confused", and "Other".
Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table 3: Responses after not revising an intransitivity

Frame	Indiff	IDK	Real Intransitivity	Too Hard	Other	#Obs
Pairwise Choices between Complete Strategies	14.0%	37.2%	25.6%	9.3%	14.0%	43
Pairwise Choices Between Compound Lotteries	19.0	51.7	15.5	12.1	1.7	58
Pairwise Choices Between Reduced Simple Lotteries	11.9	45.8	20.3	18.6	3.4	59
Total	15.0	45.6	20.0	13.8	5.6	160

Note: Wave 1+2 sample. Percentages are averages across all stages in both waves. The full text of the responses to the question "Why couldn't you rank these options?" after not revising an intransitivity are: "I couldn't rank the options because they are all equally good to me", "I couldn't rank the options because I don't know which option I prefer", "I feel like Ian Trantivi on the game show. Remember Ian's story from earlier in the survey: he won a prize, and could choose between three piles of stuff, but he prefers the first pile to the second, the second pile to the third, and the third pile to the first", "I should be able to rank the options, but it's extremely hard", and "I couldn't rank the options for another reason". Among the three pairwise frames, when facing an intransitivity, the percentage of the time that participants did not revise was 21.9%, 31.5%, and 28.0%, respectively. Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table 4: Average consistency rates by frame across stages and waves

Frame	(1) # Pot. Incons.	(2) Wave 1 vs. 2 Consistency Rate		(3) Random Choice Consistency Rate	(4) p-value: Stage-0 Consistency Rate = Stage-4 Consistency Rate	(5) p-value: Stage-0 Consistency Rate = Random Consistency Rate	#Obs
		Stage 0	Stage 4				
Single Action in Isolation	2	67.4%	69.1%	50.0%	0.2286	<0.0005	236
Single Action with Backdrop	2	67.1	71.7	50.0	0.0050	<0.0005	237
Two Contingent Actions with Backdrop	2	68.6	67.4	50.0	0.3973	<0.0005	236
Complete Contingent Action Plan	1	43.6	44.1	20.0	0.8623	<0.0005	227
Pairwise Choices Between Complete Strategies	10	69.3	73.3	50.0	<0.0005	<0.0005	236
Pairwise Choices Between Compound Lotteries	10	70.4	74.5	50.0	<0.0005	<0.0005	234
Pairwise Choices Between Reduced Lotteries	10	68.0	72.8	50.0	<0.0005	<0.0005	234
Overall	37	68.1	72.2	49.2	<0.0005	<0.0005	221

Note: Wave 1+2 sample, restricted to participants who are not missing any data from either wave for that frame. Consistency rate = (total number of consistencies)/(number of potential inconsistencies). *P*-values are from two-sided tests for differences in proportions. Percentages are rounded to the nearest 0.1%.

Table 5: Percentage of participants whose reconsidered choices can be rationalized by a simple heuristic

Heuristic (choose for all 68 questions)	Frequency
Maximize expected value	6.4%
Minimize expected value	0.0%
Choose top option	1.8%
Choose bottom option	4.6%
None of the above	93.6%
Heuristic (choose for at least 60 of 68 questions)	**Frequency**
Maximize expected value	19.3%
Minimize expected value	0.0%
Choose top option	4.6%
Choose bottom option	14.7%
None of the above	80.7%

Note: Wave 1+2 sample, restricted to the 109 participants randomized to the rightside-up orientation (i.e., with option A at the top and E at the bottom, as in the master decision tree) in one wave and the upside-down orientation (i.e., with E at the top and A at the bottom) in another. The table shows the frequencies among reconsidered (stage-4) choices, averaged across waves 1 and 2. In the rightside-up orientation, the top option always minimizes expected value (because it is the safe option), and the bottom choice always maximizes expected value (because it is the risky option); vice-versa in the upside-down orientation. Therefore, in each panel, the sum of "Maximize expected value" and "Minimize expected value" equals the sum of "Choose top option" and choose "Choose bottom option." Percentages are rounded to the nearest 0.1%.

Table 6: Direction of revising inconsistencies

Axiom	Choose Frame *j*	Choose Frame *j+1*	*p*-value *j* = *j*+1	No Update	Swap	#Obs
Choice in frame *j* was riskier						
Irrelevance of Background Counterfactuals	**33.3%**	20.5%	0.1236	43.6%	2.6%	78
Simple Actions = State-Contingent Actions	**25.6**	6.1	0.0013	64.6	3.7	82
Irrelevance of Counterfactual Choices	25.8	**26.8**	0.8895	41.2	6.2	97
Fusion + Shift from Nodewise to Pairwise	**23.2**	17.6	0.2951	56.3	2.8	142
Complete Strategies = Implied Lotteries	**26.0**	21.5	0.1219	48.5	4.0	550
Reduction of Compound Lotteries	**33.2**	16.0	<0.0001	45.2	5.6	832
Overall	**29.4**	18.1	<0.0001	47.7	4.7	1781
Choice in frame *j+1* was riskier						
Irrelevance of Background Counterfactuals	14.4	**32.5**	0.0154	50.6	2.4	83
Simple Actions = State-Contingent Actions	12.3	**16.0**	0. 5349	66.7	4.9	81
Irrelevance of Counterfactual Choices	**32.7**	13.9	0.0050	48.5	5.0	101
Fusion + Shift from Nodewise to Pairwise	**18.5**	17.5	0.8192	57.8	6.2	211
Complete Strategies = Implied Lotteries	17.3	**31.0**	<0.0001	46.6	5.2	562
Reduction of Compound Lotteries	20.2	**25.4**	0.0522	49.0	5.5	635
Overall	19.1	**25.5**	0.0001	50.2	5.3	1673
Choices in frames *j* and *j+1* are not risk-ranked						
Irrelevance of Background Counterfactuals	-	**-**	-	-	-	0
Simple Actions = State-Contingent Actions	-	**-**	-	-	-	0
Irrelevance of Counterfactual Choices	14.3	**28.6**	0.2554	46.4	10.7	28
Fusion + Shift from Nodewise to Pairwise	**23.8**	11.9	0.2003	57.1	7.1	42
Complete Strategies = Implied Lotteries	20.0	**23.8**	0.4382	52.4	3.8	185
Reduction of Compound Lotteries	**28.0**	18.3	0.0243	48.4	5.3	246
Overall	**24.0**	20.4	0.2274	50.5	5.2	501

Note: Wave 1+2 sample. *P*-values are from two-sided tests for differences in proportions. To facilitate reading the table, we have bolded whichever frame-*j* or frame-(*j*+1) number is larger in each row. Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table 7: Average inconsistency rates by axiom

Axiom	(1) Inconsistency Rate Wave 1	(2)	(3) Inconsistency Rate Wave 2	(4)	(5) p-value (1)-(2)	(6) p-value (1)-(3)	(7) p-value (3)-(4)	(8) p-value (1)-(4)	#Obs
	Stage 0	Stage 4	Stage 0	Stage 4					
Wave 1 sample									
Irrelevance of Background Counterfactuals	12.5%	5.7%			<0.0001				595
Simple Actions = State-Contingent Actions	11.9	8.1			0.0002				592
Irrelevance of Counterfactual Choices	12.5	15.0			0.0325				578
Fusion + Shift from Nodewise to Pairwise	23.4	13.4			<0.0001				579
Complete Strategies = Implied Lotteries	19.5	8.3			<0.0001				590
Reduction of Compound Lotteries	23.0	8.3			<0.0001				591
Overall	20.1	9.2			<0.0001				571
Wave 1+2 sample									
Irrelevance of Background Counterfactuals	12.9	5.9	8.3	3.8	<0.0001	0.0259	0.0012	<0.0001	236
Simple Actions = State-Contingent Actions	12.3	9.1	6.1	6.1	0.0218	0.0025	1.0000	0.0020	236
Irrelevance of Counterfactual Choices	13.9	17.2	11.8	14.2	0.0781	0.3713	0.1830	0.9045	221
Fusion + Shift from Nodewise to Pairwise	24.1	14.5	17.7	11.0	<0.0001	0.0052	<0.0001	<0.0001	226
Complete Strategies = Implied Lotteries	22.1	10.1	14.6	8.1	<0.0001	<0.0001	<0.0001	<0.0001	233
Reduction of Compound Lotteries	26.1	10.4	18.3	8.9	<0.0001	<0.0001	<0.0001	<0.0001	232
Overall	22.4	11.0	15.1	8.4	<0.0001	<0.0001	<0.0001	<0.0001	216

Note: Top panel: wave 1 sample. Bottom panel: wave 1+2 sample. Inconsistency rate = (total number of inconsistencies)/(number of potential inconsistencies). *P*-values are from two-sided tests for differences in proportions.

Table 8: Results from structural estimation

A. Pairwise Choices Between Complete Strategies

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.803	-0.735			
	(1.192)	(0.550)			
stage	-0.0117	-0.0953			
	(0.0363)	(0.0151)			
wave2*stage	0.0172	0.0589			
	(0.0414)	(0.0208)			
constant	-1.312	1.300	4.988	7.405	1.249
	(1.103)	(0.455)	(2.937)	(9.220)	(3.368)

B. Pairwise Choices Between Compound Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.216	-0.477			
	(0.871)	(0.459)			
stage	0.0303	-0.102			
	(0.0308)	(0.0148)			
wave2*stage	-0.00574	0.062			
	(0.0381)	(0.0208)			
constant	-0.919	1.101	4.599	2.814	2.460
	(0.681)	(0.333)	(2.251)	(3.727)	(3.478)

C. Pairwise Choices Between Reduced Simple Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.0489	-0.390			
	(0.707)	(0.431)			
stage	-0.0205	-0.111			
	(0.0299)	(0.0151)			
wave2*stage	0.00834	0.054			
	(0.0376)	(0.0205)			
constant	-0.575	1.144	3.886	1.930	2.933
	(0.515)	(0.300)	(1.816)	(2.615)	(3.344)

Note: Wave 1+2 sample. #Obs is 21330 choices. Standard errors in parentheses. In panels A, B, and C, respectively, the difference between $\sigma_{\eta_1}^2$ (columns 4) and $\sigma_{\eta_2}^2$ (columns 5) is -6.155 (SE = 12.053), -0.354 (SE = 6.738), and 1.003 (SE = 5.545).

Web Appendix A. Open-ended responses

We have compiled unedited, open-ended responses from the inconsistency and placebo reconsiderations from version 1 of the survey. Participants were confronted with all of their inconsistent choices, as well as placebo choices. Thus, many responses may be from the same individual. Responses that a participant left blank are not presented in this appendix.

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1 Open-ended responses for participants who chose to keep their original choices

As described in the paper, participants were confronted with inconsistencies and placebos. For both inconsistencies and placebos, the top of the screen read: "In one question you chose [Option 1] over [Option 2], but in another question you chose [Option 2] over [Option 1]." The screen then displayed both of the participants' choices and asked, "Do you think the two situations are different enough that it makes sense to have different choices, or should they be the same?"

There were two possible answers, which triggered different follow-up questions. If the participant answered "it makes sense to have different choices," she was asked the follow-up question: "Why do you want to make different choices in these two situations?" Unedited open-ended responses, sorted alphabetically and categorized by month of response, are listed below. Responses have been separated by whether the participant was confronted with an inconsistency or a placebo.

1.1 Inconsistencies

1.1.1 Responses from July 2013
- 70,500/yr is high enough.
- ACF gives higher returns
- Again, I feel indifferent towards these two options. (I think 80,000+ per year is a very deceit amount of money)
- Again, I interpret these choices as having similar odds for similar payoff, so why not take a chance?
- At age 50, I'd rather have $94,000 than $88,000
- BCE in the second box has a higher chance of being greater 75,000 and a higher chance of being 47,00 which is higher than the 44,000
- BDE is technically a safer risk in this case, because of the potential payout at the first spin being relatively high (and having a 50% chance).
- Because in both choices the chance of getting more money is higher than the other choice.
- Because in the first solution, I can have a
- Because the lowest amount i would be getting if I choose ADF is $47000, which is only $3000 less from the conservative $50000. So why not aim for higher $75000.
- Because the probability seemed more in my favor.
- Because they are different options
- Because under different circumstances people desire different outcomes
- Best to play it safe unless you get to make another decision at age 50
- Both of my choices give me the chance of saving 112,500 in retirement.
- Chance to make more money with ACF than ADF
- Choice depends on age

- Choices depend on your age and I didn't assume that the second half of ACE was being made at age 50
- D has more choices.
- Didn't assume that the second half of ACF would be decided at age 50. I wanted to take big risks at age 35 and low risks at age 50.
- Didn't assume that the second part of ADE would be decided at age 50... I want to take high risks at a young age and low risks at an older age
- Different choices have different outcomes depending on my life at that time.
- Different circumstances could arise, in which different outcomes seem like better choices.
- Different circumstances warranted different choices.
- Different circumstances, different answers.
- Different circumstances, different choices.
- Different circumstances, different choices.
- Different circumstances, different choices.
- Different circumstances.
- Different circumstances....different choices.
- Different value amounts and the higher likelihood of making a higher salary
- I am confused as to how this is different than before..
- I am indifferent between two. On the one hand, the highest amount in BDF is very attractive; on the other hand, the lowest amount in BCE is hight than the lowest amount in BDF. If I get 88,000, I might be a little bit sad..
- I am quite indifferent between these two choices
- I believe I answered this before - one seems simpler
- I chose ADF over ACF becuase I liked having an option where both the choices were conservative.
- I chose C becasue I could compared it to the other grayed out areas, whereas I chose D when I wanted to guarantee 150000
- I clicked the one that said I wanted to keep my choices.
- I definitely messed up in this question. I now realize that it is the exact same thing only drawn (shaded) out differently. I would go with ADF for both questions.
- I did consider carefully at the first time. I choose the ADE because it is 1/4 chance of $141,000/yr and 1/4 chance of $88,000/yr. However,it is 1/2 chance of $94,000/yr in ADF, which is more than $88,000.
- I did not consider carefully at the first time.Sorry about that.
- I do not want to make changes.
- I feel quite indifferent between the two.
- I felt riskier when choosing DF.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I liked BCF better because there was no risk of ending up with only 88.000 a year, whereas in BDF you had a 25% of this happening, and equal shot at the higher values.
- I may make a different decision because I have an alternative scope of the situation and would consider the risks and rewards differently. I have the grayed out choices to compare it with in one of the scenarios.

- I obviously did not think this one through. I should have gone with option ADF because it gives me the best possible outcome and the highest probability of getting the best outcome.
- I prefer DF, greater chance of more $$ than CF
- I prefer the situation that I have 75% possibilities to receive more than 70,500/yr.
- I supposed the bracketing is influential. In the simple layout, I focused more on the minimum. In the more complex layout, I focused more on the 75% chance of receiving $70,500 or more.
- I think I should be consistent.
- I think that the BDF route makes more sense because I could end up with more money and 44,000 isnt that much less than 47,000
- I want to make a different decision when I'm different ages
- I want to make different choices because there are many options in this scenario and this gives me to largest chance at a better outcome.
- I wanted to be more conservative at age 50
- I wanted to be more conservative at age 50
- I wanted to click "It makes sense to have the same choice" just now. I want to change the first one to ACE over ACF.
- I wanted to make sure that it was less likely for me to get under 70,000
- If there is a chance of losing over 5,000 I go with the conservative option. If there is a chance of losing less than 3,000 as well as gaining a lot more, I will choose the 50/50 option.
- Im not sure
- In ADE the chances of getting $75000 is higher than
- In ADE the chances of getting $75000 is higher than
- In BDE even if at first I get to another option with a 50% chance I still have a chance of getting a large amount of money
- In BDF, I figured it was worth trying for the $225k.
- In both there is a 25% chance of getting $88,000/yr. But in
- In situation A I chose BCF due to the fact that the odds of me getting 225,000 per year were the same. Situation B was the same thing except I chose BDF because I was more likely to make more than 88,000 than in the BCF.
- In the
- In the bottom scenarios, you have more choice in the decision.
- In the first box the chances of getting the amounts are more clear
- In the first option, the BCF was a risk that had a 50% chance of a reward much bigger than the conservative, and a 50% chance of a reward a little smaller than the conservative. In the second question, the BCF had a 50% chance of $47,000 while the BDE had a 50% chance of $75,000
- In the first question, I went with ACF only because if I did end up on the "conservative" side (50%) it would be 3,000 dollars more than taking ACE where I'd have a 1/4th of a chance or earning less.
- In the first situation, if I took BDF, it seems that the first choice will affect how much I can get, too risky I guess.
- In the lower ADF option there is a very high probability (50%) that you will only get 47,000. In the lower ACF (the option that I chose), you have the same probability of getting 47,000 BUT you also have the same probability of getting a much higher amount.
- In the top graph, there are many other possibilities, whereas there are only two other possibilities in the bottom graph.

- In visually seeing the options I was more tempted to take risks
- It is confused me that makes me think D has more money
- It looks like the second one has more money
- It makes sense for them to be the same if you get to choose between C & D or E & F at age 50, rather than having that left up to chance form the beginning.
- It makes sense to have different choices.
- It makes sense to have different choices.
- It makes sense to have different choices.
- It makes sense to have different choices.
- It makes sense to have these choices not be the same because the probability of me getting more money in both is different
- It seems like I had a better shot at getting more than $44,000/yr (or 47,000) by choosing these plans.
- It would make sense of them to be the same only if the second part of the decision was made at age 50 and not left up to chance.
- It would make sense to be the same if you can always make a choice at age 50, otherwise it's best to play it safe
- Later in life I like the idea of the bigger risk reward
- Life is unexpected. Different choices are necessary.
- More conservative at age 50
- More options vs. less options.
- One has many other options.
- One seems simpler
- Only makes sense for them to be the same if you get to make a choice at age 50
- Probability seemed more in my favor.
- Receiving $112,500 seems worth the risk
- The conservative 100,000 affects the choices.
- The first choice BCE takes high risks than choice BDE. On the other hand, I can have 75,000/yr with the second choice BCE more likely than with the second choice BDE.
- The first time I chose ADF because I am conservative. But later I figured out that there is 1/4 chance of spending $225,000/yr,1/2 chance of spending $141,000/yr and 1/4 chance of spending $88,000/yr. Then the total chance of spending less than $150,000 is 3/4,however, it is 1/2 chance of spending $150,000/yr in ADF.
- The images do not guarantee the same amounts of money.
- The numerical depiction of the odds affected my judgment.
- The percentages vary.
- The percentages were more in my favor.
- The percentages worked more in my favor.
- The percentages worked more in my favor.
- The percentages worked more in my favor.
- The potential payoff is higher.
- The probability seemed more in my favor.
- The results are different; the first one will be 50% 150K, 25% 141K, and 25% 88K while the second one will be 25% 225K, 50% 141K, and 25% 88K.
- The top scenario has more input from and thus your decision should be different.

- There are different probabilities for the different choices.
- There were probably some middle steps that prevented me from choosing BCE over BDF
- These are different questions...
- These situations are entirely different.
- They are the same amounts so should have the same answers. I think that my answers changed during the survey because there are so many questions and different amounts to consider. My answer changed because another questions subconciously influenced it.
- They are the same amounts so should have the same answers. I think that my answers changed during the survey because there are so many questions and different amounts to consider. My answer changed because another questions subconciously influenced it.
- They are the same amounts so should have the same answers. I think that my answers changed during the survey because there are so many questions and different amounts to consider. My answer changed because another questions subconsciously influenced it.
- They are the same probabilities, just written differently
- They give different results. The first one will give 50% 150K, 25% 141K, and 25% 88K while the second one will give 25% 225K, 50% 141K, and 25% 88K.
- They offer the same probabilities, just written differently
- Those seemed like the best options
- Top choice includes A or B.
- When people feel as though they have been being safe for a long time, they look to make riskier choices and vice versa
- When the choices are compared with the grayed out options then your decision is put into perspective.
- With the inclusion of the grayed out choices, the relative worth changes
- With the opportunity for a much higher income, and such a small difference between the lowest chance $ amt and the conservative pick it seems worth the risk
- With the opportunity for a much higher income, and such a small difference between the lowest chance $ amt and the conservative pick it seems worth the risk
- Yet again, you got me here! Ii should have chosen ACE as my final answer because there is 50% chance that I would get 70,500 and only 25$ chance of getting anything lower. VERSUS in option ACF I would have a 50% chance of receiving an amount lower than $70,500.
- You should invest differently at age 35 than age 50
- because in situation 1 i have chances to get lower than 47000 while in situation 2 i won't get less than 47000
- because the first one is conservative choice that is different from the second one
- choosing E is safer
- equivalent
- i feel I'm quite indifferent between these two choices
- in case 1, I view C/D as irrelevant and only looked at E/F individually. In case two I compiled them together and viewed them from A point of view, so I still thought C/D is relevant.
- it's more conservative to have ADE than ACF
- the amounts at stake and the probabilities are different in each of the situations
- the chances are different actually in the two situations
- the chances are different in the two situations
- the context and other E or F option makes things different

- the difference between 112500 with lowest 47000 is more then the 75000-44000
- when 225000 is grayed out, choosing ADE is no longer relatively worse than ACE

1.1.2 Responses from August 2013

- $100000 is still more than 94000 and 88000 but in the second situation i chose ADF over B because there was no possibility of getting 88000 in the first scneario
- 100% chance of 94k or 50/50 141k vs 88k
- 112500 is a significant increase from 75000 and it is not much different from 70500
- 25% of having more money a year
- 50% chance of 141k vs 150k
- 50% chance of 150k vs 25% for either 225k or 141k
- ACE higher probability of earning over 88,000/yr
- ACF gives a 100% chance of $94,000+ which I am fine with. There is a 25% chance of getting $88,000 which is something I would not prefer if I can choose to have $94,000. More is always better, but it depends on the individual situation whether or not to take the risk.
- ADE is better chance than ACE
- ADF more opportunity than ACE
- Again, there is an opportunity to escape making the minimum amount of $88,000 in ACE but not in B (second scnario on bottom)
- At the age of 50 people tend to be more conservative in decision making
- BCf is the same in both questions
- BDF in the second question is superior to
- Because BCF allows you to cut out the lowest possible option.
- Because in
- Because in BCF, you can cut out the chance of receiving the greatest possible cut to your funds while still keeping the third largest and largest potential gains, but in BDF that's not possible.
- Because in BDF there is a possibility A could happen, but if it doesn't, I want the greatest possibility of making the most money.
- Because in both cases my choices avoided a high chance of receiving $44,000 or $47,000.
- Because in the second situation there is an automatic chance of having 150000 followed by 25% chance for both the 88000 and the 141000. The other option the chances are different
- Because there isn't that big of a difference between 47000 and 44000, so I'd rather take a chance and have 70500/yr
- Because while in both BDF options there is a 50% chance of making $141,000, another 25% chance means I could make $225,000. In the BDE on the top, there was only at 25% chance I would make $141,000 and it was safer to know I had 50% chance to make $150,000.
- Because you have a 50% chance of getting 94k in either, but a 25% chance of 141k in ACF vs. a 50% of 150k in ADF.
- Because you have a greater percent chance of getting 94k vs. 88k.
- Better chance of getting a higher amount of money in the situations that I chose
- Better odds of getting the higher amount of money and if not still leaving with a decent sum of money each year
- Both plans have their advantage
- Chances are equal. only a 25 percent chance of earning less than I started with

- Choosing BCE gives a chance for a higher amount of money while only risking a relatively small amount of money.
- Different assesment of risk vs reward
- Different percent chance
- Different percent chance
- Different percent chance
- Different risk vs reward
- Different risk vs reward
- Different situations.
- Differnet presentation,second presentation is a little clearer
- For the first one I am comparing it to the conservative option on the top.
- Higher chance of earning more
- Higher pay off opportunity
- I am confused by this question. Option D is best in comparison to option F, but D is better than C in first situation above
- I am not sure why my answer changed, I would prefer ADE
- I chose the option with the greatest chance of getting either of the higher options.
- I don't want to make different choices. They are the same.
- I feel like BCF has
- I have a better chance of getting a higher amount in both of the studies I chose
- I interpreted them differently
- I like the options better
- I should have chosen ACE over ACF because it would be worth possibly receiving a little less than $47000 if there would be an equal chance to receive well more than $47000
- I think I should have chosen ACE for both situations now but the "*both*" in the last question threw me off. I don't want to change both answers I just want to change the answer to the second situation.
- I think it just happened to be random timing, no real reason. I'm keeping it the same way, because you never know how things go.
- I think once again it's also based on the choices you just made as well.
- I think what got me on this is that sometimes the word "conservative" was written, sometimes not...as stated before, my brain is on cruise control...my apologies.
- I would always try to get 70500 because there isnt a big enough difference between the lowest values in each situation
- I would go for the F part of each choice so I'm indifferent toward
- I would go for the F part of each choice so I'm indifferent toward
- I would go for the F part of each choice so I'm indifferent toward the choices.
- I would go with ADE over ACF because I feel like the chance of getting 112,500 is not in my favor so I would rather play it safe.
- I would like to a take a risk sometimes.
- I would like to choose BCF over A.
- I would like to take a risk sometimes.
- I would like to take a risk sometimes.
- I would like to take a risk sometimes.
- I would like to take a risk sometimes.

- I would like to take a risk sometimes.
- I would not choose the top one because I may get the lowest value of 44000/yr. BCF over BDF would guarantee at least 47000/yr.
- I would rather choose BCF and take the chance.
- I would rather choose BDF over BCF.
- I would rather risk the 3000 for a chance at 75,000
- I would try to get 112500 because it is so much more
- I would try to win more money
- I would want a choice that gives me a better chance of getting a path with more money.
- If I can guarantee myself 75000, I would prefer to pick that over D, but I would rather risk it to have 112500
- In ADE, there are more opportunities to escape the minimum $88,000/yr whereas the second situation does not have those opportunities.
- In the bottom box, you have other options available.
- In the first one, I should have chosen BDF. The chance for each income is the same.
- In the first one, their was less of a chance to make the lower amounts than there was in the second one (BDE). If its a 50
- In the first one, their was less of a chance to make the lower amounts than there was in the second one (BDE). If its a 50
- In the first scenario, I had already chosen to be risky at age 35, so chose to conservative later on in life. In the second, I chose to be risky for my first choice in life.
- In the first situation, by choosing D, I am giving myself the following chances: 25% of $88,000/yr, 50% of $141,000/yr, and 25% of $225,000/yr. In the second situation, I only have a 25% chance of getting $141,000/yr. By choosing C, I will most definitely get $94,000/yr, which in my opinion is better than $88,000/yr.
- In the first situation, the graph made it seem like the larger amount of money was more likely when in actuality it is the same as the second situation. In the second situation, the larger amount of money seemed too risky, so I went with ADE.
- In the first situation, there is a greater chance of obtaining >$94,000 with path ACE, whereas in the second situation, the probability of obtaining $150,000 is greater than the probability of obtaining $225,000.
- In the green situation, I already know that I will be getting C or D, so it is worth the gamble but in the blue situation,
- In the green situation, I already know that I will be getting C or D, so it is worth the gamble but in the blue situation,
- In the second scenario, the 75,000 appears to be more secure.
- In the second scenario, the 75,000 seems to be a lock, therefore no risk is necessary
- In the second situation, ACF has a 50% chance of me earning $47,000 a year while ADE has a 75% chance that I will make more than that and only a 25% chance that I will make ($3,000) less. 3,000 a year does not seem like a lot to me. In the first situation ACF is even riskier since option E is not blocked out but I'd rather take the chance of making more 20,000 or more than the conservative 50,000 since the worst that can happen is I make only 6,000 less (44,000)
- Is there is the same chance of making 112500/yr or 44000/yr, I would always chose the former. So there is a difference between the options
- Just wanted to try something different
- Making the choices I did avoids the chance of ever getting less than $94,000 per year.

- More opportunity for higher income when I chose answer D
- More options given to another set.
- My choice must likely came because of the other scenario. Furthermore in the first instance when I chose F, I had already skipped the conservative option, so I probably felt like skipping the conservative was the way to go for that scenario.
- My thoughts change sometimes. they situations are exactly the same.
- No it does not make sense to have different answers. These scenarios are identical...sorry I am really tired right now and I am not focusing properly :/
- Partially felt the difference between 50,000 and 44,000 was more important. Partially felt the difference between 112,500 and 50,000 was more important
- Same as previous response.
- Same reasoning as previous response.
- Same risk vs rewards
- Second option had too much risk
- Should have chosen BDF on second question.
- Shouldve chosen BDF on second quesiton. Risks are the same and there is the chance of making 225,000 would is a quantity worth the risk of making 88000
- So that the decisions are not dependent on one another
- Some options were no longer available, which led to a different decision.
- The ability of the past to make decisions affect my future decisiosn.
- The blocked out choices change things for me. I'll take the risk in the first scenario.
- The chance of getting 141k in either situations are different.
- The chance of getting 141k is different.
- The chance of getting 94k in ACF is the same as the chance of getting 150k in ADE.
- The choices you made before has an impact on your future choices.
- The diagrams for the first set make ti clear what the chances are of what amounts of money you end up with. In the second set, you have to think about all the choices and it's not as striaghtforward.
- The difference is not that significant, so I might as well take the chance.
- The first question
- The layout of the second set of graphs makes it more likely to select a riskier option. Even though the data is the same I believe more people would selection a riskier option with the second layout.
- The options are presented differently, and in each case, the highest average amount was chosen.
- The risk only seems worth it when the probability of the 44,000/year is 25%
- The risks are the same.
- The values are presented differently, and in each case, I picked the chart that had the greatest average value. in BCF, half the time you would make 47k, and the other half of the time you would make more. in BDE, half the time you would make 75k, and the other half the time, you would make less. I simply picked the one with the highest amount hal fthe time, which was BDE.
- There are better odds in the first one of having the highest amount possible as well as the second option I have more options with the lowest being 88000
- There basically the same question.
- There is 100% chance of 94k or a 50/50 chance of 141k/88k.
- There is a 25% chance of getting 225k.
- There is a 50% chance of 141k in ACE vs 25% chance in ACF.

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- There is a 50% chance of getting 141k in ACE byt 150k in ADE.
- There is a 75% chance of making more than 94k in ADE.
- There is not point in AED because there is a 25% of 88k while the highest payout of 150k has the same percent.
- There is the same chance to have 94k but different chance to have 141k/225k vs. 150k.
- There the same I should've chosen BCE for the first one
- There was less risk in the second part.
- These questions are confusing me
- These two choices are very similar in scope, and
- Too much risk in the second plan
- Too much risk in the second plan
- Too much risk in the second plan that I wasn't willing to take
- Ultimately I would choose option ADF over B in both situations because 47,000 is only 3000 less whereas 75000 is 25,000 more. The risk is worth it.
- Wanted to try being conservative. And I don't like a lower end of $44,000
- While 88,000 is a sufficient amount of money to live off of, the change of having almost twice that in the 50/50 is more appealing than being conservative with the second option F.
- You can be garanteed 75000, so i would always chose that one over option C or D
- a $3000 difference seemed like a cheap difference to gamble for $75,000
- ace, 44,000 is less chance
- at age 50 i thought differently
- because in these answers the probability distribution is the same.
- better chance at more money
- better chance at more money
- better chance at more money
- better chance at more money
- better chance of getting over 88,000/year
- chance for higher payment
- chance for higher payment
- chance for higher payment
- chance for higher payment
- decisions made independently at different times
- decisions made independently at different times
- depends on what scenario / etc i was thinking about. perhaps i was confused. there were many of these
- for some reason, it feels more like I'm making the decision at age 50 in the first diagram where I chose F
- higher chance of earning only $94,000/yr in situation 1's ACF than in situation 2's ACF
- higher chance of earning over 88,000/yr
- higher chance of getting 150,000 vs 88000 than in second situation
- i felt like taking the risk the second time
- i wanted to take the risk first time
- i waver in my thinking
- in choice C, risk of only making 94,000 vs. worst case scenarior of choice D which is $150,000

- in the case where I chose E, I was being prepared with a mindset in favor of risk by being presented the $112,500 option
- in the green one, i only have to compare two choices at a time but in the blue one, i have to look at the big picture
- it depends on what other questions and scenarios i was thinking about before answering each of these questions.
- lower payoff is slightly higher in bcf
- maybe I am not understanding this question really but I want to choose C in CF out of everything.
- my past decision affect the decision I will make at 50
- one i think i was thinking more about being age 50 and carefully considering
- one was made at age 35, the other at age 50.
- probabilities/amounts are different
- probabilities/amounts are dissimilar
- second situation has higher probability of earning under 100,000/yr
- second time, I felt like I should take the risk
- the decisions are made independently, if you get the 50% of higher amount in BDE right away there is no risk of getting the lower amount at all
- the first time i didn't want to take the risk but when the same situation appeared again I felt like taking the risk.
- the probability of getting the higher amount is different for both choices
- there's a chance of a higher payoff in bdf
- there's a chance of a higher payoff in bdf
- they're of different scenarios. In one, i am 35 and haven't narrowed down any optios. In the other, I am asked to compare only two choices each time
- to keep consistent thinking

1.1.3   Responses from September 2013
- aa
- b/c
- bb
- cc
- idk
- idk
- idk
- idk
- lol
- lol

1.1.4   Responses from October 2013
- .
- .
- ..
- ..
- In the first situation, there is more variability in my possible outcomes, so I wanted to be riskier to get the best outcome possible. Since my outcomes are more limited in the second situation, I decided to be a little more conservative.

- In the second situation, I chose to be conservative because I knew
- In the second situation, I chose to be conservative because I knew
- In the second situation, I chose to be conservative because I knew
- They are different
- They are different
- They are different questions
- They are different questions
- They are the same
- They are the same
- both risky choices give higher expectations
- consistent
- consistent
- different question
- different question
- different senario
- different senario
- different senario
- different senario
- essentially the same
- keep
- risky is good
- same
- same
- same Q
- same deal
- same deal
- same same
- same thing
- the same
- they are essentially the same

1.1.5 Responses from November 2013
- $144,000 is not that much less than 150,000, so the risk of getting a much lower number is smaller
- $80,000 is good enough for me to lead a fairly good retired life, so I'd rather avoid the possibility of ending up with $64,000.
- $80,000 is the minimum I think I'd need for a good living. As long as I can avoid the possibility of ending up with $64,000 and have the minimum security of $80,000/year, I might as well try to maximize marginal increase above that. Age wasn't factor because no inflation adn this was only funding after retirement.
- 150 K is good
- 150 for sure
- 32,000 dollars is not a choice in both situations
- 45,000 isn't low enough for me to be conservative. I'll risk it at that amount
- 80,000 is a safer backup than the risk of 64,000 with still high end risks

- ACE has chance of not losing as mhch, m9ore money
- ACF has chance of getting higher payout
- ACF has less chance, no idea why i chose it
- ADE is more profitable
- ADE looks less risky. in hindsight acf might be the better choice
- ADF is better
- ADF looks more profitable
- ADF seems like its more simple to understand so I chose it.
- Actually should not have.
- After taking one risk (picking A) I clearly was comfortable taking more risk the second time the question came around
- Again based on the conservative option
- Again based on the conservative option
- Again related to the conservative option
- Again, I think that visually, the different options make me feel a certain way even though the end probabilities are the same.
- Again, at one instance I felt like taking a chance at getting a larger sum, and at the other instance I did not.
- Again, each amount has different probabilities in each scenario.
- Again, probabilities are eventually the same. I believe it is worth taking risk by choosing BCF over conversative
- Already played the game for so long, might as well keep going
- Although both situations are the same in terms of risk, with the exception of at what age I make the decision, I would like to take different chances just because.
- At age 50, you're probably going to want to be more conservative as opposed to decision making at 35. However, the expected payout is higher with CF than DF
- At some point I would want to have the choice of being able to have a safe option.
- At this point it really doesn't matter which option is picked since more than the 100,000 guaranteed payment is going to be made. This primarily a decision of risk aversion- either way you're playing with house money.However, I will note that the expected payout of C is 185,000 compared to 150,000.
- Avoiding ending up with $64,000 when at least $80,000 is good enough.
- B is more conservative when compared to ACF. With more webs, it seemed like ACF was the better choice when broken down.
- B is more conservative when compared to B. I dont know why I chose different ones
- B is more conservative. ACE has higher payout however
- BCE is better at the bottom, the odds are better than they are at the top.
- BCF in the second one is riskier in the sens
- BDE IS THE BETTER OPTION
- BDE is better than BCF, my odds are better of getting 150k
- BDF makes more sense given my risk tolerance.
- Based on the conservative value
- Based on the conservative value
- Based on the conservative value
- Based on the conservative value

- Because ACE has better payoffs than ADF
- Because I chose ADF because
- Because I don't want to risk it just for a little more
- Because I have a higher chance on making more than 100,000 in BDF in the second one and BCF in the first one
- Because I realize now they are the same odds.
- Because in choosing BDF i already was in the risky mood choosing B over A
- Because in the first one I have a 50:50 chance of gaining more than 100,00 and in the second question I
- Because in the first question I have a higher chance of getting the greatest sum of money at 150,000 and the second one I have an equal chance of getting 225,000 as 64,000 so I'd go for the most money
- Because it depends on the amount of risk I am willing to take in potentially receiving more money or getting 100,000 conservatively
- Because it is the conservative choice.
- Because it's more likely that you will get a higher amount of guaranteed money over $100,000.
- Because my choices at age 35 already inhibited my prospects of getting more through C and D and so I would want to minimize losses at age 50
- Because on the first one
- Because the more stages it has, the lower risk it must be to gain more money.
- Because the second choice is less riskier. in the second choice, I have a sure chance of getting $100,000 however in the first instance, the probability of me getting that $225,000 is higher so that's why I chose that choice versus the second instance where the probability of me getting that $225,000 is 25%
- Because there are higher expected average earnings from these options
- Better chance of getting more money in each situation
- Better chance of getting more than 2 of the options ins BCF.
- Better payout
- Both choices (choice 1) in both situations give me the same possibility.
- Both choices optimize greatest dollar amount
- Both possibilities are eventually the same. both should make a same decision
- Both probabilities are eventually the same. It is safe to choose BCE over BDF
- Both scenarios have different probabilities for each amount.
- By calculating the total gain for each one, I rank one over another by its more gain.
- CE gives higher chance of receiving more than >100,000, with higher potential rewards in each choice, than CF
- Chance looks higher
- Chance looks higher
- Chance looks higher
- Chance looks higher in the way it present differently.
- Chance looks higher in the way it present differently.
- Chance looks higher in the way it present differently.
- Chance looks higher in the way it presents differently.
- Chance looks higher in the way it presents differently.
- Chance looks higher in the way it presents differently.

- Chance looks higher in the way it presents differently.
- Chance looks higher in the way it presents differently.
- Chance looks higher in the way it presents differently.
- Chance looks higher in the way it presents differently.
- Chance looks higher in the way it presents differently.
- Chance looks higher in the way it presents differently.
- DEPENDS ON WHAT I PREFERRED AT THE TIME I MADE MY CHOICES
- Decision making at 35 would be much more liberal than at 50.
- Didn't want 32,000 to be one of my options
- Different choices were made because the highest sand lowest amounts of money are different in each situation
- Different percents for different amounts.
- Different percents for different amounts.
- Different probabilties
- Each optimizes chance to get more money
- Each optimizes dollar amount
- Essentially you have equal chance in earning similar amounts of money
- Even though ACE has a greater expected payout, if living on less than 80,000 is an issue, which is potentially what could happen in ACE, ACF could be the way to go.
- Even though the risk factor was higher, I felt like the 25% chance was worth it so I kept my answer so I could have a higher chance of gaining more money
- FIRST CHOICE HAS HIGHER LOWEST AMOUNT. SECOND CHOICE, LESS CONSERVATIVE.
- FORGOT MY THOUGHT PROCESS AT THE TIME
- First situation has other considerations to factor in versus second situation only has the E vs F decision to consider
- For pretty much the same reasons - visually the two look like they would lead to different probabilities even though they don't.
- For the second condition, I chose ACE over B, but for the first condition I chose B over A. I think it was because as I calculated the risk for A over B was much higher in the first condition was much higher than the second condition. For the second case (condition), the risk was lower for having more stages to lower the risk.
- GREATER WEIGHT IS PLACED ON HIGHER SUMS
- I CHANGED MY MIND
- I EASILY CHANGE MY MIND
- I WAS MORE WILLING TO GAMBLE IN THE SECOND QUESTION
- I am guaranteed 100k
- I changed my mind because I felt like the probability was not high enough
- I chose B over ACF because ACF only had a 25% chance of getting the higher numbers versus ACF in the first scenario where there was an equal 50% chance of getting the higher numbers
- I chose BCF over BDF because I have a higher chance of getting almost 100k. I chose BDF over BCF because I have a chance of getting 141K in that case than in BCF/
- I chose the conservative estimate since I am approaching retirement.
- I didn't want to take the higher risk of the lower numbers
- I don't know why I made this decision. This survey is annoyingly long.

- I felt like opting for a riskier option
- I felt like the middle number, $141,000 was a reasonable amount to strive for
- I guess I feel like in the second set, there are more steps to go through so it feels less certain (even though in the end it is the same)
- I have a better chance of getting 100k, I am guaranteed 100k in A
- I have a better chance of getting a higher return. It's 50 50 and then 50 50 again not 25 25
- I have less of a chance at the higher one
- I kept my choices because in this instance I felt like the %150,000 and the 50% probability wasn't worth it
- I like having more flexibility and uncertainty in payoffs than having fewer directions my pay could go in
- I like that both have 50 % chances of getting 75. but i would choose BCE the second time because it's lowest amount is 43 vs. 37 in BDE
- I like to take risks
- I made my decision at age 35 to go with the
- I never really take the conservative route, I would rather take the risk to get the larger amount of money. the bigger the risk the bigger the payoff
- I pick that one because I can have a guaranteed 43 with a 50-50 chance of more and with the other choice there is a possibility that i will get less then 43.
- I realized that both of the choices have the same probabilities
- I think it is wiser to choose the one with more stages, more gain than than the other one.
- I think that different choices are warranted here because of the inclusion of a 112,500$ option. It becomes more desirable in the diagram.
- I want different choices because the breakdowns of the odds are different
- I want to choose BCE over BCF because I have a higher chance of getting more money in BCE.
- I want to make different choices because the breakdowns of the odds of getting various amounts differs
- I want to make different choices because the greyed out areas make a difference
- I want to make different choices in these situations because in the first situation there is more options so I could afford to be conservative. In the second option I have no other choice so might as well take a small risk to get more money
- I want to make the same choice in both situations since the probabilities, even though presented slightly differently, are ultimately the same with option BCF (presented in 2 different ways). However, the survey will only let me change my answer so that I change to choosing A in both situations.
- I want to maximize my earnings
- I was already taking a risk because I couldn't pick conservatively in AB in the first scenario so I was willing to risk more
- I was feeling riskier when I chose
- I was feeling riskier when I chose
- I was feeling riskier when I chose BCF than when I chose A
- I was playing it safe on the first one, but going for more money on the second choice
- I was probably feeling less adventurous, but I would go with BCF.
- I was very split between what i would have chosen for these two answers so i think it correctly reflects my hesitation to choose one over the other

- I would BCF because theres a min of 80k and a shot at 225k
- I would always choose risky because I get much gain if I happened to get higher chance of money
- I would be content in both situations
- I would be satisfied with both options.
- I would be satisfied with both options.
- I would be satisfied with both options.
- I would choose BDE over BDF at the bottom. My odds are better.
- I would keep my current choices because the payoffs are different - they are different situations!
- I would pick option one for both of them, I want to have the chance to make 225k
- I would want BDE i have a chance of getting 150k
- I'd be satisfied in both situations. I really cannot decide.
- I'm not really sure why. I think that the extra step (even though the end probabilities are the same), made me feel differently about the options. I think it was all visual.
- I'm okay with having any total above $40,000, so I may as well take a risk on the higher amounts.
- INCREASE CHANCES OF GETTING HIGHER SUM AND DECREASE CHANCES OF GETTING LOWER SUM
- INCREASE CHANCES OF GETTING HIGHER SUM AND DECREASES CHANCES OF GETTING LOWER SUM
- If I choose D, I have 50 chance of getting higher money. Because I gain much more than to loose comparing C and D, I would rather choose D.
- In DF, making the decision at 50 conservativity is a better bet. But in CF you're starting the decision making at 35, so the gain over the 100,000 for option C you're effectively playing with house money
- In case 1 the gains can offset the losses and are more likely to occur. In case 2
- In choice CF I have to play the chance game. I didn't want the 50,000 conservative.
- In choice F, you already lost money from the conservative choice of surely making $100,000. So precondition changes the decision.
- In my decision to choose ACE, I was able to see all the other options that were no longer available and because the situation presented more options, I made different conclusions than when I was simply deciding between ADE and ACE in the first module. In the first model< I thought the chance to get 75000 was more important than taking a 25% risk with ACE.
- In one case, the certain option is easily the best of three. In the other case, the certain option is not necessarily the best of six.
- In one that I chose D, I have a 50% chance of ending up with a much higher amount than what I could get by going conservative. Whereas in the one that I chose C, I have 25% chance of getting that amount when I have a 50% of getting something so much more.
- In the 2nd situation, any of the three choices are still greater than the original ($50,000) so I might as well risk it.
- In the first case, I don't want to risk 50% chance of
- In the first case, I don't want to risk 50% chance of
- In the first case, I don't want to risk 50% chance of
- In the first choice, if I chose the other there's a 50% chance that I only get 80,000.
- In the first one I can never drop below 90,000 abd I have an equal chance of 150. In the second one, i like the chance of a back up plan with the 135

- In the first one the chance of getting a lower amount is lower at first. They are probably about the same though looking at it now
- In the first one there is less chance in general. In the second one the 50% chance in BDF is higher than that in BCF
- In the first one, I have a possibility of making 225,000 so I chose that one.. In the second one
- In the first one, I have a possibility of making 225,000 so I chose that one.. In the second one
- In the first scenario there were still may other options whereas in the second, I was limited by what I was unable to choose
- In the first situation the ending values are all similar. ACF gives me a higher chance of
- In the first situation,
- In the first situation, I only had to consider E vs F whereas in the second I had to contend with C vs D as well as E vs F
- In the second one where i chose DF I was already being risky enough to choose B so I guess I wanted a higher chance (75% to make more than the original conservative 50000$
- In the second option, I think of it as having a 75% of getting something higher than 81,000. Whereas in the first case the chance of getting 81,000 is just as likely as the rest.
- In the second question, the chances of earn 44000 looks higher than the 1st.
- In the second set of diagrams, I would have lost less if I chose the second box versus the first ($94,000 versus $88,000)
- It depends. ADE is simpler. It gives you a 50% chance to have a conservative amount. In the first option there are amounts much greater than ADE and the likelihood of getting one of them is 4 out of 6 not counting the conservative value (choice B)
- It just felt like there was a better probability for the first ACE than in the second, even though in the end, they are the same.
- It makes sense because I would do anything to avoid 64,000
- It makes sense because I would want to make more than $50,000 by initially choosing B. So I will take a chance if I am not guaranteed more than 50,000 and settle for $75,000 if its already guaranteed.
- It makes sense to choose BCF over BDE because the chance of having over 100,00 dollars per year is worth giving up a bit of certainty. Plus, the alternative of 47,000 is higher than in BDE, where it is 44,000. In the second situation, it makes more sense to have a 75% chance of having over 70,000.
- It really depends on the risk you want to take when you decide between these two. On one hand you have a lesser chance for a lower pay, in the expense of not having as good a chance at a higher pay.
- It seemed like the most logic progression.
- It seems I am inconsistent. No diea why but I know ADE would be the better decision for me
- It was based on testing fatigue, they should have been the same answers.
- It would give me the high probability of earning money.
- It's worth the risk if it is the only choice left to me.
- Its a different situation. I'm trying to be conservative.
- Like the last one, they are basically the same choices
- Looking at it again, I probably would want to change my answer in the first set.
- Looking at it again, I would probably want to switch my answer in the first set.
- Lowest possible minimum outcome in each situation.

- Making a decision from age 35 to age 65 is a bit more risky than making a decision from 50 to 65, so I felt I needed to be more conservative at 35 because I was looking so far ahead
- Maximize earnings
- More of a chance to get the middle number of 67.500 in the first one. not so much in the second one so I chose differenlty
- More payoff
- My chances became better
- My odds are better in BCF at the bottom than they are at the top
- My odds become better
- My odds of more money became better in the bottom
- No idea why I chose differently, the framing
- Not too different, might as well vary choices a little.
- Now that I look at it, I would change my first answer to ADF and leave my second choice the same. in fact, because ADF in the first set of diagrams are conservative and not risky, I think they would be a better choice.
- On the top situation, there is a higher probability of earning more than in BDE than BDF. In the bottom scenario, i want to take the risk of earning 225,000
- One is safer and one is riskier so I think both situations would be okay.
- One scenario gives you an option for guaranteed money while the other does not.
- PREFERRED THE LESS COMPLICATED PLAN
- People have different risk preferences at different time periods. I do not second guess my judgments.
- Possibility looks higher in BDE
- Precondition exists in F.
- Precondition of lost money is involved in the second diagram
- Prior decisions, despite not being changeable, can influence future risk behavior.
- Probabilities are eventually the same in both situations.
- REalized now that they are the same, just framed differently
- Risk and payoff structure different.
- Riskiness changed once I knew the outcome of the BCF situation
- SWITCHING IT UP, LOOKED AT PERCENTAGES
- THERE'S A HIGHER CHANCE OF GETTING MORE MONEY IN BOTH CHOICES I PICKED
- TRYING DIFFERENT OPTIONS
- TRYING DIFFERENT OPTIONS
- TRYING TO BE MORE CONSERVATIVE IN MORE COMPLICATED PLAN
- The 64,000 makes it too risky in the first one, but in the second one the 75% of not getting it outweighs
- The age when making the decisions can effect the choices
- The alternatives are similar
- The bottom half is a better option. I have a 50% chance of getting 150k
- The chance of earning more than 100000 is greater in both BDF situations.
- The chances are equal
- The chances are essentially the same
- The chances looks higher in bde

- The chances of getting the 225,000 is larger in the second situation
- The complexitty of the situations makes it alright to have different choices.
- The concservative option is not very good.
- The conservative amounts are both pretty high
- The first ACE option is the same as the second ACE option below i
- The first ACE option is the same as the second ACE option below i
- The first ACE option is the same as the second ACE option below i
- The guaranteed amount at the beginning was 100,000 that you can live with. Since all of these options will result in more than 100,000 it doesn't really matter
- The highest value is too low of a chance to obtain for the second option in case 1. In case 2 you maximize your possible options and take a very minor loss which is offset by the gain.
- The lowest amount in option b is half of what I cuold get from picking option A
- The majority of choices for the first situation are greater than the conservative ($50,000).
- The odds were in my favor.
- The options depend on what risk you want to take. For one you have less of a chance for a lower payout, but the payout is lower than all the other options.
- The options looks different when present in different ways. I choose the options looks more appealing to me.
- The percentages end up being the same (I prefer ACF to ADE but the computer wouldn't let me change it).
- The percentages end up being the same (I prefer ACF to ADF but the computer wouldn't let me change just one choice instead of both).
- The presence of conservatives in one set changes my evaluation of the scenario. I picked the choice that had the higher conservative.
- The presence of conservatives.
- The probabilities are the same. I just wanted to try out different taking of chances.
- The probabilities for each level of future income is the same in the boxes on the left. The boxes on the right also have the same probabilities of each level of future income.
- The risk factor. In the first choice, I thought about it in terms of where I started. If the diagram started at age 35, then I would have taken a different route than the second diagram which started at age 50
- The second situation has more favorable outcomes.
- The situations feel different in that one requires less choice but has equal risk. I'd be happier getting less but having less worry as well.
- There is a 75 percent chance in the top boxes that you will have greater than the amount in b. In the lower boxes, there is a
- There is a 75% chance I will get 108 or above compared to a 50% chance I will get 108 or above.
- There is a chance of earning more money, so it's worth taking the risk.
- There is a precondition of the original conservative choice of $100,000. Also, you see different choices in the first diagram that sway your decision.
- There is a strong chance that I will recieve more than 150 in the plan BDF as opposed to BCE
- There is more security in chances.
- There's less of a direct chance of getting a small dollar amount
- These chances are eventually the same. Both should make a same decision
- These two should have been the same answers

- They are inherently different scenarios, one has three possible outcomes with varying probabilities while other has two outcomes, in scenario with three outcomes it is possible to have a greater utility than in scenario of
- They are the same situation but I think that in either case I would be content
- They both maximize the money earned
- They don't have very different risks and rewards involved, so might as well change it up a little.
- They each yield the same average income in the long-run.
- They represent different probabilities
- They seem like both perfectly reasonable decisions that I might make in the situation and I would probably be happy with both.
- They should be the same (conservative) because the chance of getting 64,000 is high and not really worth the risk. 80,000 is happy medium
- They yield the same average income in the long-run.
- They're different enough
- They're different enough
- They're different enough
- This also has to do with the risk factor. I felt like the more conservative answer would be best because the numbers are pretty high anyway (I use 100,000 was my benchmark)
- This is because in the second instance,you have more to loose
- This makes sense because I did not want to only make $52,000/yr. I would be comfortable with $100,000/yr.
- This makes sense because the top one has a chance of making $225K, and in the bottom one there is a 50% chance to make $150K with is between than a 50% chance to make $108K.
- This makes sense from the standpoint that living
- This makes sense from the standpoint that living
- This makes sense from the standpoint that living on less than 80,000 might possibly be difficult. Otherwise, the expected payout is greater for ACE
- This shows the diversifying option of your portfolio.
- Though the chances are the same, in the real world sometimes you want to take a risk and sometimes you don't which is how I felt during this experiment. And what my choices represent.
- Was not a good idea to do that.
- When faced between a 50/50 chance and a conservative I will choose the conservative.The less branches in decision make it more likely for me to settle for the conservative. It is instinctual for lack of better phrasing.
- Yes, ADE in the top is better than ADF, but ADE in the bottom is better than ADF.
- Yes, I loike the 50% chance of 135 on the second one it outweighs the chance of 81k because the 25%chance of 225K exists still
- Yes. BDF would be a better option than BCE because there is a 25% risk of a lower payout whereas BCE is a 50% risk.
- Yes. BDF would be a better option than BCE because there is a 25% risk of a lower payout whereas BCE is a 50% risk.
- Yes. BDF would be a better option than BCE because there is a 25% risk of a lower payout whereas BCE is a 50% risk.
- almost the same
- almost the same

- almost the same between these two
- asdfdsasdfdsasdf
- asdfdsasdfdsasdf
- at 50 i will have a better understanding of what my needs will be at 65 so i feel i can take more risk
- because ADE has a higher reward. 75% chance that I can make more than my conservative level in option B
- because I don't like how low 32,000 is. Personal preference
- because I have a 75% chance of earning more than 100,000/year in the option on the second half of the screen
- because at the age of 35 I would have had to choose and there was a possibility that i would have received the lowest amount.
- because in ADE, there's only a 25% chance of getting 64,000
- because people feel different depending on their mood and the length of time they have to make the decision
- because the payoff is greater at a lower risk
- because the security is different
- because they gray was something that couldn't happen. i was more likely to get $75, 000/ year than be stuck with $45,000/year
- because you can see your past history.
- because you have different situational knowledge and you can see past decisions
- better payoff
- bigger payoff
- both give me a better chance of making more than 40,000
- c is riskier and has the chance of being more beneficial
- cf has the option a still available
- chance of gaining 60,000 dollars is worth the risk
- chance to win more money
- chances are not the same. above need to make decision of d
- depending on whether i want to risk gaining 112,500 dollars for retirement
- didn't want to take risk
- different decisions at different ages
- different risks
- different structure
- don't have to take a risk
- fifty percent chance of different amounts
- good to be conservative
- good to be conservative here
- good to get the 90K
- good to have 100K guaranteed
- good variety here
- grayed out areas limited choice making
- have more variabliity
- high chance at 50 percent of gaining 112,500 dollars
- higher chances of not getting 64,000

- higher gain
- higher gain with calculation of probability
- higher likelihood of making more money
- i dont like the possibility of getting 37
- i get confused easily
- i have 50% more likely to get the
- i like having the more conservative option just in case...
- i like having the option of potentially getting 225,000
- i like having variety
- i picked the ones that gave me the greatest chance of making the most
- i prefer to have the conservative option available and take a less risky option
- i want both chances of getting the 112.
- i was 50% more likely to get $75000 but less likely t0 get $40, 500. before hand, i knew i was going to get $45,000 so anything else would be icing on the cake
- i was more likely to be risky if i already knew i was going to make a minimum of $45000
- i would like the chance to get 112.
- i would like the option of either taking a risk and getting a substantial more amount of money or playing it a bit safe and getting at least 90,000
- i would make the same choice in the first situation but would make a different one in the second situation. I would choose BCF because there is a chance for me to get 112
- i would pick BDF because i have a greater chance of getting more than 43.
- i would want the option of getting 225,000
- i'm confused
- i'm not sure
- if the highest i can get is 75 i would rather go with the 50-50 and get have the chance of me getting 43 instead of 37
- in 1st option there was 75% chance of winning more than 100,000. whereas in the second choice, the chance fell to 50%, making ADF a better option
- in every situation i made the choice for more money and luck was on my side
- in one situation you could get more money
- in the first situation i would choose BCF because there is a chance for me to get more than 50,000
- in the first situation i would pick BDF because i have a 50% chance of getting 64
- in the second instance, there was a greater chance that i could make more than 45, 000
- in the second situation it is more likely that i can make more money
- it allows me to choose a riskier option if i wanted to or play it more conservative
- it depends on if i want to have the choice of possibly having 112,500 dollars to spend in retirement
- it depends on the amount of risk i am willing to take and if i would rather have the options of potentially getting 90,000 vs 81,000
- it's not low enough for me to want to choose the conservative
- its a matter of my willingness of potentially recieving 90,000 vs 81,000
- its good to have variety
- just fell like it is worth it
- less risk
- less risk

- less risk
- less risk
- less risk
- looks like i can get more money
- looks more appealing
- looks more appealing in different ways.
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more capital
- more chance at getting the middle number if i risk it
- more chance at the higher number,. the first one has too much chance at the lower numbers
- more conservative
- more conservative when compared to ACF. With more webs, it seemed like ACF was the better choice when broken down.
- more options
- more options
- more variabliity
- more variety
- more variety
- more variety
- more willing to take a chance at 60,000 than guaranteeing 50,000
- more willing to take a greater chance
- my odds are better in bde
- no difference
- odds are the same
- once again it makes a difference to me what i previously did in the past decisions so having that past history is what essentially helped me decide the riskier one
- one has many more options that you could choose if the decisions we're pre-selected for you
- one is a safer
- one is direct
- one is direct one isnt

- one is inside a subset
- one is more direct of a path
- one is safer
- one is safer
- one just looks easier to comprehend. The other one is more clear which option gives you a 50/50 chance of getting more money
- one option doesn't give you the 50/50 chance to get 50,00 the other option does
- possibilities are different. both decision should be the same
- probability to get higher retirement payment in risky situation is low. I would rather choose conservative
- risk becomes more appealing after an hour of this
- risk becomes more appealing after an hour of this
- risking and only getting 32,000 was too much for me
- risks are different
- sadfsafdasdf
- same probability. both decision should be the same
- same probability. both decision should be the same
- same probability. both decision should be the same
- same probability. both decisions should be the same
- same thing actually
- since
- so that my chances of getting the 81,000 vary a bit so I have the options of which is better
- sometimes 40,000 is more appealing
- sometimes I don't feel the urge to risk my money
- tacos
- the average of 10800 and 52000 is almost same as 72000
- the background information is probably why I was not consistent
- the change of getting a number above 72 is great than 25% so I opted to thke the chance.
- the choice of B over A
- the choice of B over A
- the first i avoiding 64,000 but in the second I have options where I don't have to go with 64,000
- the many different weightings of the percentages allows me to pick and choose which option would be better. there are more options available that are all attractive
- the more options available, the more satisfied I am with my choice
- the one below was grayed out, so i was more likely to take risks
- the other options presented me with a greater loss
- the probabilities are different
- the probabilities in the first ADE make it so you are much more likely to get 150. In the second, this is not so. The risk the second time is worth is because it is a greater value (225,000)
- the risk is high but the 225k option was appealing and I thought I had a good shot since 25%
- the way that they are formatted and the other options that are available really sways the decision maker. I can see it that they are the same however for some reason they seem different
- these choices gave me the greatest chances of making the most
- these choices give me a better chance of having more money
- these gave me the greatest chance of making the most

- these gave me the greatest chance of making the most
- these provide me with more options and higher earnings
- they are both different solutions. We want to maximize expected value and in comparing with the situation given, I estimated the value.
- they are different plans
- they didn't have the same questions. One risk was greater than the other
- they have similar average
- they offer different options that would be good if you want to take different risks in investing
- they vary in amount of risk you can take and so i like having the options
- they're different enough
- this history of the previous decisions made a difference in what i chose
- too many choices
- when I chose C and F, i had a 25% of earning each amount, but didn't want to earn a chance of $40,500/year. since I could already have a chance of earning $45,000, i was more risky in the first one. In the second when only E and F were an option, I had a 100% chance of earning $75,000 compared with a 50% of earning $67,500
- you have a 50% chance of getting 112 in the second option
- you have the likelihood of making a lot of money
- you showed different pictures

1.1.6 Responses from December 2013
- 150,000 IS 50%
- 50% CHANCE OF 225,000 IS SIGNIFICANTLY HIGHER THAN 150,000
- 50% chance is more appealing than 25% even for larger sums
- 50% chance of a larger sum is more appealing
- 50% chance of a larger sum is more appealinh
- 50% chance of making 75k vs only 25% for 112500
- ???
- ???
- ACE has a smaller probability in the second question. It's safer to go with ADF because of the higher probability to make more money
- ADE's max income is only $75,000 whereas ACF's max income is $112,500. I want the maximum amount of money for retirement.
- AT 50 I WOULD WANT TO HAVE A HIGHER GUARANTEED AMOUNT THAN I WOULD BE WILLING TO GAMBLE WITH AT 35
- Again, freedom of choice as long as the larger percent chance of getting money is over 52
- Again, personal superstition. Same statistical odds but my luck has already netted me with the worse option in the first example so I'll go ahead and retire with 47k a year in a small home in upstate with my dog Streeter and two non-dependent children.
- Again, you can see the other possible outcomes in the first one
- Although the probabilities are essentially the same, one requires taking two risks and the other is based on the outcome of only one risk; the second risk in the top is the probability of A|B, whereas the bottom is just a single spinner and seems "riskier", even though it is not.
- As an example, in the second scenario, there is a 100% chance of receiving $47,000 if I choose F in ACF, whereas in the first scenario I don't get to choose, it's completely random.

- BCE has a 50 percent chance of having <100000 in retirement while BDE only has a 25 percent change of getting <100000 in retirement. BDE, therefore, is the more logical risk.
- BCF HAS OPTION OF 141,000
- BDE has a different outcome I'd like to prevent
- BDE in the second option reduces the chance of making less than 50k to only 25%
- BDE is the same situation presented differently.
- BDE was not a risk I was willing to take (32,000 or 60,000 vs. 40,000 guarantee)
- BDF HIGHER CHANCE OF HAVING 141,000
- BDF IS MORE RISKY
- BDF MORE RISKY
- BDF has a negative outcome (64000) that I'd like to prevent
- BECAUSE
- Because I wasnt thinking. They both should have the samme answer. BCE was a better choice.
- Because of the difference in age
- Because of the difference in age and attitudes at the corresponding ages
- Because of the different percentages.
- Because of the way that the two questions are written. I felt that i was risking less.
- Because the layout is different in the more complicated webs. If you don't do the math the first options right box looks more complicated than it is
- Because the layout is different, if you don't look to see that the percentages of getting 135000 is the same in each, the second option looks too complecated
- Because the probabilities are different
- Because the probabilities are different and I would make more money from them being different
- Because there is the highest chance of getting 64,500 in the first scenario (50%). In the second scenario,
- Because they are the same
- Because they are the same
- Because they are the same
- Because they are the same
- Because you want to balance both risk and reward as well as being conservative
- Better option less risk
- C and D both would give me options greater than 100, so either one is fine. I'm free to change my mind.
- D is not guaranteed
- Despite similar probabilities, targeting the different figures of the outcomes led to different choices.
- For BDF, I have a 50% chance of getting 255,000 a year which I don't have if I choose BDE
- Freedom of choice, as long as chance doesn't involve 52
- Honestly, I have no clue.
- I am essentially comparing a guaranteed 75,000 vs. a 50/50 split between 60,000 and 112,500. The 112,500 is very appealing to me and the 60,000 would not represent too big of a loss. I would prefer DF here over DE since they are different.
- I can't see the top pair....

- I choose situations where I would have higher chances of getting over the conservative amount. The first comparison was too confusing though. The second comparison had a greater chance on 60,000 as opposed to 40,000.
- I felt like it
- I generally aim for around 100,000, so settling for less than that (around 72,000) is better than almost halving it (52,000). And if there is any chance that I may get 52, I'd rather get the next lowest as a garauntee
- I had more options in my F choice so I had more decisions to make overall than my E choice.
- I looked at the questions differently when parts were blacked out in comparison to being able to see all the options equally
- I made a different choice because in the first set, the 50% chance is much much higher than the second 50% chance number. In the second set, there are much more options and is safer.
- I makes sense to have different choices because the payoff is better with the ones I chose in 25% of the time.
- I realized that it does not make sense to have different choices in these two situations
- I realized that it does not make sense to have different choices in these two situations
- I realized that it does not make sense to have different choices in these two situations
- I realized the percentages actually add up to be the same even if they don't look like it at first.
- I realized they are the same!
- I should have chosen ACE over B
- I want to make different choices because in some options, the risk of choosing one over the other outweighs the conservative option with how much more the benefit is of the risky one.
- I was feeling conservative when I answered the first time, but not so much the second time
- I was right the first time.
- I was right the first time.
- I was right the first time.
- I was right the first time.
- I was right the first time.
- I was right the first time.
- If I chose a different answer it was because I was under the impression that choosing D also meant the outcomes of F were a possibility, as indicated by the identical circles around D and F.
- In ADF, the conservative selection gives me a guarantee higher than the lowest possible outcome. I wanted to switch it up.
- In choosing choice D, I looked at the entire picture of outcomes with respect to choices B, E, and F. In choosing choice C, it was a more isolated picture, and I made the riskier choice because of that.
- In one instance you are making choices at 35, while in another you are making them at 35 and also at 50. At 50 you are more conservative.
- In question 1, you have a 50% chance of also getting 36,000, so it's best to be conservative and have a 50% chance of getting 75000. For question 2, 50% chance of 75000 which is good, and 25% chance of either 54000 and 112,000, both of which are reasonable to live off of, so one can take the risk.
- In the 1st scenario, there was a 50% chance of receiving more than $50K, so I went for the more risky choice. In the 2nd scenario, it seemed like %50K was safer in the context of the choices CDEF.

- In the first ADE vs ACE, there are
- In the first example you have 50% at less than 47k and 50% at more. In the second, you can take the gambles and haev only 25% at less than 47k and 75% at considerably more. So choice D seems more appealing in the second one.
- In the first scenario, I was only choosing between two options for each branch, I wasn't choosing one entire path, as is the case in the second scenario.
- In the first set, I had both options available. But in the second question, it was either or.
- In the first situation indicates a 50% chance of making above 48,000 per year. The second situation shows a 75% chance of making over 46,000 a year. It makes sense to select choices based on the one that give you a higher chance of making the above the minimum amount.
- In the first situation there is a higher probability of getting $44,000 and in the second there is a higher probability of getting something higher than $70,000
- In the first situation, if i made it to path EF I would have chosen F because I lost money already. In the second choice it doesn't show that you lost.
- In the first situation, there is a higher likelihood and certainty that I will receive either 150k or 86k, while in the second situation there is a chance I will not.
- In the first you can see the other possible outcomes that may happen.
- In the second scenario, I'm making a separate decision at age 50 -- somehow that changed my mind (not sure why).
- It doesnt make sense but there is not an option for me to change only one answer choice.
- It makes more sense now
- It makes sense because of BCF' higher chance of making more money and I liked BCF in the first one because it was safer.
- It makes sense because of BDE's higher payoff
- It makes sense because of the difference in age.
- It makes sense because the payoff isn't that much in BCF with 129,000 but in the first set, the payoff is higher.
- It makes sense to choose differently because all four of these options are different. In the first set, BDF, has a higher 50% chance number than BCF and in the second set, BDF is safer in the first option but the same in the second. I probably would have a stronger preference when choosing between the first set rather than choosing between the second set.
- It makes sense to have different choices because in the first, there is a 50% chance of getting either 129,000 or 225,000 so it's highly likely i will end up with more money with this choice. In the second
- It makes sense to have different choices because in the first, there is a 50% chance of getting either 129,000 or 225,000 so it's highly likely i will end up with more money with this choice. In the second
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- It makes sense to have different choices because of the higher payoff.
- It makes sense to make different decisions based off the risks associated
- It makes sense to take more risk at the age of 35 than the age of 50
- Looking at everything together vs some parts greyed out tricks the mind
- My luck has already been mediocre in the first example, no need to push it any more. I realize that statistically this is a subjective answer but hey, I can still live comfortably on 47k.

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- My overall goal is generally 100,000, so if all choices are above, I don't mind the risk
- Not sure
- One of them offers you 25% of getting 225,000 while the other offers you 50% of getting 150,000
- One plan has 50% chance of 150,000 while the other is 50% of 94,000
- Potential gain outweighs risk
- Risk factors.
- SAME AMOUNT
- Second option where I chose BCE over BDE had a greater chance for a larger sum upon retirement
- Seeing 50% over 25% makes one think the odds are better.
- Seeing the 50% makes ones think their odds are greater, but seeing 25% makes choice B better than ACF
- Since they have a 75% chance each of getting 129K + It doesn't matter to me
- The E or F decision is different.
- The chance of each scenario happening is actually the same. They're just presented in different formats.
- The different answers come because you added in age 50, at which age you are more conservative.
- The expected values for a 25% chance of getting 112,500 and 72,000 does not equal a 50% chance of getting 75,000
- The first choice you see the 50% and the second set of choices you see the lowest amount you can end up with.
- The first comparison reflected making the more conservative choice, but it was still favor me getting over the conservative 50,000. I took more risk in the second comparison because at worst, I would end up with 40,000 (as opposed to 32,000).
- The first comparison was very confusing. The second comparison had a greater emphasis on the higher amounts.
- The first decision one looks at the percentages, where 67 > 45. The second decision one noticed the lowest amount you could end up with 40<45.
- The layout plays with your mind
- The layout plays with your mind
- The layout plays with your mind
- The layout plays with your mind
- The layout plays with your mind
- The layout plays with your mind
- The layout plays with your mind
- The payoffs are different
- The percentages are different. My chances of higher income at retirement changes (in some cases) from 50% to 25%
- The probabilities are different in both seperate questions for ADE.
- The prospect of earning 112,500 in the first comparison was very appealing and the risk was ending up with 40,000 in the worst case, which wasn't too bad to me. The second comparison had a de-emphasis on the lowest amount (32,000) which was appealing to me.
- The scenarios are different

- The second choice represents a 25% chance of making both 72,000 and 46,000. The expected value of those chances do not equal 48,000.
- The second includes option spinner B|spinner A; the overall chances are the same, but in practicality it is less stressful
- The second question gives more options for conservative pay, which I am more comfortable towards. I am keeping my choices the way they are
- The spinners play with your mind
- The top BDE has a better chance of pushing me toward the higher earning bracket. The bottom BDE has a greater chance of pushing me to the lower bracket.
- The top choice I made gives me 75% chance of earning more versus 50%. The bottom choice I has a better chance of earning more.
- The two scenarios are different. There is a higher chance of getting above the 50,000 conservative amount in the second comparison, but a higher risk of ending up with only 32,000 instead of 40,000.
- The two situations are different. I choose BDE because it has a higher chance of exceeding the conservative amount, but the thought of only having 32,000 is quite scary.
- There are different probabilities of the amounts
- There are more opportunities (chances) in choice F. My answer would have to change.
- There is 25% of probability of getting 25% of 64,000 and 25% of probability of getting 25% of 120,000 in BDE. While in BDF 50% of getting
- There is more of a chance of a reasonably positive out come in the first
- There is more of a chance to get a higher amount in the BDF choice
- There is more to be considered in the frame work of the choices below so, it is safer to go with ADF over ADE.
- This is to different attitudes at various times in ones life.
- This is to different attitudes at various times in ones life.
- This is to different attitudes at various times in ones life.
- This is to different attitudes at various times in ones life.
- This is to different attitudes at various times in ones life.
- This is to different attitudes at various times in ones life.
- This is to different attitudes at various times in ones life.
- Took into account the risk factors and chose accordingly
- WHEN I'M CLOSER TO RETIREMENT I WANT A HIGHER GUARANTEED AMOUNT
- When I chose BDE over BDF I did so with the mindset that I had a 75% chane of making $144,000 or more, while with BDF I had a 50% chance of making $144,000 and only a 25% chance of making 225,000. I thought that I'd be less disappointed if I could only make up to $150,000 and was unlucky. When I chose BDF over BDE I did so because of the way the question was set up.
- While probabilities of possible outcomes are the same, the $ figures vary.
- With the introduction of a split between 44k and 70k it makes more sense to choose ACE ... better chance to earn more
- Without the age 50 decision, I chose a simpler options so that in the 30 year intermediary period I could best manage expectations and expenses for retirement.
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- Without the age 50 decision, I chose a simpler options so that in the 30 year intermediary period I could best manage expectations and expenses for retirement.
- Without the age 50 step, you have more time to plan and it may make more sense to alter your choices accordingly.
- Without the intermediary step at 50, I chose the more conservative option at 35 because the greater period of time between would allow for better management of expectations and expenses in retirement.
- You can see other possible outcomes in the first one
- You get to make the choices in the first part so they're different questions
- You have 25% of getting 120,000 in BCF while in BDF you have 50% of getting 120,000.
- You have a 50% chance to make above 48,000 in the first option while you have a 75% chance to make above 46,000 in the second option
- You will have 25% of getting both 120,000 or 225,000 in BCF while in BDE you can get a chance of 50% getting 150,000.
- already was asked this.
- because although the situations are exactly the same- people may choose differently based on what appears to be different percentages. if that makes sense- people will make different choices depending on how certain investment plans are presented to them
- because there is a 75% chance of making at least 70k
- consistent with my prior reasoning. the only thing that has changed is depicting the choices with greyed out information. I already stated my choices were independent of this information, for better or worse.
- consistent with my prior reasoning. the only thing that has changed is depicting the choices with greyed out information. I already stated my choices were independent of this information, for better or worse.
- diff amts at stake
- diff amts at stake /chances
- diff amts diff stakes
- diff chances and diff amts at stake
- diff chances diff amts
- different chances and opportunity to win diff amts
- different chances, i would pick D
- ev diff.
- ev diff.
- ev.
- exact same reasoning as last question, except explanations for pair 1 and pair 2 are flipped.
- freedom of choice, I can live with the risks
- i would choose bottom ADE
- in ADE there is a chance to make more
- in the case, for E, the choice has been made at age 50 but for choice f, the choice is yet to be made.
- in the first there is a 50% chance I will get something higher than $70,000. In the second option BCF lowers those options by pairing it with the $47000
- its only $6,000 for the possibility of $150,000
- more options in the

- my choice seems better
- new choice seems better
- new choice seems better
- new choice seems better
- new choice seems better
- new choice seems better
- new choice seems better
- no
- no idea
- one of the three outcomes for BCE and BDF are different
- potential gain outweighs risk
- the 25% of make 112500 a year is only worth it if it is balance with something in the 70k range
- the chance of getting 96000 dollars at age 50 is greater than risking that money
- the first one is more complex than the second one
- the outcomes are totally different for BDF and BCE
- the second option has a 50% chance of getting 120000
- the way the spinner is set up in the first answer choice. it implies that each chance is occuring independently
- there's more risk from smaller probability in the second question compared to the first
- they
- they
- they both have the same probabilities so the choices should be the same
- to make the 50% chance of getting 75k
- with CF, I have a chance of getting 225000
- you are more likely to gain more this way

1.2 Placebos

1.2.1 Responses from July 2013
- $47,000 and $50,000 are not very different, so I thought it was worth risking.
- $6,000 risk for potential $50,000 gain is OK
- $6000 risk for an over 100% gain is worth it.
- $70,500 is also a decent amount, and there are also 50% chance that I can get very high income.
- $70,500 is plenty to live on with the given parameters. So, I am happy to risk $4,500 for the chance at $112,500/yr.
- $88,000 is not an amount that is significantly lower than $100,000. Therefore, it is worth the 75% chance that a much larger amount might be obtained.
- %50,000 and $47,000 are not very different, and my choice has 50% chance that I can earn more money than %50,000.
- 0.2*(112500+70500)>75000, 0.5*(70500+44000)>47000.
- 141k and 150k both above 100k and close enough in value that risk is worth potential 225k payout
- 3000 does not really seem like a lot in comparison to the possibility of an additional 25000 dollars in the risk

- 50 percent chance of earning 141000 versus 50 of earning 94000
- 50% I get more than 100,000
- 50% chance of having 141,000 or a 50% chance of having 94000. Seems clear to me.
- 50% chance of increasing money by almost 50% while 50% of loosing 6%. Worth the risk.
- 6,0000 risk for a 50,000 gain was a gamble I could take.
- 6k penalty worth risk of 40%+ increase in payout
- 75% chance of getting a sum thats greater than 100,000
- 75% chance of getting more $$ than 50% chance of 94,000
- 75% combined chance to have a sum greater than 100,000
- 75% of greater than 88000, while the other choice is 100000 gauranteed. Risking 12% for a nearly 40%, with those odds, is worth the risk.
- 75% of over 141,000. As opposed to a 50% of 141000. while only maintaining 25% chance of 88. Better chance to have more.
- 75,000/yr is enough big.
- 94K is the lowest it will go. I can live with that
- A higher sum is available in each scenario, and the minimum sum is higher as well. $94,000 is not a significantly lower sum to justify shying away from the slightly higher chance of getting that amount.
- ACE had a better expected value
- ACE had better expected value
- ACE has better expected value
- ACE has better expected value
- ACF had a better expected value
- ACF has a better expected value
- ACF in both questions are going to give you the same amount of expected gains.
- ACF means 25% $225000, 25% $141000 and 50% 94000; ADE means 50% 150000, 25% 141000 and 25% 88000. Expected value of ACF is higher.
- ACFs always have a higher expected value than ADF. Two choices are exactly the same. You get 25% $112,500, 25% $70,500, 50% $47,000.
- ADE has better expected value
- ADE in both choices are going to give you the same expected gain in both cases.
- ADE in both questions are going to give you the same amount of expected gains.
- ADF has better expected value
- ADF has more upside. It has higher expected value. The downside has only $3,000 margin, which is comfortable with me.
- After I did an approximate calculation, both BCF give me more returen.
- After I do an approximate calculation, both BDF can give me more return.
- After compiling possibilities they are the same choice
- After compiling possibilities they are the same choice.
- After compiling the possibilities both choices seem to me the same
- After weighing the risks, I made the decision that was best for me based on the lifestyle I will want.
- Again looks different but the choice is the same - 50% of the 94 value or 25% each to higher choices; I preferred this over the equal shot at 94 or 150 because the lowest possible value wasn't any worse AND you had the chance of getting the prize of 225.

- Again, I have a 75% chance of receiving at least 141,000 a year and I thought it was worth the risk compared to 100% chance of receiving 100,000/yr.
- Again, I liked the pay-out considering the odds. I could gain nearly 50,000 or lose 6,000.
- Again, although formatted differently, in both cases BDF results in 50% receiving 70,500 and 25% in receiving either of the other two options.
- Again, both choices are identical
- Again, it's about how much I am willing to lose and how much I would ideally like to end up. That is why I am not a big fan on the conservative options. Loosing 3,000 won't be as a big deal as winning 40,000 more.
- Again, same thing, different complexity of flowchart. It might matter if I had actually lost money/was older so that I would care that I lost a chance at more money and may lose more, but I have not emotional attachment to it now whatsoever.
- Again, same thing, different flowcharts.
- Again, totally fine with taking that potential 6k cut for 50k. Could live quite comfortably on a retirement the size of a normal salary.
- Again,140,000+ is significantly more than 88,000/100,000 and choice ADE gives 25% of getting that large amount to money.
- All possibilities are above initial allowance of $100,000. $9,000 penalty for taking a chance on $225,000 seems okay.
- Although formatted differently (i.e. two spinners instead of one), the odds end up being exactly the same because 50% of 50% is the same as having 25% from the start.
- Although it has 1/2 chance of spending $94,000/yr, it has 1/2 chance of spending more than $100,000/yr.And the amount of money is much more than $100,000/yr.
- Although there was a 50% chance that I would receive lower than the 100,000 I would make in the more conservative option, the 94,000 I would make in ACF is comparable to the 100,000 I would make in option B, and the possibility of receiving 225,000 or 141,000 enticed me into choosing ACF.
- Although there's 50% chance of earning less than A, 94000/yr is still not bad. I also have 50% chance of earning more, which is 150,000/yr
- Amounts higher in both scenarios. i.e. probability of getting $112,500 exisits
- Averages, sirs Benjamin and Kimball.
- B is for boring. plus 75% chance of having more than 100k
- BCE in both cases would give you 50% chance of getting 47000 dollars and 50% chance of getting 75000 dollars while A in both cases would give you 50000 dollars per year.
- BCF has a higher least amount and a higher largest amount than BDE.
- BCF in both cases would give you the same chances of receiving one of the given choices of dollars, and the chance of getting 50,000 dollars per year when choosing A is also same in both cases.
- BDF has 100% chance of offering a value over $88,000
- BDF in both cases would give you 25%,50%, 25% chances of receiving 44,0,70,500, or 112,500 dollars respectively, in contrast to A, which would give you 50,000 per year in both cases.
- BDF in both cases would have given you the same amount of expected gain and BCE in both cases would also have given you the same amount of expected gain.
- Because $88000 isn't sufficiently lower than $100000, but either $150000 or $141000 is sufficiently higher.
- Because C seems to be the best choice for me in both situations.

- Because I am making decision for my years after 65 in both situation.
- Because I will have a chance to get 225,000/yr. And even if I can only get 141,000/yr, I can still live comfortably after my retiring.
- Because both graphs actually show the same process.
- Because either choice will give the same result, which is 50% of 225K and 50% of 141K.
- Because even though they appear differently visually, you end up with equal shots at the higher value from 65 on - I liked BDE over BCF because the most likely scenario (50% chance) was a higher take home 150 vs 94.
- Because if i choose ACF, i wll take the risk of spending $225,000/yr.
- Because in both cases, choosing ACF gives me a 25% chance of getting $225000
- Because in the end, all of the percentage distributions equal the same, regardless of which way you got there.
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- Because in the end, all of the percentage distributions equal the same, regardless of which way you got there.
- Because in the end,150,000 has a 50$ chance,141,000 has a 25% chance and 88,000 has a 25% chance. There is no difference in percentage likelihood.
- Because it has 1/2 chance of spending $225,000/yr, which is much more than $150,000/yr.
- Because it has 1/2 chance of spending $141,000/yr, which is more than $94,000/yr.
- Because it has 1/2 chance of spending $141,000/yr, which is much more than $94,000/yr.
- Because it has 1/2 chance of spending $150,000/yr,which is less than $225,000/yr.
- Because it has 1/2 chance of spending $94,000/yr in ACF and 1/2 chance of spending $141,000/yr in ACE, It will cost me less if i choose ACF.
- Because it has 1/4 chance of spendig $225,000/yr, which is much more than $100,000/yr.
- Because it has 1/4 chance of spending $225,000/yr in ACF, it is much more than spending $150,00o/yr in ADE.
- Because it will have 1/4 chance of spending $225,000/yr if I choose ACE, it is much more than $150,000/yr so i will not take the risk of ACE.
- Because its 50% of 141 or better with an added bonus of 25% of increasing by 50%.
- Because of more choices. Instead of going for conservative, which is only $3000 more than the lowest amount i will be getting if i choose E
- Because of probability difference

- Because of the chances of getting a higher amount i.e. $112,500
- Because the biggest percentage being a higher $ amount sways me
- Because the chances of getting a higher per year value i.e. $112,500 is equal in both cases and the other amounts are equal too.
- Because the conservative money amount is not much less than the lowest possible money, I would take the 50/50 chance for a shot at more money. At the age of 35, I can still be risky and take chances.
- Because the expect value of DF is higher than the conservative choice
- Because the expected value is higher is the ADE case scenario.
- Because the expected value of each outcome is the same
- Because the lowest possible payout is $94k either way.
- Because the probabilities are the same.
- Because the results will be similar, which is 25% 225K, 50% 141K, and 25% 88K
- Because the two choices both represent 50% chance of getting 44,000 dollars per year and 50% chance of getting 70,500 dollars per year.
- Because there is a high possibility of getting more than 100,000, so it makes sense to take the risk
- Because these two graphs show the same process. All the probabilities and outcomes are the same.
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- Because these two graphs show the same process. All the probability and outcomes are the same.
- Because they are the same questions
- Because they give the same result.
- Because they looked different but they were the same scenario where you avoided the risk of getting only 88K though the most likely scenario was to get less money in total (94 vs. 141).
- Because they will give the same results

- Because while you have a 50% chance of getting 3,000 dollars below $50,0, you also have a 50% chance of getting much higher than the conservative rate.
- Becuase it has just 1/2 chance of $150,000/yr.And it has 3/4 chance of spending less than $150,000/yr.
- Better expected value
- Better expected value for C
- Better potential payout.
- Both D and F involve taking a risk in which the reward has a 50% chance of being much more than the conservative option, and a 50% chance of being just a little less than the conservative option
- Both outcomes are identical
- Both questions present options whose outcomes have the same probability occuring
- Both scenarios are the same so the expected outcome is the same, thus the same decision for both scenarios.
- Both situations have the same odds. In both situations, A results in guaranteed 50,000 and BCE results in 50% of the time 47,000 and 50% of the time 75,000.
- Chance at 225,000 seems more appealing/worth the risk.
- Chance at a higher payoff
- Chance at a higher payoff.
- Chance at a higher payoff.
- Chance at a higher payoff.
- Chance at a higher payoff. Risk was negligible.
- Chance at a higher payoff. Risk was negligible.
- Chance at a higher payoff. Risk was negligible.
- Chance at a higher payoff. Risk was negligible.
- Chance of a lower payoff is lower.
- Choice E in both situations would give you 75,000 dollars per year and Choice F in both would give you 50% chance of getting 70,500 dollars and 50% chance of getting 112,500 dollars per year.
- Choice F in both choices would give you the same chances of receiving either 70,500 dollars or 112,500 dollars and Choice E in both choices would give you 75,000 dollars per year.
- Choosing something that may end up losing 6 thousand but also having the possibility of gaining 20000 is worth the risk
- Closer question. But 75% getting 141 and up on both sides. Better risk to cost ratio on the BDF
- Compared to the conservative, the gain outweighs the loss
- Considering probability and value of outcome C, in both scenarios, it was the more attractive one.
- DF in both cases would give you the same expected gain.
- Difference between conservative amount and 50/50 chance of more is not enough to dissuade me from taking the chance
- Different choices, different circumstances.
- Different circumstances warrant different choices.
- E(x) is the same between both choices
- E/F seems to me irrelevant to choice in C/D
- Each offers the same probability.
- Each one has the same probability of getting the same amount of money for retirement.

- Each scenario is identical.
- Equal chance of each outcome
- Even though one option gives you a choices at two points in life, I think the chances are better than certain 50,000.
- Even though the choices are at different ages, each provides a 75% chance of getting at least $70.5k.
- Even though there is a 50% chance of getting 75000 in BDE, I still like the idea of the 25% chance of getting 112,500 dollars
- Expected Value is the same
- Expected Value is the same
- Expected Value is the same
- Expected value is the same
- Expected values are the same
- Expected values are the same in both situations.
- Expected values were higher in both situations
- For me, the chance of getting 88K, 94K, 141K are not very different between choices, so I would like to take a risk of trying to get 225K. In the second situation, even I will lose the chance of getting 150K for sure, I will get a 25% of receiving 225K. It worth it for me.
- Going with C and then E seemed to be more strategic in that I minimized the chance of receiving $44,000 to 25%.
- Greater chance of more $$ than the conservative 94,000.
- Having the direct choice of 50,000 seemed like a safe bet.
- High expected value in ACF scenario
- Higher amount $112,500
- Higher amount $112,500
- Higher amount $112,500
- Higher avg. for ACE.
- Higher expected amount. I can put up with the downside regarding its amount and probability.
- Higher expected value
- Higher expected value in ACE scenario
- Higher expected value in ACE scenario
- Higher expected value in ADE
- Higher expected value in ADE
- Higher expected value in ADE scenario
- Higher expected value in E than F
- Higher expected value.
- Higher expected value.
- Higher expected value.
- Higher expected value.
- Higher expected value.
- Higher expected value. I can put up with $44,000/yr regarding its amount and probability, and I have 25% chance to get much higher amount than $47,000/yr.
- Higher expected value. Two ACEs are the same.
- Higher probability of getting a higher amount
- Higher risk reward

- However there is 1/2 chance of spending $94,000/yr, there is 1/2 chance of spending more than $100,000/yr. And the amount of money($225,000/yr and $141,000/yr) is much more than spending $100,000.
- I agree with my choices.
- I am making decision for my years after 65 in both situations.
- I am making decision for my years after 65 in both situations.
- I am making decisions for my years after 65 in both situations
- I am making decisions for my years after 65 in both situations.
- I am making decisions for my years after 65 in both situations.
- I am making decisions for my years after 65 in both situations.
- I am making decisions for my years after 65 in both situations.
- I am willing to risk my choice for the reward.
- I am willing to take the risk of getting $3,000 less by opting out from the conservative option in order to get more with Plan E.
- I can live on 94 K
- I can live on 94K
- I can receive more money even there is only 25% to get
- I chose ADF because the chance of gaining 50,000 is equal to the chance of losing only 6,000 when compared to the guaranteed option B
- I chose BCF over A in both originally.
- I chose BDE over BCE in both originally.
- I chose C in both instances because I have a 50% chance of getting the $112,500 plan, which is forty thousand dollars more. So I am making a risk to get $40,000 more or lose $5,000. I'm willing to bet the five thousand on the forty thousand.
- I chose the options that could lead me to the highest possible retirement fund.
- I chose the same because I had a 50% chance of getting a lot more, and a 50% chance of only getting slightly less than the conservative amount.
- I chose the same because the same amount was at risk for losing.
- I chose this option because of the 25% chance of making 225,000.
- I considered them as the same scenario.
- I considered them as the same.
- I did not want to render to the conservative options because it is boring, and there are no possibilities of getting more Benjamins
- I don't like the risk of getting 88,000
- I felt that the possibility of losing 9,000 was worth the possibility of gaining 75,000.
- I get a 50% chance of receiving 225,000/yr. And 141,000/yr is acceptable
- I have 50 and 50 percent chance to receive 88K and 141K. While I can receive 94K for sure, 88K is not very different to 94K, and moreover, 141K is much more than 94K. I would like to take a risk.
- I have the chance to get the highest amount.
- I have the exact same possibility to receive same amount of money under these two situation.
- I ignored C/D when I am choosing between E/F
- I ignored C/D when I am choosing between E/F
- I ignored C/D when I was choosing between E/F
- I like taking risks.

- I like that you have a higher probability of getting a 50% payout of $150K with option ADE even though there is the 25% change of getting $88K.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I liked the chance of receiving more
- I looked at it as having a better chance of getting more than the 94000 in ADF by looking at 141 and 150 as favorable outcomes from ADE
- I made the SAME choice in the bottom question because I was asked the SAME question, just presented differently.
- I made the SAME choice in the bottom question because I was asked the SAME question, just presented differently.
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- I made the SAME choice in the bottom question because I was asked the SAME question, just presented differently.
- I made the SAME choice in the bottom question because I was asked the SAME question, just presented differently.
- I opted for DR becuase I had a good chance of ending up with >100,000 - I liked my odds of trying for something higher rather than sticking with the guaranteed 100,000.
- I prefer BDE because there's a large chance to get 150,000
- I prefer the chance of a higher payout.
- I prefer the chance of a higher payout.
- I prefer the chance of a higher payout.
- I prefer the chance of a higher payout.
- I prefer the chance of a higher payout.
- I prefer the chance of a higher payout.
- I prefer the chance of a higher payout. I set 90K as my threshold for risk taking.
- I prefer the choice with 25% of receiving 225K.
- I prefer the situation that I can receive enough money like 75,000/yr.
- I prefer the situation that I have options.
- I prefer the situation that I have possibilities to receive more than 50,000/yr.
- I prefer the situation that I have the possibility to receive bigger amount of money.
- I prefer to have chance to win more money

- I think
- I think
- I think between choosing E or F, the risk of F is worth taking.
- I think the more branching there is, than the probability of getting the lowest amount of money is reduced by half and that way my chances of getting the most money in the end will be higher.
- I think the risk in F is worth taking.
- I think the risk is worth taking
- I think the risk is worth taking
- I think the risks overall are worth taking
- I want to have a chance to get more money
- I want to have higher income, so I have never thought of the choice A. Then the situations are the same. I always prefer the choice of higher probable income. I am willing to take the risks.
- I want to win more money
- I was enticed by a 50% chance of making nearly 50,000 more. If I lost, I would only be losing 6,000 a year so I figured it was worth it.
- I went for the riskier option because it had a possible higher outcome
- I went for the riskier path because of the good chance o getting more than 100K, so even when the conservative route was offered at 35 I was not interested.
- I will spend less money if I choose the conservative (exactly 150,000/yr)
- I would actually change to ACF. I prefer the minimum with the chance for more.
- I would make the same choice because the options are so similar. In both situations I would like the chance to have 70,500/yr
- I'd rather take 94000 for sure than risking 88,000
- I'm given a 50% chance at 141,000 a year with a 25% chance of 225,000 a year. I liked these odds/outcomes the most.
- I'm not conservative, and both probabilities are same
- Identical chance of each outcome
- Identical probability for identical values
- Identical probability of each respective value
- Identical probability of getting each value
- Identical situations
- Identical situations
- Identical situations
- If 94k is min, playing with 100k+ values no big deal
- If I chose C, then the 50/50 chance is the same no matter what other chances exist in the periphery or in other potential-choice worlds.
- If I chose the less conservative option, the worst I can do in both situations is make $3000 less per year (50% chance), whereas the reward of making at least $20,000 more would far outweigh the risk.
- If i choose ACE, it has only 1/4 chance of spending $88,000/yr,which is less than $100,000/yr. However, there is 3/4 chance of spending $141,000/yr and $225,000/yr, which is more than $100,000/yr.
- Ignoring 94,000 branch (it seems irrelevant in my mental accounting), I prefer choice ACF since it gives possibility to get 225,0, while 141,000 is not a bad result at all.

- In BDF, there is a higher chance of getting a higher amount of money, whereas in BCF, there is a much higher chance of getting the lower amount of money.
- In both BCE choices, there was a risk that had a 50% chance of a reward much bigger than the conservative, and a 50% chance of a reward a little smaller than the conservative.
- In both BCF choices, there was a risk that had a 50% chance of a reward much bigger than the conservative, and a 50% chance of a reward a little smaller than the conservative.
- In both BDE choices, there was a risk that had a 50% chance of a reward much bigger than the conservative, and a 50% chance of a reward a little smaller than the conservative.
- In both D choices, there was a risk that had a 50% chance of a reward much bigger than the conservative, and a 50% chance of a reward a little smaller than the conservative.
- In both F choices, there was a risk that had a 50% chance of a reward much bigger than the conservative, and a 50% chance of a reward a little smaller than the conservative.
- In both cases you have 25% chance of getting 44,000 dollars, 50% chance of getting 70,500 dollars per year, and 25% chance of getting 112,500 dollars per year if you choose BDF. And BDE also would give you the same amount of expected gain in both cases.
- In both cases, I went with the best possible outcomes. Plan ACF had the highest possible outcomes.
- In both situations I chose the option where I thought I could get the most money and there is not too much of a difference in the amounts if I were to get the lesser option
- In both you get the chance to get over 100,000 per year
- In each case I was tempted by the 75% chance of getting > 100K so I was willing to take the risk of ending up with only 88K.
- In either case you have made it to the best possible choice of E or F instead of C or D. Since you only lose a little compared to what you could gain, it is worth going with the less conservative option.
- In this case, BCF seemsmore enticing. I must not have paid as close of attentioin because there is a higher amount in BCF, which makes it more enticing
- In this case, I would stay with ACF. It has everything to do with the minimum I can imagine living on. I am happy to risk $3,000 for the chance offered in ACF, as long as the minimum is $47,000.
- In this particular instance, it seems worthwhile to take a chance. You can either lose out on $6k or gain $50k.
- In this situation, I am given a 75% chance of making at least 141,000 a year which I find to be the most attractive option.
- It is the exact same thing represented differently.
- It is the same choice, juust presented differentlyu
- It is the same choice, juust presented differentlyu
- It is the same option (the only difference is the way the circle is shaded).
- It is the same option, only you explained differently. In one, you have a 50% chance of getting more than 47,000 and the other 50% chance is getting 47,000.
- It is the same option. You start with 100 and once you start splitting that into halves and halves of halves you end up with 25%, 25% and 50% which = 100%
- It is the same probability in each - 25% $44,0, 50% $70,500, 25% $112,500.
- It is the same prompt, just presented differently. There is still the same amount of chance of getting the lower amount of money, but there is a much higher chance of getting nearly double the amount of money.

- It is the same situation and I thought that option C was preferable to D due to a higher payout chance.
- It made sense to choose D because the situations are similar and I wanted the chance to get more than 47,000$
- It makes sense to have different choices.
- It makes sense to have different choices.
- It makes sense to have the same choices.
- It makes sense to keep the same choice in both scenarios because the situations that you are in are identical. You have the same amount of choice.
- It makes sense to make
- It makes sense to make
- It makes sense to make choice because it gives you a higher chance of getting more money when you retire.
- It makes sense to me because in both C and E I would be gaining more than I would be loosing.
- It makes sense to take the risk as the risk is very small compared to the reward.
- It makes sense to take the risk as the risk is very small compared to the reward.
- It makes sense to take the risk as the risk is very small compared to the reward.
- It makes sense to take the risk as the risk is very small compared to the reward.
- It makes sense to take the risk as the risk is very small compared to the reward.
- It makes sense to take the risk as the risk is very small compared to the reward.
- It makes sense to take the risk as the risk is very small compared to the reward. There is only a 25% chance of making slightly less than the original 50,000 dollars while there is a much larger chance of making significantly more.
- It makes sense to take the risk as the risk is very small compared to the reward. There is only a 25% chance of making slightly less while there is a much larger chance of making significantly more.
- It makes sense to take the risk as the risk is very small compared to the reward. There is only a 25% chance of making slightly less while there is a much larger chance of making significantly more.
- It makes sense to take the risk as the risk is very small compared to the reward. There is only a 25% chance of making slightly less while there is a much larger chance of making significantly more.
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- It makes sense to take the risk as the risk is very small compared to the reward. There is only a 25% chance of making slightly less while there is a much larger chance of making significantly more.
- It makes sense to take the risk as the risk is very small compared to the reward. There is only a 25% chance of making slightly less while there is a much larger chance of making significantly more.
- It minimizes the chance of getting the lowest amount.
- It minimizes the chances of getting the lowest amount.

- It shows that I will have chance to get more money
- It's asking me the same thing
- Its almost the same
- Its the same, more choices
- Its the same. More choices
- Looking back if offered I would have chosen F in the top scenario, but I'm not sure if that was an option at the time.
- More choices, and almost same option of earning higher and lower
- More choices, and higher figures.
- My choice allows me to earn $112,500 with 25% chance.
- My choice minimizes the chance of getting the lowest amount
- My choice minimizes the chance of getting the lowest amount.
- My choice minimizes the chances of getting the lowest amount.
- My choice minimizes the chances of getting the lowest amount.
- My choice minimizes the chances of getting the lowest amount.
- My main motivation in picking ACF was that the lowest value possible is minimal compared to the possible gain when compared to B
- Never play conservative.
- Once again, it is the same choices and same probabilities.
- Once again, the probabilities work out to being the same in each case. BDE in both cases has a 25% chance of getting $44k, a 25% chance of getting $70.5k and a 50% chance of getting $75k. And, BCF in both cases has a 50% chance of getting $47k, a 25% chance of getting $70.5k and a 25% chance of getting $112.5k.
- Options C or D would result in 70,500 at the highest if selected (and only 25% of the time). Options E and F are automatically favorable to that because in both cases, you would be receiving 70,500 at the least.
- Other decisions do not affect current one.
- Overall odds are better.
- Payout was similar, safer odds.
- People forget what they chose before
- Probability of getting a higher amount is higher in ACE
- Regardless of knowing options C and D, I thought F was a better choice than E
- Risk at 35, safe choice at 50
- Risk at 35, safe choice at 50
- S.O.D.P
- Same amounts in questions should have the same answer to be consistent.
- Same as last question
- Same as last question
- Same chance of each outcome
- Same chance of each outcome
- Same chance of each outcome
- Same chance of each outcome
- Same chance of each outcome
- Same chance of each outcome
- Same choice in each question is going to give you the same amount of expected gains.

- Same choice presented in the same manner minus extraneous details.
- Same expected value in terms of C/D choice, but higher expected value in the E scenario than F
- Same expected values
- Same graphs and the odds are in my favor to gain more than the conservative
- Same likelihood of outcomes is represented.
- Same models and 50% chance of getting 141000 versus 94000
- Same percentages
- Same percentages
- Same percentages
- Same percentages
- Same percentages in both
- Same percentages in both
- Same percentages in both
- Same percentages in both
- Same percentages in both choices (same questions)
- Same probability
- Same probability for each outcome
- Same probability of each respective outcome
- Same probablities, same number of choices.
- Same probablity, more choices. I would take the risk
- Same question
- Same question, formatted differently
- Same question, formatted differently
- Same results
- Same results
- Same results
- Same results
- Same results.
- Same situation
- Same situation in each
- Same thing
- Seemed like the most favorable.
- Similar payoff at similar odds.
- Similar payout options, with better potential to maximize (at 225,000).
- Similar results
- Since the lowest possible amount i could make in path E was only 6k less than what i would make in option F, and i had the possibility of making much more than what i would make in option F, i decided it was worth the risk. The age at which i made the decision did not affect my choice.
- Since there was a 50% chance of making a much higher amount in option E than the conservative amount in option F, and the lowest possible amount i could receive in option E was comparable to the conservative amount, I decided that it was worth the risk.
- Situations look similar to me.
- Statistically, the BDE and BCF choices are identical within each other.
- Statistically, the BDE situations are identical.

- Still the same chance in both of them (25% for 225, 25% for 141, 5%0 for 94)
- THE BOTTOM LIMIT THE 50% CHOICE OF MONEY IS TOO CLOSE TO THE CONSERVATIVE AMOUNT TO CHOOSE THE CONSERVATIVE NUMBER
- THey are the same question, formatted differently
- Taking risk at age 35
- The ACE choice in both questions is essentially asking the same thing. Basically you have a 50% chance of receiving $141K or a 25% chance of the other two options. I like the possibility of having a higher payout.
- The F choice has higher expect value than the conservative choice
- The ability to make at choice at age 50 does not affect the second choice because at age 35 you are already stuck with 50,000.
- The amounts are higher
- The are the same question, just shown differently.
- The bottom retirement rate is not that far below the conservative rate. By choosing ACF,I have the chance to increase my retirement fund significantly.
- The chance at a lower payoff is lower and the chance at a higher payoff stays the same.
- The chance for the top dollar conservative is the same but there is also the chance to earn a sizable second place if you will
- The chance of losing 12,000 is worth the risk of potentially gaining 50,00 when comparing BDE and A.
- The chance to get the same amount of money is same
- The chance to get the same amount of money is the same.
- The chances are still the same - 50% for 150, 25% for wither 141 or 88, worth the risk
- The chances are the same
- The chances are the same
- The chances are the same.
- The chances are the same.
- The chances of getting a higher amount were great (over 75%), that it was worth the 25% chance that a slightly lower amount might be obtained.
- The chances of getting one of the given choices of dollars are the same in two cases, so they are basically the same questions.
- The choice at age 50 does not affect my choice because in both B options you are stuck with 50,000 from age 35
- The choices are pretty much the same.
- The choices are the same.
- The choices are the same. Grayed out parts are sunk.
- The choices are the same. Grayed out parts are sunk.
- The choices are the same. Grayed out parts are sunk.
- The choices are the same. Grayed out parts are sunk.
- The choices are the same. Grayed out parts are sunk.
- The choices are the same. The grayed out part does not matter.
- The choices are the same. The grayed out parts are unchangeable.
- The choices are the same. The grayed out parts are unchangeable.
- The choices are the same. The probabilities are just split up differently.
- The choices are the same. The probabilities are just split up differently.

- The conservative choice was not that far from 47,000 which was the lowest amount so I think it would be fine to gamble on my chances of a higher amount.
- The end result will be the same. The presentation in the first question is more consolidated, though.
- The end result will be the same. The presentation of the first question looks better.
- The end result will be the same: there will be a 50% chance of obtaining $70,500 a year, 25% for $112,500, and 25% for $44,000
- The except value of F is higher than that of D
- The expect value of BDE is higher than BCE
- The expect value of BDE is higher than BCF
- The expect value of D is higher than that of C
- The expect value of DF under the choice B is higher than that of CE
- The expected gain of BDE in both cases are the same, and that of A are also the same.
- The expected gain of each choice in both cases are the same.
- The expected payoffs are equal
- The expected payoffs are the same
- The expected value in ACF is higher than the ADE. Alternatively, ACFs have more upside and less downside.
- The expected value is higher in the ACF case.
- The grey area seems to me irrelevant.
- The highest you can go for bothis 150K But in ADE you could go to 88K
- The lowest I can go is 94K. And an opportunity to go to 225,000
- The lowest amount in ACF, is higher than the lowest ACE amount.
- The lowest amount in BCF is 94,000, which is higher than 88,000. The probability of getting a very hight amount is the same here. I prefer 50% 94,000+25% 141,000 rather than 25% 88,000 +50% 141,000
- The lowest amount is higher in both cases
- The lowest i could possible make in ADF was only 6k less than the conservative amount, and there was a 50% chance that i would receive considerably more than the 100,000 i would receive in the conservative option.
- The lowest possible amount i could get in ADF was 94,0, only 6,000 below 100,000. Since i had the possibility of making 150,000 in ADF, i decided that it was worth the risk.
- The odds appeared to be more in my favor.
- The odds of each outcome are the same. The top trees can be simplified to the exact scenario as the bottom trees.
- The only thing here that becomes controversial is the latter choice for a 50% 150. It seems to me that the 25% of losing roughly 6% of value while having a 25% of gaining 50% of value is worth the risk.
- The other choices (that are no longer influence the situation now) seem irrelevant to me
- The other grey areas seem to me irrelavent
- The other options had a 50% chance of losing a large amount, so I chose the conservative option.
- The payoff for both scenarios are similar enough that I would be satisfied with either.
- The payoffs are equal
- The percentages are actually the same.
- The percentages are the same.

- The percentages are the same.
- The percentages are the same.
- The possibility of having way more money is always an enticing choice and there is still the same amount of chance of getting teh lower amoutn of moeny. When you go up in 10s of thousands, a few thousand does not seem to make as much of a difference than when you are lower in the thousands
- The probabilities are all the same, just depicted differently.
- The probabilities are all the same, just displayed differently.
- The probabilities are all the same, just displayed differently.
- The probabilities are high enough to be worth the risk. Even if you get $88,000 it's still enough to live on
- The probabilities are the same and they represent the same option
- The probabilities are the same.
- The probabilities are the same.
- The probabilities are the same.
- The probabilities of all outcomes between the two cases are congruent
- The probability chance of output from BDE is higher than BCE
- The probability is the same
- The probability of getting a higher amount is high in ADE
- The probability of reaching each option is the same in both cases.
- The probability of reaching each possibility is the same, no matter the visual setup.
- The probability of reaching the outcomes in both questions are the same, despite being represented differently.
- The probability of receiving a given outcome is the same in each case
- The probability seemed more in my favor.
- The questions represent the options differently, but the probability of reaching the given outcomes is the same
- The ratio of risk to reward is much better with BDE on the second question as there is only a 25% chance of making less while it pays off to be slightly more conservative on the first question.
- The real portfolios are the same in different pictures. and the expect value of BDE is higher than A
- The result will be similar, which is 50% 150K, 25% 141K, and 25% 88K.
- The results are similar.
- The results are the same (50% 150K, 25% 141K, and 25% 88K).
- The results will be similar, which is 25% 225K, 50% 141K, and 25% 88K.
- The reward outweighed the risk.
- The risk of the 88000 is worth the chance to get 141000
- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.

- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.
- The same likelihood of outcomes is represented.
- The same stats are represented.
- The scenario is exactly the same.
- The scenarios are identical, there is a 50-50 chance that you can get $50,000 more than if you chose plan B. Worst case scenario, you get $6,000 less than what you would have gotten with B but the higher reward is worth the lower risk.
- The scenarios are identical.
- The scenarios are identical. $225,000 is much higher than $150,0, while $141,000 is not significantly lower than $150,000. Thus, it is worth the slight chance of obtaining an amount that is slightly lower than $150,000.
- The scenarios are the same.
- The scenarios are the same.
- The scenarios are the same.
- The security of the payout from BCE seems reasonable when compared to the options for BDF.
- The situations are essentially the same
- The situations are identical
- The situations have identical probabilities for each monetary value
- The two choices in each scenario are identical.
- The two scenarios are identical and are preferable to B because they have a higher ceiling.
- The two scenarios are identical. $140,000 is much higher than $94,000 and thus worth the 75% chance that at least that higher amount will be obtained. Also,$225 ,000 is much higher than $150,000 (while $141,000 is not significantly lower than $150,000) that it is worth the 25% chance of obtaining the much higher sum.
- The two scenarios are identical. $150,000 is an amount that is much higher than $100,0, while $94,000 is not significantly lower than $100,000. Therefore, it is worth the 50/50 chance of getting a much higher sum.
- The two situations are identical.
- The two situations are identical.
- The two situations are identical. The chances of obtaining a sum that is significantly higher than $94,000 (75%) is worth the 25% chance of getting a slightly lower sum of $88,000. $141,000 is not significantly lower than $150,0, and is worth the 25% chance of getting a slightly lower sum in order to gain a great deal more than $94,000.
- The upside is the same (I mean choice). But when you choose E or F, E has higher chance of getting a higher amount.
- The utilities of two choices are very close, but I would like to choose the one with 225K which is 25% to be received.
- There are equal probabilities for equal value outcomes... the situations are identical
- There is 25% chance of gettin 88K. But 75% chance of getting over 140K
- There is a 75% chance in getting more than 70,500 dollars in BDF, whereas there is only a 50% chance in doing so in the other choice
- There is a 75% chance that I'll receive at least 40% more income in the chosen situation. Though there is a 25% chance that I receive slightly less income, I am willing to take that gamble.

- There is a chance of getting $112,500, and $70,500 is not that different from $75,000.
- There is no difference between the two choices.
- There is once again a 75% chance of getting more than 70000 dollars in BDF and in the 75% chance, 1/3 of it can possibly end up in 112,500. On the other hand, there is only a 50% chance of getting 75000 dollars.
- There is only 25% of receiving less than 100K, but 75% chance of getting more than 100K.
- There was a 25% chance of receiving 225,000/yr in both options, so I ignored that possibility. From there, I decided that ACE was the better option because there was a high chance of me making 141,0, and the lowest possible amount i could make in ACE was 88,0, which was comparable to the lowest possible i could make in ACF, so I chose ACE.
- There was only a 25% chance in option ADE of making less than the conservative amount. Since the difference was only 12,0, and I had the possibility of making much more, I chose ADE.
- There was only a 25% chance of receiving lower than the conservative amount in option ACE. Since the lowest possible i could receive in ACe was 88,0, and it was only 12,000 lower than what I would receive in option B, i chose ACE.
- Theres no difference
- These BDF options provide the chance to get more money
- These two are the same pathway
- These two questions look exactly the same..
- These two questions look exactly the same..
- These two questions look exactly the same..
- These two situations have the same outcome
- They appear the same in terms of probability.
- They appear the same in terms of probability.
- They appear the same in terms of probability.
- They appear the same in terms of probability.
- They appear the same in terms of probability.
- They appear the same in terms of probability.
- They appear the same in terms of probability.
- They appear the same in terms of probability.
- They appear the same in terms of probability.
- They appear the same in terms of probability.
- They are asking the same thing
- They are basically the same choices.
- They are basically the same choices.
- They are basically the same choices.
- They are essentially the same scenario because it would not make sense to chose C or D because there is a chance that you would earn less then 70,500, while when choosing E or F you are guaranteed at least that amount.
- They are essentially the same.
- They are exactly the same question
- They are exactly the same question only explained differently.
- They are exactly the same!
- They are exactly the same.
- They are exactly the same.

- They are fundamentally the same decision
- They are fundamentally the same decision.
- They are fundamentally the same decision.
- They are fundamentally the same decision.
- They are fundamentally the same decision.
- They are fundamentally the same decision.
- They are fundamentally the same decision.
- They are fundamentally the same decision.
- They are fundamentally the same decision.
- They are fundamentally the same decision.
- They are fundamentally the same decision.
- They are going to give you the same amount of expected gain.
- They are going to give you the same amount of expected gain.
- They are going to give you the same amount of expected gains.
- They are going to give you the same chances of receiving money in both cases.
- They are identical situations.
- They are really the same thing
- They are the exact same choices and probabilities.
- They are the exact same scenarios drawn differently.
- They are the exact same scenarios.
- They are the same exact decisions in each case.
- They are the same option presented in two different ways
- They are the same probabilities
- They are the same probabilities. In each, there is a 25% chance of getting $44k, a 50% chance of getting $70.5k, and a 25% chance of getting $112.5k.
- They are the same prompt and I always go for risks that have fewer consequences and more benefits
- They are the same questions, unless I am missing something. The amounts are the same.
- They are the same scenarios, although one is drawn simplistically.
- They both are risky, but have a chance for higher returns
- They both give you the same chances of receiving the given choices of money.
- They give the same results, which include 25% 225K, 25% 141K, and 50% 94K.
- They give the same results.
- They have the same outcome
- They have the same probabilities
- They have the same probabilities.
- They look exactly the same to me.
- They look the same to me.
- They offer the same probabilities
- They represent the same option
- They represent the same option
- They represent the same option, and have the same probability of occuring
- They seem exactly the same.
- They seem like the same, just more complicated tree on the bottom
- They seem like the same, just more complicated tree on the bottom.

- They seem like the same, just more complicated tree on the top.
- They seem like the same, just more complicated tree on the top.
- They seem like the same, just more complicated tree on the top.
- They seem like the same, just more complicated tree on the top.
- They seem to me essentially the same choice if the probabilities are compiled
- They will give you the same amount of expected gain.
- They're the same choices
- This decision was based primarily on the fact that there was a chance for 225,000/yr. Though I'm more likely to make less with my choice, I liked that I had a chance of making much more.
- This figures and the odds are the same. Going with those odds, I will most likely gain much more than the conservative in B
- This gives you a 75% of getting at least 141. while the other is 50 50
- This provides you with a 75% chance of getting at least $70.5k.
- This situation ensures a better payout than the other ones
- This time, my odds are exactly the same regardless of my choice.
- Though shown differently, the end result will be the same, although I like the presentation of the second choice better as it looks cleaner and more simplified.
- To be honest, I went with my gut on this one. In both examples there is a conservative side that gives me a 50/50 shot at earning either 75 thousand or 47 thousand. However, the first option gives me 75% of a shot on getting a plan that is >44,000.
- Two situations are the same.
- When comparing C and D, the expected value of C is higher
- While the bottom dollar is lower in ACE, the favored odds are for more money
- While the situations are formatted slightly differently, the odds are actually the same in them when considered together. (50% twice is the same as 25%)
- With ACF you have a chance at a higher payoff. That chance is worth 3000.
- With approximate calculation, both first choices give me more return.
- With calculation, Ds give more return.
- With calculation, Fs give more return.
- With calculation, first choices give more return.
- With my rough calculation, first choices give more return.
- With my rough calculation, first choices give more return.
- Would take a 1/4 chance of a 12k cut in exchange for the likelihood of a payout 1.5 or 2.25 times as big.
- You can only lose 6000 whereas the payoff is much larger.
- You would have the same odds for the same amounts of money in both BDF situations.
- Your expected value is the same
- a 50% chance of getting 225K. I can live with 141K too.
- although they look differently they seem to me to have the same probability of me getting the large sum of money
- because
- because I can get over $70000 with 75%chance.
- because i have small chance of getting 44000 while the chance to get much more than 50000 is higher
- because i have very little chance to give up 6000 if i lose but i have big chance to win 75000

- because i will only give up 3000 if i lose but will win 25000 more than 50000
- because in situation 1, i have little chance to get less than 70500
- because it is the same chance to get the same amount of money.
- because the BDE ones provide a chance to receive more money
- because the future thing does nothing about my current age
- because the outcome is the same
- because the probabilities are the same.
- because the probability for getting each amount is the same
- because the real portfolio I faced at different stages are almost the same. and the mean value of BDF is higher than that of BDE
- because there's a chance to get a much higher amount
- because they are the same for me and the more likely to win more than 50000 than lose
- because they are the same to me
- because you have very small chance to get 44000
- better potential payout.
- both have the same values and A options are not relevant
- both probabilities are the same
- choice for C/E and E/F seems to me irrelevant to the choice of A/B since at age 50 what happened before is irrelevant.
- choice for C/E and E/F seems to me irrelevant to the choice of A/B since at age 50 what happened before is irrelevant.
- choice for C/E and E/F seems to me irrelevant to the choice of A/B since at age 50 what happened before is irrelevant.
- difference between 88 and 100 not enough to not take risk
- difference between 94,000 and 100,000 not enough to not take the risk for more
- different representation but same question
- different representation but same question
- equivalent
- equivalent
- equivalent
- equivalent
- equivalent
- equivalent
- equivalent
- equivalent
- equivalent
- equivalent
- equivalent
- greater chance for more money
- greater chance of earning much more $$ than the guaranteed option
- greater chance of more $$ than the other option
- greater opportunity for more money
- higher amount at stake
- higher chance of earning more than the alternate option minimum
- higher chance of having more than 50,000 while only losing 3000

- higher chance of making at least 70,500
- higher chance of making more than 75,000
- higher expected value
- higher expected value. I have the chance to get 112,500, and 25% chance is pretty good.
- higher payoff in D
- higher percentage on bigger money
- higher percentage on bigger money
- i am always trying to cut losses and maximize gains
- in both I have a 50% chance of getting 75,000
- in both cases decision making in 50 don't make any difference
- in both plans, there is an outcome of $44,000 a year. I chose the plan that had the best possible outcomes, and that was ACE.
- in both you have a 50% chance of getting more than 100,000
- in combine you have a 75% chance of getting a sum greater than 100,000
- in the first diagram its choosing between C and D, E an
- in the first diagram its choosing between C and D, E an
- in the first diagram its choosing between C and D, E an
- it is risky but with a nice chance of getting more
- it minimizes the chance of getting the lowest amount, and also the highest amount for this choice is higher than the other choice.
- more chance for mroe money
- more choices in ACE
- more guaranteed money
- only 6,000 diff for the lowest possible outcome, better to risk it
- potential gain greatly outweighs potential loss
- potential gain greatly outweighs potential loss at same odds
- potential gains greatly outweigh the potential loss both in odds and value compared to the conservative
- prefer more
- probability is the same
- same
- same
- same
- same
- same
- same as the last
- same choice different presentation (scdp)
- same exact situation
- same expected value
- same expected value
- same expected value
- same expected value
- same expected value
- same expected value
- same odds and payoffs

- same odds and payoffs
- same odds and payoffs
- same odds and payoffs
- same odds and payoffs
- same odds for both questions
- same option - different presentation
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same outcome
- same possibilities/outcomes in both cases
- same possibilities/outcomes in both cases
- same possibilities/outcomes in both cases
- same possibilities/outcomes in both cases
- same possibilities/outcomes in both cases
- same possibilities/outcomes in both cases
- same possibilities/outcomes in both cases
- same possibilities/outcomes in both cases
- same possibilities/outcomes in both cases
- same probabiliites
- same probabilities
- same probability
- same probability
- same probability
- same probability
- same probability
- same question...
- same questions
- same questions
- same representation...
- same scenario
- same thing
- same thing written out differently
- scdo

- see previous answers. Same question.
- similar risk
- situations are the same in these two choices. In BDF, there is a 75% chance of getting more than 50000 dollars, thus the risk is worth it
- small chance of getting 44,000 and large chance of getting more than 50000
- some risk, high return
- some risky, high return
- tehy are the same
- the chance of winning 75 outweighs 44
- the chances are the same
- the chances are the same in these two situations.
- the conservative amount is not that much different from the options where I have a 50% chance so I would choose the chance because there is the opportunity for me to gain more money.
- the expected payoffs are the same
- the lowest amount ($47000) is high enough to risk
- the odds are the same
- the payoffs are equal
- the payoffs are the same again, there is no reason to view it differently
- the portfolios I faced at the age of 35 is the same.
- the probable income of BDF is higher than that of A. I am willing to take the risks.
- the risk allows room for one to get more money. and the lower numbers on the BDE line arent that much lower than 50,000 which is the sure option
- the salaries are the same
- the same
- the same
- the situations are the same. the probable income of BCE is higher than that of A. I am willing to take the risks.
- the situations are the same. the probable income of BCE is higher than that of A. If the result turns out to be 88000/yr, I think it is acceptable to have only 6000/yr loss. If the result turns out to be 141000/yr, I think it is very lucky that I have 50000/yr more. So I am willing to take the risks.
- the situations are the same. the probable income of BCE is higher than that of A. If the result turns out to be 94000/yr, I think it is acceptable to have only 6000/yr loss. If the result turns out to be 150000/yr, I think it is very lucky that I have 50000/yr more. So I am willing to take the risks.
- the situations are the same. the probable income of D is higher than that of A. If the result turns out to be 88000/yr, I think it is acceptable to have only 6000 loss. If the result turns out to be 141000/yr, I think it is very lucky that I have 47000/yr more. So I am willing to take the risks.
- the situations are the same. the probale income of BDE is higher that of A
- there are 25% chance that I can get very high income, and $70,500 is also an decent amount
- there are 25% chance that I can get very high income, and $70,500 is also an decent amount
- there is the same chance of gaining the various salaries in both images
- there's a high amount at stake at there's no need to take the conservative amount
- there's a higher amount at stake
- there's a higher chance of getting above 100,000
- there's a higher possibility of getting more than 100,000
- they all are the same

- they all have same probability results
- they are both rewarding in the same amounts
- they are equivalent
- they are more rewarding and the risks are the same
- they are the saem choice
- they are the same
- they are the same
- they are the same options different presentations
- they are the same.
- they both give the same probabilities
- they both have better maximums and it worth the risk taking for a higher spending
- they both have same probabilites
- they offer similar incentives in teh sense that there is a great chance in getting more than 70 grand
- they're both risky
- they're teh same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same question
- they're the same thing
- to earn more since there is a good chance
- what could have been prior to age 50 does not factor into my decision. the possibility of 75,000 more than the conservative path is worth the risk of 9,000 less than option E.
- with same outcomes
- yes
- yes
- yes vecayse 94,000 is closer to 88,000 than 141,000 worth taking the risk

1.2.2 Responses from August 2013

- $94,000/yr is only $6,000/yr less than $100,000. It makes sense to take a risk to try and get a higher income.
- 3000 isnt that big of a difference for it to be a substantial risk
- 44,000 is not that much less than 50,000 so I might as well take the risk and go for something larger.
- 44000 is not much different than 50000, so I would risk to win more money
- 47,000 > 44,000, while 75,000=75,000
- 47,000 is closer to 44,000 than to 70,500.
- 47,000 is only 3000 less than 50,000, and the potential gain for ACF is much higher
- 50% and 50% is 25%.
- 50% and 50% is the same as 25%.
- 50% and 50% is the same as 25%.
- 50% is the same as two 25% options.
- 70,000 closer to 75,000

- 75% added chance of getting a sum that is greater than 50,000. better to risk than to invest conservatively.
- 75% chance I make more than 50,000
- 75% chance I'll make more than 50,000
- 75% chance I'll make more than 50,000 with ACE
- 75% chance of making over 70000 versus 50% chance of 75000 was an easy choice
- 75% of earning more is worth a gamble
- 75,000 is much greater than 50,000 than 47,000 is to 50,000
- 9000 a year is not much to lose when already at 140,000 a year, but $75,000 is a lot to gain
- A better chance of making $94k +
- A chance of getting a higher income.
- A chance to get a higher income.
- A chance to get a higher income.
- ACE chances are in favor for the middle amount, so I went ahead and took the risk hoping for the 125,000, whereas ACF chances were for the lesser amount of money.
- ACE has a higher probability of making 140,000
- ACE has a higher probability of making over 150,000
- ACE has a higher probability of making over 94,000.
- ACE has the chance to make much more than 100,000
- ACE seems to allow me more chances to get more money
- ACF has a higher probability of making over 100,000
- ACF has the chance to make 225,000
- ADE gave you more options and thus more chances for a different plan.
- ADE has a higher probability of making over 100,000
- ADF has a higher probability of making over 100,000
- ADF was too 50/50 making it appear too risky for me, whereas ACF gave you more 3 options with a risk worth taking.
- After discarding A as an option, I just BDF. At least in this scenario, once A was gone, I found the situations to be the same, hence the same choice of BDF.
- After the initial choice of A, it's the same situation, so naturally the answer is the same.
- Again the possibilities are the same in these two situations
- Again there is a chance of earning less than the 47,000 when choosing D, but there is also a chance of getting 70.500
- Again,
- Again,
- Again, I have a 25% chance of making 6k less than the conservative, which won't change my life style much. However, I have a 75% chance of making more money than substantially will change my lifestyle.
- Again, I was willing to risk going for $225,000 because I wouldn't lose that much.
- Again, equal amounts of risk. Same payoffs. The decision mechanism hasn't changed in the meantime.
- Again, minimal risk. $3000 less vs. $23,500 more
- Again, the reduced forms of the game is the same.
- Again, the situations are the same. And losing 6k potentially vs getting the chance of 150 is worth it

- Again, these questions are identical, just presented in different ways.
- Again, these questions are the same, just with different presentation.
- Again, worth the risk to me
- Again, worth the ~5k risk for potentially doubling or .5xing my retirement. My quality of life between 44k and 50k isn't going to be that different; between 44k and 70 or 50k and 112k it will be totally different.
- Although in these two choices, I still have 25% chance to get 88000/yr, which is what I don't want in previous questions. But a 50% chance to get 141000/yr and 25% chance to get 225000/yr are worth enough to risk the 12000 part.(100000-88000)
- As explained earlier
- At age 50, choice E and F will grant me higher payout if playing the odds. And with F, i might be reshashing my points here, but im okay with losing a conservative 150k to get 225k
- At the age of 35 I will not choose the plan B
- At worst I would end up with 5,000 less than the conservative option. At most, I would end up with 27,500 more than the conservative option. At 50/50, seems like a good bet to me.
- B has one option of 50,000, but ACE has more options that are much greater than 50,000 and 44,000 isn't that much less so I took the chance.
- B is too conservative
- B is too conservative
- B is too conservative and does not offer enough reward.
- BCF has a chance to make $112,500 while the highest amount of money for BCE is $75,000.
- BCF has higher min and higher max.
- BDE has 88000 as a chance, 150000 is not high enough for risk.
- BDF and BDE both offer 25% chance of getting 44,000, but in BDF there is also a chance of earning 112,500
- BDF has the same numbers in both charts, they simply use different colors, and the bottom one greys certain choices out.
- BDF is a much better choice because its average payout is higher.
- BDF is the same in both situations, so it makes sense to choose that over A (which is also same in both) in both cases
- BDF offers greater chance of getting more money
- BDF provides a good chance of making more for retirement.
- Because 47000 isnt much different than 50000. I would rather take the risk to earn more since there isnt too much of a bad side
- Because BDF gives you the highest option of winning the third highest option and a small chance at winning the highest, while BDE gives you the highest option at winning the second highest but nothing for the highest, and the difference between $70,500 and $75,000 is small.
- Because D has chance to get 88000/yr which is what I don't want. Plus 141000 is not high enough for the risk.
- Because F always guarantees either the third highest or highest option, and the difference between the third highest and second highest option is small.
- Because I always want to maximize the chances that I'll make have the most money.
- Because I have a 25% chance of leaving with 225000.
- Because I will make more money if you average out the money values.

- Because I would have chosen path A either way, the fact that path B is unavailable in one of the questions shouldn't have changed the way I made my choices
- Because I would not have chosen B in the top scenario, the fact that B is not available in the bottom question would not have affected my decisionmaking
- Because a decrease in $3000 is not enough to sway my decision to be conservative.
- Because again, the maximum potential gain is so much greater than the maximum potential loss.
- Because again, the possible gains greatly outweigh the possible losses.
- Because in ACE, the total percent chance are still the same.
- Because in both BCFs you have a 50% chance of making over $100,000.
- Because in both cases, BDF offers a 75% chance of getting either the $70,500 or $112,500 option.
- Because in both cases, if we get the option of C or D rather than E or F, the expected value is higher in C than D, regardless of whether there is that initial 50/50 chance of getting "C or D" or "E or F"
- Because the chances haven't changed, just my age.
- Because the conservative path always has a significantly lower expected value and the lower return of both risky options is not much lower than the returns on the conservative option.
- Because the expected return is higher in ADF than B and the potential loss in the event of choosing ADF and getting $47,000 is not that great when the safe choice of B would only make $50,000
- Because the expected value is higher in ACE than ACF
- Because the gain is greater than the loss and that doesn't change
- Because the loss of $6000 doesn't seem large enough to not try and earn $50000 more
- Because the numbers are the same
- Because the odds in BCE are exactly the same.
- Because the potential gains outweigh the potential losses.
- Because the top question eliminates the other possibilities B,C, and F, the two questions have the same probabilities and the same choices so the risks and benefits are the same
- Because there's a heavy outcome that I will receive considerably more at a low risk
- Because they are equivalent and a decrease in $3k is enough to take the risk for a higher amount.
- Because they are equivalent and both have a higher chance to get the max %112.5k
- Because they are equivalent and both seem more desirable over BCE.
- Because they are equivalent and it is more desirable to me to have a 25% chance of getting 3k lower, and a 75% of getting 13k or more.
- Because they are equivalent.
- Because they both depict the same thing.
- Because they both depict the same thing.
- Because they have the same percent chance of getting the final total amount of money.
- Because when you lose in the first part of A, you do not have as much of a luxury to gamble the money and must cut your losses
- Because when you win in option A and get to choose between C or D, you have the luxury of gambling your money to make a higher return.
- Because when you win in option A and get to choose between C or D, you have the luxury of gambling your money to make a higher return.

- Because when you win in option A and get to choose between C or D, you have the luxury of gambling your money to make a higher return.
- Because you have the same odds of getting the same amount of money from each spinner situation. They are exactly the same
- Being able to see the grayed out sections does not affect my judgment. I cannot choose the grayed out options, so I do not consider them when making my decision. Thus I choose ACF over B in both situations.
- Better chance of consistently more money.
- Better chance of gaining more money than losing it.
- Better chance of making more than $94k
- Better chance of making more than $94k +
- Better chances for higher income in these cases.
- Better chances for higher income in these cases.
- Better chances for higher income.
- Better option
- Both ACE choices have the same results.
- Both ACE choices have the same results.
- Both ADE choices come out with the same chances of getting the same amounts of money, respectively.
- Both BCF choices have the same probabilities for each amount. Both BDE choices have the same probabilities for each amount. I should make the same choices.
- Both BCF options say the same thing, even though they look different.
- Both BDE choices have the same probabilities for each amount. Both A choices are the same. Since both questions are the same, I should make the same choice.
- Both C options provide the opportunity to make more money, with the amount of risk (difference between conservative and lowest amount of choice) small.
- Both choices have the same changes of coming out with the same amounts of money.
- Both choices present the same mathematical options and chances.
- Both decisions are basically identical with regards to % and outcomes.
- Both have a chance at getting 225,000/yr.
- Both have a chance of getting the 225,000/ yr.
- Both offer 25% chance of getting 44000, but BDF offers chances of getting more money as well
- Both options have the same choices and the same probability, so it makes sense to pick the same paths in both of them.
- Both options represent the same likelihoods and results.
- Both options represent the same likelihoods and results.
- Both options represent the same likelihoods and results.
- Both options represent the same likelihoods and results.
- Both options were more risky, thus had higher payouts.
- Both questions pose the same choices with the same probabilities, simply in a different manner
- Both result in the same chances for the same amounts of money.
- Both scenarios have the same chances of making teh same amounts of money. The top set just shows a lot more choices, which can be confusing but if you simplify it in your mind it ends up the same as the lower scenarios.
- Both situation I am choosing the one with the best chances at more money.

- Both situations are exactly the same, the probability is just written out differently.
- Both situations present $88,000/yr as the least possible amount of money in ACE, so I chose A to avoid the 88,000
- Both trees have the same outcomes so it makes sense that I would choose the same paths in both.
- Both trees have the same percentage chance they are just represented differently.
- Both trees mean the same thing but are represented differently.
- By choosing BDF, I have a 75% chance of receiving at least $20,500 more than the guaranteed $50,000 from A. The 25% chance of receiving $6,000 less is worth the risk of the much higher reward.
- C gives me the highest chances of making more money and 141 is not much lower than 150
- C has a significantly higher expected return
- Chance of not only making 150; but 141k is worth it, 75% chance of making more then 100k
- Chances of higher income are better.
- Choice B, in addition to having lower expected value (I'm risk averse, but only very slightly) is also B for Boring. At age 35 I definitely want to make more exciting life choices.
- Choice E in both situations guarantees more money than if I chose the non conservative option.
- Choosing ACE has a 75% chance at ending up with over $100,000, while $88,000 is not significantly lower to warrant the conservative choice.
- Choosing B is too conservative
- Choosing C instead of D guarantees a higher amount of money.
- Choosing E guarantees a certain amount of money, while the other choices leave it to chance.
- Consistent logic? I was actually paying attention to these ones and the diagrams were more similar.
- D displays things that could have happened, ultimately both choices are the same regardless of what could have happened.
- Difference b/w 88k (one possible outcome for choice B and the one with the biggest differential) and 100k for option A is not that large to warrant not taking a risk
- Difference b/w a guaranteed 94k and a possibility of only getting 88k is low enough to potentially get 141k
- Don't mind the chance of losing 3,000. Doesn't make that much of a difference to me.
- E has a significantly higher expected return
- E was more risky than F but i still wanted to risk it both times
- Equal amounts of risk with same payoffs should give the same decision.
- Equal amounts of risk, with the same payoffs. There's no reason my decision should change.
- Exact same probabilities in both BDFs, where the outcomes were more desirable than the BCE choices.
- Felt more conservative as this went on.
- For ACE, (in both cases) the chances of getting more than 100k is 3/4 or 75%
- For both BDE choices there is a 75% chance I will make more than 100,000
- For both choices of ADE, there is still 50% chance of getting $150,000/yr and a 25% chance of getting both $141,000/yr and $88,000/yr. Both choices are the same.
- For me I think the risks were similar enough to incur the same choice.
- For the same reason I explained in the last question.
- General theme of my response applies: odds in BDF will generally give you a higher payout in the end

- Given my personality, risk preferences, and age, the riskier option appeals more.
- Given my personality, risk preferences, and age, the riskier option appeals more.
- Given my personality, risk preferences, and age, the riskier option appeals more.
- Given my personality, risk preferences, and age, the riskier option appeals more. I like the chance of higher payouts.
- Given my personality, risk preferences, and age, the riskier option appeals more. I like the chance of higher payouts.
- Given my personality, risk preferences, and age, the riskier option appeals more. I like the chance of higher payouts.
- Greater reward for lss risk
- Having that 112k, which would be life changing, is worth the the risk of getting 70.5 in BDF in stead of 75k in BDE
- Here, im just not a fan of having a 50% chance of getting 94k. Compared to previous situations, Id rather play the odds here and take the chance of getting a 75% chance of getting either 141/150 in BDE vs only a 25% odds for 225k
- Higher Expected Value
- Higher Payout than A.
- Higher amount at the end.
- Higher chance of earning more
- Higher chance of earning more
- Higher chance of earning more
- Higher chance of earning more
- Higher chance of earning more without too much loss if it were to go that way
- Higher chance of earning versus losing
- Higher chance of getting more than $94,000.
- Higher net pay off
- Higher net pay off
- Highest Expected Value
- Highest Expected Value
- Highest Expected Value
- Highest Expected Value
- Highest Expected Value
- Highest Expected Value
- Highest Expected Value
- Highest Expected Value
- Highest Expected Value
- Highest Expected Value
- I always want to have the 112,500/year in play.
- I always want to have the 112,500/year in play.
- I always want to have the 112,500/year in play.
- I am choosing the ones with highest expected value
- I am choosing the options that will give me the best chances at more money.
- I am comfortable living with 70.5k. It would be nice to live with 75k but even nicer to live with 112.5k. I think this risk is worthwhile because I feel comfortable living with only 70.5k but could potentially make much more than 4.5k I'm risking.

- I am comfortable living with 70.5k. It would be nice to live with 75k but even nicer to live with 112.5k. I think this risk is worthwhile because I feel comfortable living with only 70.5k but could potentially make much more than 4.5k I'm risking.
- I believe it is more than enough to have $60,000 for retirement each year, so I went for the plan that will give a chance of yielding more income.
- I believe that the 4.5k loss is worth risking for the 37.5k gain. I think I would be able to live comfortably with either 70.5 or 75k so the loss doesn't really bother me. With 112.5k per year however I would be able to live a much more luxurious life.
- I belive it is worthwhile to risk 6k to make 20.5k+. Losing 5k won't change my standard of living as much as making 20.5k would.
- I chose to take the risk because I'm only risking 70.5k vs 75k. Both these numbers are in my comfort zone for income so I think risking 4.5k to make 37.5k is worth it, especially cause I think 70.5k is enough for me to live comfortably.
- I don't think the difference between 70500 and 75000 is significant enough to choose E over F and lose out on the chance to get 112500
- I don't think the difference in age would change my way of thinking about the numbers
- I don't understand this section. Choosing between C or D in either of the two situations yields exactly the same probabilities. However, the top
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- I dont want to make the same amount of money for 30 years.
- I dont want to make the same amount of money for 30 years.
- I felt the outcomes in my answers would have been better or close enough in BCF
- I find it worthwhile to risk 3k and 4.5k per year to get 37.5k more. I don't believe these losses would effect my lifestyle as much as earning 37.5k per year would.
- I find them to be similar.
- I have a 25% chance of getting 44k in BDF and 75% chance of making over 70.5k. In BCF I have a 50% chance of getting 47k. Seems like BDF is better.
- I like to take risks
- I liked the odds better.
- I made a decision at 35 already. I will like to take another risk.
- I prefer having the higher probability of making more money.
- I prefer the more risky scenario in ACF as it has higher payouts!
- I prefer the riskier option as there is more to gain than to lose.
- I prefer the upper choices in both cases, despite them being riskier. I consider myself risk averse, however, the potential gains of $23k outweigh the potential loss of $3k per year.
- I see absolutely no differences in these two questions - even in how they are presented. Thus, I can think of no reason why the answers should be any different.
- I still think it's the better choice to make.

- I think that the change is standard of living from 75k to 70.5k isn't as significant as the one from 75k to 112.5k. Therefore I believe this risk is worthwhile because it wouldn't hurt me as much as it could potentially help me.
- I think that the choice of choosing A differs in each scenario. In the first its a plethora of choices vs, a bunch of other choices AND A. And in the second it's just a plethora of choices and then A.
- I think the benefits out weigh the negatives here. There is a 25% chance that I lose 6k yet a 75% chance that I make at least 20.5k. Even if the percentages were equal I'd take the risk because I feel earning 20.5k would change my standard of living more than losing 6k would.
- I think this choice should be take conservatively. I don't think risking 28k to make 37.5k is worthwhile especially when your chances of making under 50k are doubled. I rather have a only a 25% chance on making under 50k than a 50% chance of making under 50k. I believe I could like more than comfortably with 70k. 112.5k would be nice to earn but it is unnecessary and not justified by amount of risk I'd have to take to earn it.
- I view $94,000 as not so much less than a conservative choice of $100,000. It makes sense to me to take a risk regardless of whether I am 35 or 50 for what is expected probability-wise to be a bigger payoff than simply keeping $100,000.
- I was actually making a logical decision.
- I will always make more than the lowest possible amount in ADE ($44,000)
- I will not be so conservative at the age of 35
- I would always like chance to win more and since 47000 is not much more than 44000, i dont care if i get the lowest value
- I would always like the chance to win 112500
- I would be risking $9000/yr in return for a possibility of getting the $225,000/yr retirement spendings
- I would be risking a relatively small amount of money for greater returns
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- I would be risking a relatively small amount of money for greater returns
- I would be risking a relatively small amount of money for greater returns
- I would be risking a relatively small amount of money for greater returns
- I would choose BDF over any other possible choice.
- I would choose E in both situations because it is a higher likelihood for higher payoff in both.
- I would rather be guaranteed $100,000 than risk getting less money than that in the BDE option
- I would rather be risky then conservative.
- I would rather risk 3000 for the possibility to make an extra 23,500
- I would take ACF over B in both situations because the expected payoff is higher and the possible loss is only $6,000.
- I would want to try to make as much money as possible.
- I wouldn't mind the chance of losing 5,000 for the chance of gaining 30,0000
- I'd rather have a 25% chance of getting 112500 than not getting that chance at all (option BDE)
- I'd rather have a 25% chance of winning more than not getting that chance at all. 47 vs/ 44 thousand is not a big enough difference for me to choose otherwise

- I'd rather take a chance at getting a higher income per year instead of taking the conservative route and always wondering if I could have had a higher income.
- Identical statistical scenarios.
- If my responses are my indictator, then a 25% chance of losing 6k from a guaranteed 100k is totally worth the risk of having a 75% chance of get higher returns
- If you ask the same question, I'll give the same answer.
- Ignoring the grayed out options makes the two situations the same
- Im just playing the odds here and the lowest payout in BDF isnt that large compared to the smallest payout in BCE
- In BCF, you have a greater chance of getting more money. Even though there is a chance that you'd get 47,000, I don't think that there is a substantial difference between that and the conservative 50,000
- In both ACE and ADE you could end up making only $88,000/yr, but in ACE there is a max of $225,000/yr whereas ADE only offers a max of $150,000/yr.
- In both BDE and BCE, there is a 50% chance of earning $75,000 a year. However, if I choose BDE, there is a 1 in 4 chance of earning $23,500 more than the guaranteed smaller option in BCE, $47,000. Even though there is an equally likely chance that I can lose $3,000 a year by choosing BDE, the greater benefit makes me think this risk is worth taking.
- In both BDEs there is a 75% chance that I would make $141,000 or more per year, whereas the odds favor making less than $100,000/yr in BCF
- In both BDF choices there is a 75% chance of making over 100,000 (which the conservative option offers).
- In both cases you can gbet considerably more with little risk
- In both cases you can get considerably more with little risk
- In both cases you can get considerably more with little risk
- In both cases you can get considerably more with little risk
- In both cases you can get considerably more with little risk
- In both cases you can get considerably more with little risk
- In both cases you cna get considerably more with little risk
- In both cases you only have a 25% of getting $88,000...They are the same
- In both cases, the potential gains above $50,000 ($20,500) are much greater than the maximum potential loss ($6,000).
- In both cases, you have a 50% chance of getting 47,000 but in BCF there is also a chance of getting 112,500
- In both options I have a 25% chance of getting 44k. But in BDF I have a 25% chance of getting 112.5. Yeah, BDE gives me 75k over 70k, but I'd be willing to press my luck for that 112.5k.
- In both questions you have the same probabilities of attaining each end result so the risks and benefits are the same
- In both scenarios the minimum amount received is equal...but for C/D in the top, the values are far greater. For E/F for the top scenario, there is not much difference between the minimum E and the conservative F, therefore making it worthwhile to choose E and occasionally receive significantly more. For E/F for the bottom scenario, the same logic applies.
- In both situations, ACE is the better choice since the outcomes are almost the same, but ACE has a higher maximum spending amount.
- In both situations, ADF has the higher minimum spending amount.

- In both situations, I am considering ONLY the choice I would make IF I got to that node, so the answers are the same.
- In both situations, it is worth the risk not to choose the conservative path and try to obtain $141,000.
- In both situations, two of the three outcomes in ACE are lower than the outcomes in ADF. There is only a 25% chance that you will obtain more with path ACE.
- In both situations, you have 3 out of 4 chances of having a higher spending amount in path A than in path B.
- In both situations, you have a higher likelihood of obtaining a higher spending amount.
- In both, F had the opportunity to make $225,000 just at the risk of losing $9,000 so I risked it. I looked at both as isolated sitations.
- In choosing BDE over BCE, I give myself a 75% chance that my income will be over $94,000/yr, rather than a 50% chance (like in BCE).
- In choosing F for both situations, the difference in income between $141,000/yr (the lowest possibility) and $150,000/yr (the most likely possibility) is only $9,000, and it is still a good amount of money. Thus, it makes sense to take a risk and try to get $225,000/yr.
- In each case, BDF offered the highest average amount to live off of averaged over a couple of years.
- In each situation, getting the lowest amount of $44,000 is the same percentage, so if you view it like that, then it's the same scenario mainly.
- In the first question, all possible paths were open and I chose BDF was my preferred decision. Because all options were available in the first question, it follows that option BCE was also available. Thus, if I preferred BCE to BDF then I would have chosen option BCE in the first question when all options were available. My choices show a consistent preference for BDF over BCE, and thus it makes sense for them to be the same in both questions.
- Increase my chances for making more than 50000
- Increase the likelihood of making more than 50000 per year
- It doesn't matter how the spinners are drawn; the probability of different payoffs is the same, so I made the same choice.
- It has both higher minimum and maximum value
- It is the same situation in both cases.
- It is worth the chance of getting $3,000 less for the equal chance of receiving $25,000 more than the guaranteed $50,000 from A.
- It is worth the risk not to choose path F to have a higher spending amount.
- It is worth the risk of not choosing path B to obtain a higher spending amount.
- It makes sense to make the same choice in both questions because they are the same numbers and probabilities, just written out differently.
- It's essentially the same question.
- It's essentially the same situation, and is iptimal for getting the chance to get a lot of money
- It's not a small loss to $70,500 and the chances lead for something much higher at $112,500.
- It's the exact same question
- It's the optimal choice
- It's the same outcome.
- It's the same question asked differently I have the same odds of getting the same amount of money

- It's the same question, one's past shouldn't change the outcome to the same question.
- It's the same question, so I give the same answer.
- It's the same question, so I give the same answer.
- It's the same question, so I give the same answer.
- It's the same question, so I give the same answer.
- It's the same question, so I give the same answer.
- It's the same question, so of course the answers are the same.
- It's the same question, so the answer is the same.
- It's the same question, so the answers are the same.
- It's the same scenario
- It's worth risking $3k at worst to have a chance of making 70.k or 112k
- Kind of the same situation, when you look at it.
- Less complicated
- Like I said before it makes sense to me to try, if there is a chance to get more.
- Lowest risk is the same in each scenario
- Makes sense to me.
- Making only $88,000/yr is not even a possibility in option ACF
- Minimize the likelihoo dof making less than 50000 per year
- Money is enough either way, so take the risk.
- Money is enough in either case, so take the risk.
- More chance to make 50000
- More chance to make more than 50000
- More chance to make more than 50000
- More money
- More money
- More money in BCE
- More money in BCE
- More money in BCF
- More money in BCF
- More money in BCF
- More money in BCF
- More money in BCF
- More money in BCF
- More money in BDE
- More money in BDF
- More money in BDF
- More money in BDF
- More money in BDF
- More money in BDF
- More money in D
- More money in DF
- More money in f
- More money than 50,000
- More money to be made

- Most of the outcomes pay out more than the conservative amount of $50,000 in A. I see that there is a 50% chance that I can receive $3,000 less by choosing BCF, but there is also a 50% chance of receiving significantly more than the guaranteed $50,000 in A. The chance that I can receive either $20,500 or $62,500 more than the conservative amount makes me want to take the risk.
- Mostly I dont see a reason to be super conservative, 94,000 is still sufficient to live off of.
- My chances of winning each amount are the same in both ACEs and in both ADFs so it makes sense to have the same answer.
- My choice at "C or D?" is completely separate from my choice at "E or F?". if I'm ever at "E or F?" and have to make that decision, it would be after the spinner had sent me there. At that point the "C or D?" node would also be gray, and the two pictures would look exactly the same.
- My decision at age 50 doesn't not depend at what decision I made at age 35, or what I missed out on. It's already done, so I should just consider the situation as it is at age 50. It makes sense to choose the same answer because I am considering only where I am at when 50.
- My interpretations of these trees shows that I have the same percentage chances in both situations so it makes sense to me to have the same choice. To me it's just the same numbers represented differently.
- No matter the outcome of the past the future should always maintain the same result.
- No! Once again, the probabilities are the same, but are simply presented differently, this does not change the actual likelihoods of the outcomes, and thus my answer did not change.
- No, for the same reason as the previous question.
- Odds are better for 150000 than for 225000
- Once I hit the fork where I must choose between C and D, the questions are the same.
- Once again I feel that it is worth it to risk $3k to make $20.5k or even $62.5k. I don't think living with 3k less will make as large an impact on me as living with 20.5k or 62.5k. With 50k or 47k I will have to be very careful with my money. I will be able to live much more leisurely with 20.5k or 62.5k and this elimination of stress and vast jump in standard of living is worth the risk to me.
- Once again, $60k is enough per year. Went with plan that has a chance of more income.
- Once again, I gave the same answer because I was responding to essentially the same question. In this case the only difference was that the exact probabilities were given by the question in one case while in the other they had to be calculated from the probability of something happening given that something else with a distinct probability has already happened. Because I had already identified the relevant outcomes as happening 25% of the time, my answer did not change.
- Once again, I prefer the more risky, higher payout option.
- Once again, although I consider myself risk averse, I feel that the conservative (50,000/yr) is too low to be considered compared to the potential gains that the risky choices present. Thus my answer is not affected by the addition of choice B
- Once again, the probabilities are essentially identical.
- Once again, when ignoring the greyed out options the choices are fundamentally the same thing. The only difference is that the second pair has you making the full decision at age 35 rather than a two-part decision at age 35 and again at age 50.
- Once you ignore the grayed out options, the outcomes are identical.
- One plan corresponds to what I chose when I had complete freedom, so of course I would choose it.
- Only 4,500 dollar difference in worst case scenario vs more than 30,000 more of C so it makes sense to take the risk.
- Opportunity for higher pay off

- Opportunity for higher pay off
- Opportunity for higher pay off and the risk is not too bad
- Opportunity for higher pay off and the risk was reasonable to take
- Opportunity for higher payoff in both situations
- Opportunity for higher payoff in both situations
- Opportunity for higher payoff in both situations
- Option B avoids the possibility of making $88,000/yr
- Percentage wise they are the same
- Playing the percentages, unless Im mistaken, there is an equal chance in both situations to get the same result.
- Please refer to the previous answer.
- Possibilities are the same in these two situations
- Pretty much the same situation.
- Pretty sure I answered this before. I chose BDF as my "ideal" set of decisions when all options were available. Thus it is logical that I chose it again when it was paired against BCE, as BCE was one of the alternative set of choices I turned down initially in favor of BDF.
- Questions the same, answers the same. Essentially the same reason as the last question.
- Regardless of whether I was 35 or 50, I would make the same decision. Choice ACF in both diagrams is more probable to give a higher return.
- Risk the same on both. Chance to have 150k rather than 100k with the only risk being 96k is worth it
- Risky is more rewarding than conservative.
- Same
- Same
- Same
- Same
- Same
- Same amount of risk
- Same as before
- Same assesment of risk
- Same assesment of risk
- Same chances in both situations, so same answer.
- Same choices
- Same choices
- Same choices
- Same choices
- Same choices
- Same choices
- Same choices
- Same choices
- Same choices
- Same choices
- Same choices
- Same choices to be made.
- Same choices to be made.

- Same choices.
- Same data with different types of trees.
- Same odds just represented differently.
- Same odds represented differently.
- Same outcomes, same probabilities of these outcomes -> same answer.
- Same percent chance
- Same percent chance
- Same percent chance
- Same percent chance
- Same percent chance
- Same percent chance
- Same percent for the total amounts.
- Same reason as before: higher chance of getting more money outweighs risk of getting less than the conservative, guaranteed amount.
- Same reason as the previous question: I gave the same answer because I was essentially asked the same question. Kind of like i am (ironically! :)) doing right now.
- Same risk
- Same risk + same payoff = same decision.
- Same risks between the two
- Same risks between the two.
- Same risks vs rewards
- Same scenario
- Same situation.
- Same situation.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same statistical question being asked.
- Same thing as last several questions...
- Same thing, why not?
- Same, expected value
- Sames chance of having 150000
- Sane choices
- Similar risk assesment
- Similar risks and rewards
- Similar to previous response; ACF has same max amount as ACE, but potential min amount is higher in ACF than ACE (94 vs 88)

- Since D has 50% chance to get 88000, so I choose C. For E and F, since I think I have enough money as 141000, so i don't really mind loosing 9000/yr to get a chance to earn 125000 more.
- Since I choose B over A, it is reasonable to make the same decision
- Since the top part of choice A is grayed out, I disregard it and make the same decision as if I had never seen it.
- Small risk/ higher reward
- Small risk/ higher reward
- Small risk/ higher reward
- Small risk/ higher reward
- Small risk/ higher reward
- Small risk/ higher reward
- Small risk/ higher reward
- Small risk/ higher reward
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- Small risk/higher reward
- Small risk/higher reward
- Small risk/higher reward
- Small risk/higher reward
- Statistically the same question of chance.
- Statistically the same risk reward for both ADE and ADF options in both scenarios.
- The $70,500 is ultimately a total of 50% in both situations.
- The amount that is less than the conservative amount is very small compared to the difference between the conservative and the higher amount
- The appeal of 112,500 helped me make my decision.
- The average $ I would earn over a number of years far outweighs a measly 50k a year.
- The average payout in BCF is higher than in BCE.
- The average payout is higher in BDF than in A.
- The average payout is higher in BDF than in BDE.
- The average payout is higher than choice A.
- The benefits outweigh the risks. If I receive $70,500 a year, that is $4,500 less than the conservative amount. However, there's also a 50% chance I can earn $37,500 more than the conservative amount, so I am willing to take this risk.
- The both have a significantly higher maximum value and there is only 25% chance of getting less that 88,000 which is the amount I use as my average
- The bottom investment plan is the same choice I made when I had more freedom.
- The chances are the same in both situations.
- The chances are the same.
- The chances of getting higher income are greater and worth the risk.
- The charts represent the same choices. The amount lost in each case is insignificant to the amount that could possible be earned
- The choice is exactly the same in both cases.

- The choice of C provides the same payoff possibilities in both situations.
- The choice of E provides the same payoff possibilities.
- The choice should be the same because in both instances I am considering my choice at the "E or F?" node. Whether or not I have a choice at "C or D?" has no effect on how I would decide at "E or F?"
- The choices are the same.
- The conservative choice in the lower bracket nets you 100k. Meanwhile, in the upper bracket,if you choose B, there is a greater chance the the investment will lead to a return of greater than 100k. Also, even if you end up choosing the conservative route in B, the difference b/w 100k and 88/94k is small enough to me to warrant the risk of netting at 200% ROI.
- The difference between 45000 and 50000 is not that big, so I have decided if I have a possibility to get more I can try, but I won't lose too much even if I get a little less amount than the guaranteed one.
- The difference between 50,000 and 47,000 is not that great so I might as well take the chance.
- The difference between the smallest amount in BDF with BCE is not that beg. So I think it worth to try.
- The difference of the smallest amount possible with the guaranteed amount is only 3000, therefore I can try my luck, even though if I'll lose a little.
- The end chance is still the for all amounts.
- The expected return is higher in ADF than in B
- The expected value is higher in ACE than in B
- The final probabilities are the same for each end result in both problems
- The final probabilities of attaining each respective end result are the same for both questions
- The final probabilities of each end result are the same in both problems
- The final probabilities of having each end result are the same for both questions, just posed in a different way
- The gain from 47,000 to 70,500 is far greater and more worth it than the loss between 47,000 and 44,000.
- The gain from 75,000 to 112,500 is far greater and more worth it than the lose between 75,000 and 70,500.
- The gain is greater than the loss.
- The gain is worth taking the risk.
- The gain is worth taking the risk.
- The graphs are representing the same data just using different trees. The top graph is a simpler version.
- The highest possible income for both choices is 150,000/yr but the lowest is lower in ADE than ADF.
- The lower part is the same, so I was only comparing the upper half of the choices
- The numbers and percentages are identical.
- The numbers are percentages are the same.
- The numbers are simply presented in a more complex manner in the second question; the fundamental scenario is identical.
- The numbers are the same.
- The numbers are the same.
- The numbers are the same. What's being affected is ultimately from age 65 on in both scenarios.

- The odds are exactly the same in both situations (unless A was selected in the second one)
- The odds are the same in both situations, and in BDE you have a greater chance of making 70,000+
- The odds are the same in both situations.
- The only difference appears to be the grey area in the bottom box, but the choices in the grey area are no longer options so the choices are essentially the same.
- The only differences are that the trees show different percentages which mean the same thing.
- The options at hand are the same percentages.
- The options in both questions are the exact same. In both scenarios, you must choose between C and D, disregarding choices E and F
- The outcomes are nearly identical here. Granted, you may have the option of a more conservative route(s) but still
- The parts in gray don't matter because I can never get there. The only thing I can control is my choice at "E or F?", so I chose the same route both times.
- The parts that are gray do not influence my decision making, because I can never get to them. I am considering only the choice at "C or D?", so I chose the same answer to both of them.
- The payouts are the same.
- The percentage likelihood of each outcome is the same in both situations.
- The percentage likelihood of each outcome is the same.
- The percentage likelihood of each outcome is the same. The decision-maker only has to make a decision once. Therefore, they can be considered the same choice.
- The percentages and options are the same.
- The percentages and options are the same.
- The possibilities are actually the same for 7500, 70500 and 44000 respectively in these two situations.
- The probabilities are identical.
- The probabilities are identical.
- The probabilities are identical.
- The probabilities are identical.
- The probabilities are identical.
- The probabilities are the same for all the amounts. Even though there are two times the person must make a choice in the first set, it is essentially the same to me.
- The probabilities for the outcomes are identical.
- The probability distribution is the same.
- The probability for both sets of choices are identical.
- The question at hand is the same.
- The question at hand is ultimately the same.
- The questions and numbers are exactly the same. One just has a series of spinners and the other has one representing the same probabilities. Since the expected payoff is the same, I made the same choice.
- The questions should result in the same answer no matter their presentation.
- The questions shouldn't have different answers basesd upon their surroundings.
- The reduced probabilities are the same.
- The risks between the two. Do not want to risk going down to 88000
- The same expected values and the same amount of risk in each decision set.

- The same expected values, and approximately the same amount of each in each decision set.
- The same likelihood of outcomes exist in both situations.
- The same likelihoods of payoff exist. There are no differences from the point-of-view of the decision-maker.
- The scenarios are identical.
- The scenarios differ in the amount of choices one can make, some have the A path that you have to factor in. And so also having to make that decision to throw away A, changed my thinking.
- The second image did not load... But it seems to me that CE gives me more chances for more money
- The trees have different percentages that ultimately mean the same thing.
- The two choices are still the same if you look at percentages of each dollar amount. The only thing that is different is the greyed out options which I am not allowed to choose anyways.
- The two choices would be the same because the likelihoods of each payoff are the same.
- The two questions are identical. Thus, my answers are the same in both cases. One is presented as 50% of 50%, and the other as 25%, but the outcomes and probabilities are the same.
- The two questions are the same. Both essentially ask if I would rather have a 50% chance of having 75,000 per year, 25% of having 44k and 25% of having 70.5k OR if i would rather have a 50% chance of havnig 46k and a 25% chance each of having 70.5k and 112.5k. The options and the probabilities associated with them are the same in both cases. The only difference is that in one case, a surrounding context of once-possible alternatives is presented and in the other the choice is presented without context. Rationally, the options no longer available should not influence your choice, so having the same answer for both questions makes sense.
- Their the same probabilities
- There are more options for ACE so you have more opportunities to not get 44,000 and the difference between 44 and 47 is not that great.
- There is a 3 in 4 chance of receiving more than $20,000 than A if I choose BDE. There is only a 1 in 4 chance of receiving $6,000 less than A, which makes the risk worth it.
- There is a 50/50 chance in either situation.
- There is a 75% chance of making more than $100,000, in B there is a 0% chance. $88,000 is not that far from $100,000 for a retired person. Spending should not require more than $60,000.
- There is a 75% chance of receiving more than $70,000 by choosing BDF.
- There is a 75% chance of receiving more than the guaranteed $50,000 from A if I choose BDF. $70,500 and $112,500 are significantly higher than $50,000, and the chance of receiving these higher payouts makes the 1 in 4 chance of receiving $6,000 less a year worth the risk.
- There is a 75% chance that you will get a significantly higher return if choosing A over B, and would only lose 50,000-44,000=6000 if getting the worst possible outcome of A
- There is a chance you'll get over 100,000/yr and if your unlucky the loss is worth it.
- There is a great chance that I have better outcome than the conservative strategy
- There is a greater chance of obtaining >$100,000 with path ACE.
- There is a greater chance of obtaining >$100,000 with path ACF.
- There is a higher expected payoff for ACE over ADF. There is only a 25% chance the payoff is less.
- There is a possibility of getting more of a retirement payment in both scenarios.
- There is a possibility of greater payoff without much additional risk.

- There is only a 25% chance of me having an income of 88,000 in either chart. so it is worth the risk to have a chance at 150,000
- There is only a 25% of receiving less than the conservative amount, the odds of the higher amounts may be different but they still trump the conservative choice.
- There is still a chance of getting 141,000 a year, but I rather take the risk of getting the 225,000/yr
- There is the same chance of making 150,000 which would be better than just the straight 100,000. Even if I risk going down to 88,000
- There's a chance at getting 225,000/yr versus no chance at all.
- These are the exact same questions so it makes sense to choose the same answer.
- These are the same question, the spinner is just drawn differently. I made the same decision because I'm consistent.
- These decisions have the same result, with the same expected payoff, so it makes sense to follow the same logic in both cases.
- These graphs appear to be portraying the same odds just with different style trees. The top version of BDF just condenses the same data into a smaller tree.
- These question are identical, just presented differently.
- These questions are exactly the same, the spinners are just condensed into one overall spinner. All the chances and payoffs are the same, so I made the same choice.
- These questions are identical, just presented in different ways. The odds are exactly the same for all five amounts.
- These questions are the same.
- These questions are the same.
- These questions are the same.
- These questions are the same.
- These questions are the same.
- These questions are the same.
- These questions are the same.
- These questions are the same.
- These two questions are exactly the same, just written differently, so I made the same choice.
- These two questions are exactly the same, they're just drawn differently, so I chose the same answer.
- They are asking the same question both times. I am asked to pick between two options showing identical outcomes and probabilities of having those outcomes. The only difference is their presentation in the presence or absence of the context no longer possible alternatives, which should not influence my choice.
- They are essentially the same question.
- They are identical choices.
- They are identical situations.
- They are the exact choices, so there is no difference.
- They are the exact same probabilities.
- They are the same
- They are the same
- They are the same
- They are the same
- They are the same choices.

- They are the same exact probability of outcome. which at the end of the day, I am comfortable with having an income of 94,000 so the risk is worth it to potentially gain 50,000 than losing 6,000
- They are the same percentage chances just represented differently.
- They are the same presentation/risk.
- They are the same questions.
- They are the same situation.
- They are the same situation...
- They are the same.
- They are the same.
- They are the same.
- They both come out with a 100% chance of getting $150,000 per year.
- They both have a greater chance at getting something over 100,000/yr.
- They both have the same data.
- They both mean the same thing.
- They depict the same thing.
- They have the same data in both.
- They have the same probabilities for each amount.
- They mean the same thing
- They're actually the same situation.
- They're basically the same odds.
- They're the same
- They're the same
- They're the same probabiluities
- They're the same question, the spinners are just drawn differently.
- They're the same question.
- They're the same situation.
- They're the same situation.
- They're the same situation.
- Though I risk making a couple thousand dollars less than 100K. If I'm lucky I would have way more.
- Though the percentages are portrayed differently, they are still the same percentages.
- To me it is worth risking 6k to make 20.5k+ especially when there is a 75% chance I will make at least 20.5k.
- To me the differences between 44k and 47k and 70.5k and 75k aren't significant enough for me to not try and get 112.5k. I feel it is worthwhile to risk 3k and 4.5k to try and get 42k more. I dont think these potential loses would hurt me enough for me to worry about taking a risk.
- To me this decision came down to the top half of the table. I felt it worthwile to risk 3k in order to potentially make 23.5k. The 3k loss wouldn't impact my lifestyle as much because at 47k I'd have to watch my spending similarly as to if I had 44k . If I were to have 70.5k my life would be much more different than living off 47k
- To me, if there is at least 25% possibility of getting 112 500, it worth to try.
- Unsure.
- Went with plan that presents a chance to obtain a higher income per year.
- When ignoring the grayed-out options the percentage of chances are the same.

- While D gives a chance of earning less than the 47,000 guaranteed by C, it also offers a chance to get 70,500
- While some may respond differently, in both decisions I would likely make the same end decision. I would choose ACE over B.
- While there is possibility of getting 3000 less by choosing BCF, there is also 50% chance of getting significantly more than 50000
- Why do you keep asking me to verify consistent choices? I'm very confused.
- Why wouldn't I want to make the same choices as I did 30 minutes ago?
- Would rather take my chances of having more money then not..
- Yes, 88,000 is plenty to live with compared to 94,000, and everything else would be a nice bonus, so why not try
- You have a good chance of making more money for retirement with BDF, and only a 25% chance of making less than the conservative $50,000 in choice A.
- You still have a chance to make either 141,00 or 225,000, which is better than 94,000.
- acf has higher chance to get more money than adf
- added 75% chance of getting a sum higher than 50,000
- again, the average value of what I would earn over a number of years is much greater than the average value of what I would earn from the other choice.
- age and probability
- age and probability
- all of my answers have been the same
- as said before, 75,000 is 25,000 more than 50,000, whereas 47,000 is only 3000 less than 50,000. the potential gain outweighs the loss
- at 50 perhaps i think i will be more conservative about my financial decisions
- avoid possibility of making only 88,000/yr
- basically the same question
- basically the same situation
- basically the same situation
- basically the same situations
- bce has a higher minimum, equal maximum
- because I feel like the gain is greater than the loss
- because the average payout is higher than the other choices!
- because the chances are the same
- better chance at more money
- better chance at more money
- better chance at more money
- better chance at more money
- better chance at more money
- better chance at more money
- better chance at more money
- better chance at more money
- better chance at more money
- better risk
- better risks
- both situations are exactly the same

- both situations are exactly the same
- chance for higher payment
- chance for higher payment
- chance for higher payment
- chance for higher payment
- chance for higher payment
- chance for higher payment
- chance for higher payment
- chance for higher payment
- chance of higher pay
- chance to make more money
- chances are very similar so why not go big.
- chances of making 94k is same in both choices but with ACF i also have a chance of making 225k
- combined 50% chance for 70,500 + 25% of getting 112,500, thats better than the 50-50
- consistency is key!
- consistent thinking
- difference between 44,000 and 47,000 is not as high as the difference between 47,000 and 70,500
- dont want to making the same amount of money for 30 years
- even though they look different they mean the same
- expected value much larger than the sure option
- for C, 94000 is stable whereas D has 88000 in it. For F, 225000 is high enough for the risk
- greater chance to make more than 50 grand
- higher chance to get money
- higher chance to get more money
- higher chance to get more money back
- higher payment
- higher possible yield
- higher possible yield (more than 44,000)
- higher reward chance using ace
- i wanted to take the risk
- if you look at both, i chose C over D, and E over F. look at C and D independently, and E and F independently. risk gives you a bettter return than conservative.
- in ADE 75,000 is the highest possible sum, whereas in ACE the highest is 112,000. there is a 50% chance in ACE to get 70,500 which is not much less than 75,000. so I think it is worth a try.
- it has the same higher value but BCE is a better option because of the higher minimum value
- it's the same %, it's just presented differently
- it's the same choice as before, better to reach for a higher potential sum when the base sum (guarenteed sum 50% chance of both is similar)
- less than 50% chance I'd end up with less than 50,000 and the worst case scenarios not that much less than 50,000
- makes sense
- makes sense
- min is higher and max is higher. So I prefer BCF over BDE.
- more money

- more money in BDF
- more money in BDF
- more money in BDF.
- more money opportunity.
- more money.
- more money.
- more money. 35250+22000=57,250
- more money. 35250+56250=91,500
- more possible money, with little difference between lowest risk and conservative choices
- motre money
- my luck might help me get better outcome
- only thinking of the lower half of the graph, 141 is slightly smaller than 150, but 225 is much larger
- percentage wise they are the same
- percentage wise they are the same
- percentage wise they are the same
- percentage wise they are the same
- percentage wise they are the same
- percentage wise they are the same
- percentage wise they are the same
- probabilities are the same
- probabilities are the same and 94k is not much lower than 100k so i wanted to take the risk
- probabilities/amounts are the same
- probabilities/amounts are the same
- probabilities/amounts are the same
- probabilities/amounts are the same
- probabilities/amounts are the same
- probabilities/amounts are the same
- probabilities/amounts are the same
- probabilities/amounts are the same
- rather have a change in income in life
- risk is the same either way, all decisions are dependent
- risking for a higher sum
- same
- same
- same
- same %
- same as before
- same as before, why not make same decision
- same as previous
- same as previous
- same chance of getting 75,000, but for ADE there's a 25% of getting 70,000, again if the chance of getting 75,000 is the same, 70,000 is much greater than 47,000 than 44,000 is to 47,000. therefore it's better to risk it.

- same chance of getting 75,000, but there's 25% of getting 70,000 which is a better risk to take than going for 50% chance of getting 47,000
- same logic in both. aim for higher maximum
- same probabiliteis
- same probabilities
- same probabilities
- same probabilities
- same probabilities
- same probability
- same probability on both, just different paths. always gamble for a higher maximum if the minimum is the same
- same probability, just different paths
- same probabiluites
- same probablities
- same question
- same question
- same question
- same question
- same question, represented different pictorially
- same question, represented different pictorially
- same question, represented different pictorially
- same question, represented different pictorially
- same question, represented differently
- same reasoning as previous
- same reasoning as previous
- same same same
- same sitaution
- same situation
- same situation
- same situation
- same situation
- same situation
- same situation
- same situation
- same situation
- same situation
- same situations
- similar situations
- since the baseline in both scenarios are 50% for 47,000, it's better to risk for a higher sum, 25% for the 112,000.
- the 50% chance of getting 70,000 is similar to 75,000 but in ACE there's a 25% chance to reach for the 112,000.
- the chance of getting $44000/yr is lower
- the come out to have the same probability
- the conservative option makes it the same

- the difference between 70,500 and 75,000 is not as high as the difference between 75,000 and 112,500
- the first choice has higher chance to get more money
- the first choice has higher chance to get more money
- the first choice has higher chance to get more money
- the outcome is same
- the outcome is same
- the outcome is same
- the outcome of each choice is same
- the probabilities are the same, the drawing is different
- the probabilities/amounts are the same
- there is a possibility of getting more than 50% of 50 000 and lose as little as 3000
- there is age factored in
- there's only 25% of getting less than the conservative amount so they're worth the gamble
- these diagrams portray the same %
- they are both same situation
- they are same
- they are same
- they are same
- they are same
- they are same situations
- they are the exact same just represented differently
- they are the exact same path, just shown different pictorially with greyed out impossibilites that should not affect choices
- they are the exact same, just represented different pictorially
- they are the exact same, just represented differently pictorially
- they are the same graphical representation
- they have the same amount and same probability
- they were similar enough that I chose the same
- they're both more than the original conservative amount of 100,000
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same
- they're the same and i want to try to get more money

- they're the same just presented differently
- they're the same percents
- they're the same thing
- they're the same thing
- they're the same thing. chance of getting more than 50,000 is greater
- two situations are not extremely different
- worth the 3k risk
- worth the 5k risk at worst
- would rather have a max of $150,000/yr and a min of $94,000/yr than a higher max but a min of $88,000/yr. I'd rather avoid the lowest possible amount.
- yes
- you get more money in BCF all the time, even though there is less of a chance of winning big in the bottom option.

1.2.3 Responses from September 2013
- aa
- b/c
- bb
- cc
- idk
- idk
- idk
- idk
- lol
- lol

1.2.4 Responses from October 2013
- 50% for 108,00 seems to make BDF look safe enough.
- ACE has greater expectation than B
- ADF is much safer
- Although the expectation of E is greater than F, there is only $8000 greater. So I choose to constant choice F to avoid $20000 less.
- BCF has the greatest outcome, so why not try to get as much money as possible?
- BCF has the greatest outcome, so why not try to get as much money as possible?
- BCF has the greatest outcome, so why not try to get as much money as possible?
- Both Safer and enough greater expectation
- Even the same choice in the second situation is riskier, it has the potential for the greatest outcome.
- F contains the largest payout
- Greater expecatation in ACE
- Greater expectation in ACF
- Greater expectation in ACF
- Greater expectation in C
- Higher expectation in ACE

- I believe if there is a possibility of making a significant gain (more than $20,000) and possible loss would be relatively small (less than $10,000), then I should choose the plan that has more outcomes.
- I do not like the risk of only getting 26,000
- I don't like the risk involved in BDE
- I don't like the risk of getting 26,000
- I don't want to risk getting 52,000. 108,000 doesn't compensate for the risk.
- I prefer the safer bet for each
- I think my choices should be consistent
- I think my choices should be consistent
- I think my choices should be consistent
- I think my choices should be consistent
- I think my choices should be consistent
- I think my choices should be consistent
- I think my choices should be consistent
- I think the risk involved in BCE is worth taking.
- I think the risk of getting 72,000 was worth taking, considering the possible gains.
- I would choose C over D
- I'd rather take the conservative risk
- I'd rather take the sure bet
- Much Safer in ACF
- Much Safer in B
- Since I think the expectations of both two are same.
- There is a 75% I would get at least $72,000, which is greater than the 50% chance of getting $50,00 or less
- They are exactly the same situation, therefore having the same answer makes sense.
- They are the same
- They are the same
- They're practically the same situation, and changing choices with no real evidence that one situation is better than the other is not smart.
- Two ACFs are the same thing. And although I can get more expectations from ACF than choosing B, it is much risker in ACF.
- both risky choices give higher expectations
- essentially the same
- keep
- risky is good
- same
- same
- same Q
- same deal
- same deal
- same same
- same thing
- the same
- they are essentially the same

1.2.5 Responses from November 2013

- $135,000 was close enough to $150,000 that I thought taking the risk for the possibility of getting $225,000 was worth it.
- $40,500 and $45,000 aren't that different whereas $67,500 is significantly larger sum of money
- $67,500 > $45,000
- $67,500 and $75,000 only have a marginal gap which shouldn't affect your living standard by much but earning $112,500 will bring about far greater comfort to your retirement.
- $81,000 is close enough to the conservative amount, and so I thought taking a risk for the possibility of getting $135,000 was worth it.
- $96,000 is enough to satisfy me so why not risk getting that for a chance at getting $150,000?
- 120,000 still seems really good to me so it's worth trying to get 225,000
- 120,000 stills seems good to me so it made sense to just go for the 225,000
- 150000 per year is more reliable than the other
- 150K is good
- 225K involved, makes me consider risking getting 88K
- 25% chance of the higher ones either way
- 25% seems a bit high on possibly losing $13,000
- 26,000/yr is too low.
- 3/4 of the options with BDF are greater than of those with A. And the chance to get more than just $100,000 seems more worth it, even though there's a chance of ending up with $8,000 less. But that $8,000 seems very insignificant when you could end up getting up to $125,000 more with option BDF.
- 36K is sufficient, and chance of 75K makes the risk worth it.
- 50% chance of 88K is too high
- 50% chance of very good "conservative" outcome in each case with realtively low chance of minimum outcome.
- 50% of the time, I can make more than 100k
- 50% of the time, I will get more than 100k
- 50,000 is a good amount. Too much risk only gambling on the lower end
- 50/50 choices are unsettling.
- 72000/year is more reliable
- 75% chance of getting 72,000 trumps a conservative 50,000
- 75% probability of getting $120,000 or more.
- 94K is not too low to not risk an equal opportunity at 150K retirement.
- A 14,500 increase doesn't seem like a good thing to risk a 13,000 loss for
- A LOSS OF 20,000 WITH THE POSSIBILITY OF GETTING 30,000 IS DESIRABLE.
- A chance at getting 150K is better because the difference between 100K and 96K isnt much
- A guarantee of 72,000 dollars is better to me than the small possibility that I might only get 52,000 dollars.
- ACE is a better option and makes sense to have chosen both because they yield the same probabilities
- ACF has a higher chance of getting 80,000 while ACE has a better chance to get 120,000 or 225,000
- ACF is more conservative when compared to ACE. With more webs, it seemed like ACF was the better choice when broken down.

- ADE has chance of getting more payout
- Again I would never risk having 64,000 be my retirement plan if I could have a worst case scenario of 80,000
- Again, ACF is a better option than B because you have more of a chance of getting a higher reward and the difference between 47 and 50 is small.
- Again, I don't mind risking getting $96K for the chance at $225K
- Again, I would rather have the loss be smaller than the gains be larger.
- Again, earning 6 figure is far more advantageous than earning $75,000 over $67,500
- Again, just because the images look different does not mean the question has changed. Same question, same answer.
- Again, same decision tree and same payoff outcomes.
- Again, same decision tree and same payoff outcomes.
- Although represented differently, both BDE sequences have the same probabilities for each outcome
- Although represented differently, both BDF sequences have the same probability for each outcome.
- Although the situation is little bit different, I would make the same decision.
- Although they are represented differently, both BDE choices have the same probability of each outcome. The average payout is higher than that of A.
- Although they are represented differently, both have the same probabilities of each outcome.
- Always pick the risk that gives you a chance of a better gain!
- Asking the same questions.
- Asking the same thing.
- Asking the same things.
- Asking the same things.
- Assumed no inflation and that this is only funding after retirement, so age didn't make much of a difference. May have made a difference if in more real-world circumstances, but not sure.
- At age 35, I would never chose to be conservative. So it is essentially the same choice.
- At the time points of age 50, options C or D and E or F are the same in both scenarios, hence same answers should be expected.
- At this point the chances are equal, disregarding the first choice
- At worst I'll end up with 90,000 in all scenarios. At best (if I'm lucky), scenario BCF gives a better outcome. So I would choose that option.
- Avoiding possibility of $64,000/year when at least $80,000 is good enough. Age didn't make much difference because assumed no inflation and that this is only funding after retirement; may have made difference otherwise.
- Avoiding possibility of ending up with $64,000/year after retirement, regardless of how much I make after age 35. At least $80,000 per year is good enough. $150,000 certainly good enough and increase over $120,000 is significant enough for the $225,000 to not provoke a risky decision from me.
- Avoiding the possibility of ending up with $64,000 after age 65, regardless of how much I make as of age 35.
- Avoiding the possibility of ending up with $64,000/year after retirement, regardless of how much I make after age 35. $100,000 is good enough.

- B is more conservative when compared to ACF. With more webs, it seemed like ACF was the better choice when broken down.
- BCE in both cases represent the same information, as does A.
- BCE's expected income is higher than that of A.
- BCF's expected income is higher than that of BCE.
- BCF's expected income is higher than that of BDE.
- BDE has a higher expected income over that of BCE.
- BDE's expected income is higher than that of A.
- BDE's expected income is higher than that of BCE.
- BDF has a higher expected income than that of BDE.
- BDF in both cases offer 75% chance of earning more than $50,000/yr.
- BDF looks better than BDE, in either questions.
- BDF makes more sense anyway.
- BDF more appealing
- BDF offers less risk of earning the lowest income option than BCF.
- BDF's expected income is higher than that of BCE.
- BDF's expected income is higher than that of BDE.
- Because
- Because
- Because I believe choosing different scenarios at different times will be the most beneficial.
- Because I have a 75% chance of making at least $54000 or more while in the other there's 50% chance of getting 36000.
- Because I have the option of earning 225,000 through choice BCF
- Because I just want to. I don't really see any difference. My goal is to get a chance at getting the max money possible. Especially when the risk is only $92K. I'm fine with living a humble life. $92K is more than a humble life.
- Because I would end up with more money in the end because unless I get really bad luck I should get the 108 at least a few times in the course of my retirment
- Because I would prefer to never agree to a deal that is 64,000 a year when I could get higher than that regardless of the odds
- Because I would rather take a risk and potentially get a significant amount of money greater and even if I didnt get the 150,000 then 90,000 is still comparable to 100,000 so its not a complete total loss
- Because by multiplying the probabilties, you see they are the same.
- Because even though there is a chance to make over $200k a year, there is still a chance to only make $52,000. Because of this, it is better to play it safe with $100,000 a year.
- Because for the first situation, the E choice is inside the larger frame of the choices. But overall, the situations for both cases are the same because they gave same number.
- Because getting 50,000 guaranteed is better than risking money and ending up with only 32,000
- Because in either questions, choosing BCF gives me a 50% possibility of getting less than 50,000 and 50% of more than 50,000. This risk appeals to me because 43,000 is only 7000 less than 50,000, while the possible increase is higher than the loss.
- Because it is worth the risk to make more than 36,000 by selecting E
- Because my likelihood of getting similar amounts will not be affected greatly.

- Because preferences can be different at different time periods. I do not think the two are considerably different in one being inherently more favorable to my risk behavior than the other.
- Because the boxes on the left show the same probabilities of getting each income and the boxes on the right do as well.
- Because the chance of 150,00 is 50%, the chance of 141,000 is 25%, and the chance of 88,000 is 25% in both cases ADE.
- Because the conservative options are still the choices I would go for.
- Because the odds are the same.
- Because the payoff is higher for ADF
- Because the probabilities of each outcome are the same.
- Because the question you're asking is the same in each case, you're just showing the questions differently.
- Because the two choices are mathematically the same
- Because the two questions mathematically represent exactly the same choices, just in visually slightly different ways
- Because there is a 25% chance of 225,000, a 25% chance of 141,000 and a 50% chance of 94,000 in both choices ACF. If I chose ACF over B one time, I should make the same decision given the same choices the next time.
- Because there was no other option choice.
- Because there's a 50% chance of getting 64,000 which I think is a lot less than a conservative 80,000
- Because these situations offer me the possibility of making the most money.
- Because they are different enough to warrant the risk
- Because they are the exact same thing, just a different display.
- Because they are the same
- Because they are the same model and I'm at the same age. they shouldn't be different.
- Because they are the same situation
- Because they are the same thing?
- Because they have the chance of making over $200K a year which is a large enough incentive to take the risk in both questions.
- Because they're basically the same options
- Because what age you currently are should not have a huge effect on what you will do in the future when taking into consideration the same age.
- Because with the conservative choice, I would be getting $150,000
- Because you
- Because you
- Because you have the same risk in both
- Because you're asking the same question in both situations, you're just giving two different visual representations of the same concept.
- Because you're taking a risk, and it has to be worth it.
- Being conservative
- Being conservative
- Better chance at 72000 in the choices I made. Better probability of getting a higher income.
- Better odds in BCF than BDF
- Better odds of more money.

- Better option
- Both BCF and BDF offer 25% chance of earning the highest income of $112,500/yr, but BDF offers 50% chance of earning $64,500/yr compared to BCF's 25% chance. BCF offers 50% chance of earning $43,000/yr instead.
- Both BCF choices have the same expected return.
- Both BCF have the same probability for each outcome and a higher average payout than BCE.
- Both BCF sequences have the same probability for each outcome and a higher average payout than A.
- Both BDE sequences have the same probability for each outcome and have a higher average payout than sequence A.
- Both BDF pathways follow the same probabilities. And will have a higher average payout that option A.
- Both D choices have the same probability for each outcome.
- Both F choices have the same probability of each outcome. And a higher average payout than E
- Both are the same probability/scenario. Consistent in both answers. 88K is too far below 100K for it to be risked for me in this scenario.
- Both better payouts than conservative
- Both choice involved risk over a lower conservative. I found taking the risk in both was in my best interest.
- Both choices are offering the same amount with the same percent it is just a change in the representation
- Both choices are offering the same low value but the two that I have picked offer a higher chance at getting a higher value.
- Both choices have the same expected reutrn
- Both choices of BCF over A represent the same thing
- Both choices show equal probabilities of getting each outcome.
- Both compare to the conservative option of $50,000
- Both lead to 50% chance of $225,000 payoff and 50% chance of $141,000 payoff when you choose C
- Both of the options give me the same amount of maximum money adn both offer the lowest amount.
- Both possibilities are eventually the same. It makes sense to have same decision
- Both provide a 50/50 of either $96k or $144k or more. It is worth it to make this choice because I have a 50% chance of losing $4k (by not going with option B), but I also have a 50% chance of getting $44k or more.
- Both scenarios offer the same initial gamble at age 35 between two paths leading to the same retirement plans. I do not believe that the additional decision-making opportunity at age 50 in the second scenario justifies choosing B over ACF.
- Both scenarios say the same thing.
- Both situations have the exact same results
- Both situations have the exact same results with the same probabilities.
- Both situations have the exact same results with the same probabilities.
- Both situations have the same results. the opportunity to get 150K is why I chose ADF. 100K is similar enough to 96K.
- Both situations offer the same statistical odds of reaching the three respective outcomes.

- Both situations represent the same conditions and choices available.
- By multiplying the probabilties, you see that ACF as the same choices for both cases
- C option seemed like the best bet in both cases
- CHANCE OF GETTING LESS THAN CONSERVATIVE WAS TOO HIGH
- CHANCES OF GETTING HIGHER SUM
- Chance for 64k is too high
- Chance for more money, higher expected value
- Chance looks higher
- Chance looks higher in the way it present differently.
- Chance looks higher in the way it present differently.
- Chance looks higher in the way it present differently.
- Chance looks higher in the way it present differently.
- Chance looks higher in the way it presents differently.
- Chance looks higher in the way it presents differently.
- Chance looks higher in the way it presents differently.
- Chance of getting more money
- Chance of getting more than 100,000 is greater, and the amount of money you would get less than 100,000 is not a lot
- Chance of getting substantially more for a risk of getting not that much less.
- Chance of making more money in both and the difference if get the smaller amount is not that much, so worth it
- Chance of more gain than just 100,000
- Choice D limits my earnings to the max of $64,500/yr. Choice F's lowest expected income is $64,500/yr. I have nothing to lose to choose Choice F. In fact, I have 50% chance of earning an income higher than the best income Choice D can offer. Choice D also entails 50% chance of earning $37,000/yr, the worst.
- Choice between E or E, I would choose F
- Choosing C over D should be the same regardless of whether E/F is still an option. Since the C/D and E/F choices are made completely independent of each other, each decision should be made as if you are already in that situation
- Consistency.
- Consistency. Also, there is a chance of 225K per year, and in either case the lowest amount is 94K, which isn't terrible.
- Consistent answers.
- Consistent answers.
- Consistent answers.
- Consistent answers.
- DO NOT WANT TO RISK GETTING 64,000
- DON'T LIKE SAFE CHOICES, BORING
- ELIMINATE CHANCE OF GETTING 64,000
- ELIMINATE RISK OF GETTING 64,000
- Each payoff has the same statistical odds of occurring in both scenarios given the certainty paths presented.
- Each payoff has the same statistical odds of occurring in both scenarios.
- Each payoff has the same statistical odds of occurring in both scenarios.

- Each payoff has the same statistical odds of occurring in both scenarios.
- Each payoff has the same statistical odds of occurring in both scenarios.
- Each payoff has the same statistical odds of occurring in both scenarios. The second scenario removes the option of B, but that does not change the statistically-adjusted payoffs of C and E.
- Each payoff has the same statistical odds of occurring in either scenario. $112,500 = 25\%$, $72,000 = 50\%$, $46,000 = 25\%$.
- Equal probability
- Equal probability
- Equal probability
- Equal probability
- Equal probability
- Equal probability
- Equal probability
- Equal probability
- Equivalent chances for each payoff in both cases.
- Equivalent chances for each payoff.
- Equivalent chances in each scenario.
- Equivalent payoffs in both cases.
- Even though ACE could be more risky than the B choice, its gain is much higher.
- Expected payout is greater for ACF: 56250+30000+40000= 126,250 compared to 100,000 for B
- F has a higher expected return than D and E
- F resulted in higher EV
- Given no inflation and that this is only funds after age 65, age during decision was not factor for me.
- Good chance of getting more than $100,000, and worth the risk
- Greater amount of money on the line
- Greater expected value.
- Greater expected value.
- Greater expected value.
- Greater expected value.
- Greater expected value.
- Greater expected value.
- Greater expected value.
- Having the guarantee of getting 150,000 favors the smaller chance of getting either 108,000 or 225,000.
- Here there is the same chance for getting 150K but a higher chance for getting 144K.
- Here, the probability of getting an amount in the $70,000s was high enough to pick BDF over BCF.
- High enough chance of making >100,000 to outweigh other option
- High enough chance of making >100,000 to outweigh other option
- High enough chance of making >100,000 to outweigh other option
- High enough chance of making >100,000 to outweigh other option
- Higher chance of making more than $100,000.
- Higher chances for higher income.
- Higher expected value

- Higher expected value
- Higher expected value
- Higher expected value, more chance for more moeny, tehy are the same situations
- Higher gain by calculation with use of probability
- Higher money options available; 36,000/yr would not be too low.
- Higher reward for the risk
- Highest payout
- I DO NOT WANT TO RISK GETTING BELOW $80,000
- I am okay with risking 64k here I guess since it's oonly 25%
- I am still ending up with alot of money in each outcome.
- I am willing to risk getting 92K for $225K
- I believe that the choices are different because the options change guarantees.
- I can risk a 80,000
- I chose ACE over ADE because I calculate the gain for each case with summing up all the probability*amount of the money, so that is why I choose it over ADE.
- I chose ACF over ADF twice because in all scenarios (ADF and ACF) theres is a 50% chance of getting $48,000. ACF then has a larger probability of getting a higher income.
- I chose BDF because even though 37,000 is less than 43,000, I have 25% chance of getting less than 50,000 in BDF and 75 % of getting more than 50,000. On the other hand, BCE has 50% of loss and 50% of gain.
- I chose C in both because it is the same probabilities. And it offers a chance at 225K.
- I chose F because I can gain more using that option over any other option
- I could potentially live of of 36k. I don't think I could live comfortably off of 26k.
- I did not want to risk losing 19,000
- I did not want to risk losing 19,000
- I did not want to risk losing 19,000 in this situation
- I did not want to risk losing 19000
- I didn't want the chance to drop down to 32000
- I do not want the certain outcome here and would rather play with my options
- I don't like chances of getting $37,000
- I don't like having 1/4 chance of losing $13,000
- I don't like having a 25% chance of getting 37,000 a year
- I don't like risking too much loss if I get EF, but if I only stand to gain from choice C, then I'll go for it.
- I don't see much harm in taking a chance in getting more or less if it's above $50,000 anyway
- I don't think there is any difference between these two except the way you're choosing to show it visually.
- I don't want to be slated for $50,000. There is an equal chance of a high reward as there is a small loss.
- I don't want to risk 64k here
- I don't want to risk to get a 64,000
- I dont like the conservative payout
- I felt all amounts provided were reasonable amounts for retirement so I was willing take a risk and chose F. Even if I ended up with the least amount, $108,000/year, I would have been okay with that.

- I felt like my choice was less riskier
- I have a 50% chance of getting 150k in both the top an bottom, this option is better than the 505 chance of 141k in bdf at bottom
- I have a 50% chance of getting more than $100,000.
- I have a 75% chance of getting $120,000 or more.
- I have a 75% chance of getting more than $80,000.
- I have a cghance of getting 225 k
- I have a good possibility of receiving greater than $100,000
- I have an opportunity to make more. I think the chance is worth it
- I have more of a gain than loss with the risk because there is a bigger difference between 75,000 and 50000 than 36000 and 50000.
- I have the same probability of income with both options
- I have the same probability with both options
- I have the same risk in both
- I like having more options
- I like my logic
- I like the probability of higher payoffs even if it comes with increased risk
- I like to idea of having a 50% chance of getting $150,000.
- I made the same choices because they have the same breakdown of odds
- I picked those because I thought that 75% of the time in both of those situations you wojuld make more than 100k
- I prefer BDF, because in the end, if I choose BCF, there is a 50% of getting the amount less than 50,000. But if I go with BDF, only 25% of getting less than 50,000.
- I prefer any chance that excludes 81,000
- I prefer more choices
- I rather take my chances with the minimum being 90,000 than take my chances with the minimum being 81,000
- I realized that I would want to take the risk because sixty thousand dollars is still a large sum of money but the possibility of F also offers the chance of gaining over one hundred thousand dollars which is worth the risk.
- I really don't want to end up with 64,000
- I take more risk if there's less of a chance to lose
- I think 150,000 is enough for me to retire on, so I'd rather have a 50% chance of getting this amount, compared to a 25 % chance of getting 108,000 and 25% chance of getting 225,000.
- I think it is better to choose risky chance than conservative chance because what I can gain is higher than what I have to loose.
- I think the chance to get 75/yr is pretty good and then the difference between 47 and 50 is not that large.
- I think, thinking about this option, it makes more sense to stick with the 75k because it would be more responsible.
- I tried to estimate which one had the highest expected value. being conservative didn't increase net income at all.
- I want a chance to get 225k
- I want more options
- I want the same choices because I don't want to have a 50% chance at a guaranteed $43,000

- I want to avoid making the smallest amount of money. If I can take a chance on avoiding $37,000 or $43,000 I will
- I want to avoid the chance of getting 81,000, so I chose the options without it. Even if there is a chance to get more than 150,000 If 81,000 is the minimum I should be able to live just fine even if I end up with only 90,000 or 150,000.
- I want to make the same choice because even though they are broken down differently, the odds of getting the various amounts are the same in both situations
- I want to make the same choice in these two situations because they are the same situation. I can either be guaranteed $100k a year, or risk losing $4k for the 50% chance of getting $150k a year. I feel the $4k risk is worth the $150k reward.
- I want to make the same choices because either way, I would rather be safe and get the guaranteed amount
- I want to make the same choices because even though the breakdowns are different, I would rather take these risks than have a 50% change of guaranteed $43000
- I want to make the same choices because it seems like the odds of earning the various amounts are the same in both situations
- I want to make the same choices in these two situations because in both cases, the risk is worth the reward.
- I want to make the same choices in these two situations because while the lowest I can get in ACE is $92K, though in ACF it's $96k, I have a 75% chance of getting $144k or more, while in ACF I have a 50% chance. I feel that the 75% chance of getting more than $144k is worth the 25% chance of losing $4k.
- I want to make the same two choices because the average amount I could get in BDF is higher than BDE
- I want to risk getting $96K for chance at $150K.
- I won't mind taking a chance with 64k here since it's 25%
- I would be quite content with a 50% chance of getting $150,000.
- I would be very comfortable having $100,000/yr. However, any risk of only having $52,000/yr. is a risk I would not want to take.
- I would make the most amount of money,with this choice.
- I would make the most money with this .
- I would much rather have the security of having the 50,000 then trying to live off of anything less.
- I would never risk having 64,000 as my retirement plan
- I would never risk having 64,000 be my retirement plan
- I would rather have a guaranteed $100,000/year than deal with the possibility of having $72,000/year.
- I would rather have the guarantee of 100,000/year. The possibility of having 72,000/year deterred me from choosing the other option.
- I would rather keep my allowance at $50,000 than risk it dropping down to $37,000
- I would rather take on the greater risk and greater payoff.
- I would rather take risk for higher pay
- I would want the chance at having more money
- I'd like a chance to receive 250000
- I'd like a shot at 150000

- I'd like a shot at getting 225000.
- I'd like the chance at getting 135000.
- I'd like to take a shot at receiving 225000
- I'd like to try my luck at getting the 225000
- I'd never agree to 64,000
- I'd rather cut my losses than end up with 81000
- I'd rather not risk ending up with 81000
- I'd rather not risk ending up with 81000.
- I'm going to get less than 100000 if I go the conservative route so I might as well risk getting 81000 for a chance at 135000.
- I'm not very risk averse. I would live out the rest of my years (once I reached 65) knowing I had risked making slightly less than 100,000 (if I got the 81,000 option) or more likely, got an amount over 100,000
- IF I end up with 90,000 it's only 10,000 less than just getting 100,000 which doesn't seem that big to me. So I'll take my chances to get more.
- If I have the possibility of getting 64,000 as my retirement plan I might as well go for the most money
- If I must have the chance of getting 81,000 I would also like the chance to get 225,000.
- If needed, I would rather the loss of fund be the least amount, even if the gains for the alternative are greater.
- If the choice is between E or F in both cases it doesn't matter what could have been won (C or D) because they are no longer a possibility.
- If there is a chance at 150,000 I will take it. If I am unlucky and I only get 90,000. It is still more than 81,000 and it is only 10,000 less which is a bet I am willing to take.
- If you're faced with making Decision D, you're not comparing it to the payoffs of E and F. It is only mutually exclusive with Decision C, and I will always think it's better than C.
- In BDE, I have 75% chance of earning an income higher than the income offered by A.
- In both cases, BCF has a higher expected income than that of BCE.
- In both cases, there is a greater chance that I can make more than 40,000 a year
- In both cases, you have 50% chance of earning $75,000/yr, 25% chance for $64,500/yr, and 25% chance for $112,500/yr.
- In both choices the likelihood of getting greater than 36,000, is highest in choice ADE.
- In both choices, the chance of getting a moderate value (150,000) is relatively high and this is more important to me than a small chance of getting a very high value.
- In both of these choices, DF is riskier, but the risk is close enough to the conservative value that it might be worth taking for a greater reward.
- In both of these choices, F is riskier, but the risk is close enough to the conservative value that it might be worth taking for a greater reward.
- In both scenarios, the end probabilities are the same. For some reason I am willing to take the risk for 64,000 because it only has a 25% while 80,000 has a 50% chance.
- In both situations there is a 75% chance that I will have over $70,500 per year. It is worth the risk.
- In both situations, I have a 75% chance of getting $144k or more (and a 25% chance of getting $225k) if I choose ACE. In the ADE option, I have a 75% chance of getting $144k ore more, but

the most I can get is $150k. The 25% chance of $225k, especially considering the 75% chance of more than $144k, is worth giving up a 50% chance of $150k.

- In both situations, there is a 75% chance of getting $144k or more. While the same chances are available in option ADE, the largest sum of money I could get in option ADE would be $150k, while I could get $225k for option ACE.
- In both situations, there is a 75% chance that I can make more than 50,000/yr
- In both these instances, I felt that I would rather just take the 100,000 than risk getting 81,000 if at most I would only get 150,000
- In case 1 you're giving yourself a 25% chance at $70,500/yr compared to the guaranteed conservative value in the second option. In case 2 you're minimizing the chance the lowest value.
- In case 1 your odds of a higher value than the conservative are good and in case 2 the potential gain of the 50/50 chance offsets the loss of the lower value compared to the conservative value.
- In choosing between E or F in both situations you are offered the same options with same possible outcomes and probabilities, hence if you are rational you shouldn't have different responses.
- In one of the situations, you can make a choice at Age 35 and in the other, you had already made that choice (grayed out). The remainder of my choices at age 50 were the same.
- In option BCE I have to opportunity to gain more than I would lose and the possible loss of 10000 isn't too bad
- In terms of probability, the situations are equivalent, so the same choice makes sense.
- In the first one, there's a 75% chance that I will get over 80,000, so I will take that option. In the second one, there is also a 75% chance that I will get over 80,000 so I will take my chances.
- In the first set, it didn't matter because there were no conservative choices and ACF had a higher incentive ($225,000 versus $150,000). In the second set, I felt like I would gain more in the C path and I would be secure choosing the F option
- In the second one I would rather the opportunity to go higher
- Increases your chance of making 60 or more, which is a decent income
- It involves less choices and more risk.
- It is a safer option.
- It is like choosing the exact same option. I need to have funds guaranteed if I am approoaching retirement.
- It is once again the same probabilities.
- It is the exact same chances.
- It is the exact same choice, nothing is different.
- It is the exact same decision tree, so the decision should be the same.
- It is the same probabilites.
- It is the same probabilities either way.
- It is the same thing. youi have equal chances in both.
- It makes sense because allowing any chance of only making $52,000/yr for retirement is too big of a risk to take.
- It makes sense because it eliminates the choice of having the risk of only making $52,000/yr.
- It makes sense this way.
- It makes sense to choose ACE over ADF because the higher the risk it is, the higher the gain. I think due to the fluctuations of the economic cycles, there is no need to be conservative, and to invest more even with more risks could have a higher gain.

- It makes sense to choose ADE over AEF because for the same reason I have mentioned before in the previous problems.
- It makes sense to have the same answer because you're comparing it to the same situation but without all the non choices
- It makes sense to have the same choices because $52,000/yr is lower than my comfort level of living and is a risk that I would want to avoid.
- It makes sense to have the same choices because both give you a chance to make over $200K a year.
- It makes sense to have the same choices because there is a chance of making over $200K a year.
- It makes sense to make the same choices because the breakdowns of the odds are the same
- It makes sense to more or less "gamble" with the possibility of a bigger payout than take the guaranteed $50,000 from the start.
- It makes sense to risk the percentage of getting $92,000 for the chance at getting $225,000 in both cases.
- It represents the same probabilities.
- It seems like a good chance to increase from 50,000
- It seems more likely to get above 80,000
- It was random.
- It's a simple choice.
- It's better to bet for 6 figure than otherwise
- It's better to take risks when the loss is only a few thousand.
- It's the same question
- It's the exact same question.
- It's the exact same question.
- It's the same probability, and if I am unlucky and only get 90,000 a year, I will only have lost 10,000.
- It's the same question just displayed differently.
- It's the same question just displayed differently.
- It's the same question, it's just displayed differently.
- It's the same question, of course it makes sense to have the same answer.
- It's worth it to have more of a chance of getting $108,000 even if there is a risk of getting $52,000 (when the lowest would be $72,000 in the other question)
- Its the same chart in both situations. I am wiling to risk a little to gain more money.
- Its the same thing
- LOWEST POSSIBLE IS $47,000
- Less loss > More gains
- Less loss is more financially responsible.
- Lowest possible minimum outcome.
- MINIMIZE CHANCE OF GETTING 64,000
- MORE MONEY
- MORE MONEY
- MORE MONEY
- MORE MONEY
- MORE MONEY
- MORE MONEY $$

- More chances of higher payout and less of loss.
- More likely to make more money.
- Multiplying the probabilities shows that both ADE choices have the same probabilities . 50% for 150,00, 25% for 141,000 and 15% for 88,000
- My chance may not be as high as just going for the 100k, but I will have more money.
- My goal is to risk for a chance at the most money possible. So it makes sense to choose BDF in both cases as I get a chance at $225K compared to a chance at $150K if I were to choose BDE.
- My odds appear to be the same
- My odds are the same
- My thinking is that I have a 75% chance of getting in the 70,000 range with BDE, which is higher than the 50% chance of 75K in BCE.
- My thought was that BDF had a 75% probability of receiving more than $44,000 which was more appealing than the 50% chance of receiving more than $47,000 in BCF
- NO inflation and this would be only funding after retirement regardless of how much I'd make as of age 35, so age wasn't a factor to me.
- No matter what happens, I'll be getting over 50,000 anyway
- Not worth taking the risk of getting $52,000 only for the possibility of getting a max of $150,000
- Not worth the risk of getting $72,000 for only a possible benefit of $50,000 more.
- Odds are the same
- Odds are the same
- Odds are the same, in the first I was limited by the grayed out options whereas in the second I was able to make multiple risky choices
- Only have
- Only have
- Option C offers a 50% chance of receiving $112,500 a year and a 50% chance of receiving $72,000 a year in both scenarios.
- PERCENTAGES ARE GENERALLY EQUAL. DO NOT WANT RISK GETTING 64,000
- POSSIBILITY OF MORE MONEY, EVEN IF LOW CHANCE
- Payoff, risk same
- Payoff.
- Payoff.
- Percentage-wise they are the same.
- Percentages are equivalent. They are asking the same thing but with more steps shown in the second problem than the first.
- Prefer risk, greater rewards
- Present similar odds that are more favorable to the other option.
- Probabilities are the same
- Probability wise, both situations represent the same thing so it makes sense to have the same choices.
- Provides me with opportunity to get more than 100,000 and 90,000 isn't a bad alternative. Benefits outweigh costs
- Questions are identical.
- RATHER BE CONSERVATIVE THAN TAKE CHANCE OF LOSING MORE MONEY
- REalized now that they are the same, just framed differently
- RISK TAKER

- RISKIER
- Represent same value
- Responses are consistent
- Risk of $64k too high for me
- SAME PROBABILITY
- Same answer to both questions, and risk of 88K is small enough in this scenario compared to the last one.
- Same as before - I think it's worth trying to get 225,000 since 120,000 is still decent
- Same chances
- Same chances
- Same chances
- Same chances
- Same chances.
- Same chances.
- Same expected value that is higher than the expectged value of ADF
- Same options in each case; ACF offers better payoffs.
- Same outcome and process if given the choice for C or D
- Same outcomes
- Same probabilities
- Same probabilities in BDF
- Same probability for the same outcomes
- Same probability of payoffs
- Same probability of payoffs
- Same probability of payoffs
- Same probability of payoffs
- Same probability of payoffs
- Same probability of payoffs in both situations
- Same question, slightly different image. Meaning didn't change so the answer shouldn't change
- Same scenario
- Same scenarios hence same responses are expected.
- Same situation
- Same situation
- Same situation
- Same situation
- Same situation regardless of C/D, the EV of F over E is greater.
- Same situation, same choice
- Same situation, so same decision
- Same situation, whether or not E/F is in the picture or not. EV is the deciding factor.
- Same structure
- Seemed like the same scenario where F is a safer bet.
- Similar payoff, risk
- Similar situations
- Similar structure.
- Since i am facing the same possibility and same amount of many

- Situations are equivalent in terms of probability, so it makes sense to have the same choice for both.
- Situations are equivalent in terms of probability, so it makes sense to have the same choice for both.
- Situations are equivalent in terms of probability, so it makes sense to have the same choice for both.
- Splitting the picture into 2 boxes does not change the question. Both of these situations are identical, so the answer should be the same
- Statistically the same
- Statistics are the same
- Still has highest payoff and minimum
- THE CHANCE OF GETTING LESS THAN THE CONSERVATIVE AMOUNT IS VERY HIGH
- Taking risks at higher amounts doesn't make me as nervous.
- The $3,000 difference is not enough to securely choose the $50,000 guaranteed.
- The 25% chance of getting a significantly lower amount of 52,000 deters me from BDF.
- The 75% chance of receiving more than $44,000 is more appealing than the 50% of receiving more than $47,000.
- The ACE scenario provided me a greater chance of getting a value over 90,000
- The BDF shown in both questions has the same probability, just said out differently in sequence. The risk would be the same however.
- The alternative choce is the same,
- The answer BDF represents the same information in both cases, just shown in different ways, ie. 50% of 50% = 25%.
- The average payout for BCF is higher than BDE
- The average payout in BCF is greater than in BDE
- The average payout is higher in the DF sequence. Also, assuming I've already made choice B rather than A, the probabilities are the same for each outcome.
- The benefits and detriments are essentially equal so the answers should be the same
- The benefits outweighed the potential losses
- The bottom diagram is identical to the above diagram, it's just consolidated the 70K option.
- The breakdown of the odds are the same
- The chance exists to have more money and same risk of getting little money exists in the other one but with out the risk of getting 225,000
- The chance of getting 52,000 deters me from BDE.
- The chance of getting 52,000 deters me from BDF.
- The chance of getting 52,000 deters me from D.
- The chance of getting 52,000 deters me from choosing BDE
- The chance of getting an amount greater than 90000 is greater than getting 81000.
- The chance of getting less than 100,000 is only 25%
- The chance of getting more than 100,000 is greater, and the chance of getting less than 100,00 is smaller and the amount isn't much less
- The chance you have ends up being the same in both. And you have a much higher chance of getting more than $100,000 in both. And again, even if you do end up with $92,000, it's only $8,000 less than $100,000, which really isn't that bad and I'd say is worth the risk.

- The chances are all equal
- The chances are almost just as likely
- The chances are identical.
- The chances are thes ame
- The chances for each payoff seem the same in both cases.
- The chances of earning the different amount of money is the same. It is only structured differently.
- The chances to end up with any amount of money are the same in either option.
- The choices are basically the same
- The choices are essentially the same so it makes sense to have the same answers
- The conservative value is too low for my liking
- The difference between 225000 and 150000 is significantly more than the difference between 135000 and 150000
- The end probabilities are the same
- The end probabilities are the same.
- The end probabilities are the same.
- The expect value for E is higher than for F
- The expected value (EV) of choosing BDF is greater than that of the alternative.
- The expected value is above 50,000, so it seems worth taking the chance.
- The first ADE option and the second ADE option basically say the same thing. Which is also true for the first ADF option and second ADF option. Both situations are exactly the same.
- The first scenario only offers a decision-making opportunity at age 50. However, the paths are already decided in each case, so they should yield the same statistical odds of each payoff.
- The gain is greater than the loss so worth it.
- The guarantee of 100,000 is more appealing to me than the small chance of getting 72,000.
- The guaranteed earning is $50,000 for conservative investment, but if you decide to be more aggressive, you have 75% chance of earning more than the guaranteed return and only 25%change of earning less.
- The higher risk has a higher payout
- The lowest amounts are still rather large and there is always more chance to get more later.
- The lowest values are reduced in odds.
- The minimum in all is 90,000 which I am fine with. However, the maximum in the first two is 225,000 which I will take my chances in getting.
- The odds are equal in both situations
- The odds are essentially the same. Either way, you ultimately have a 25% chance of getting $92,000 and $144,000 and a 50% chance of getting $150,000. And this is clearly better than BCE because it has an entire 50% chance of only getting $96,000, which is pretty similar to $92,000. And you'd want to have the lowest chance of getting that, which comes with the BDE option.
- The odds are identical, simply written in different ways.
- The odds are identical.
- The odds are identical.
- The only difference is between E of F and I prefer F, because either 64,000 or 112,500 will satisfy me since its higher than the amount i began with (50,000)
- The outcomes are ultimately the same for both.
- The outputs are maximized and the lowest values are made the lowest odds.

- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs in each scenario have the same statistical odds of occurring.
- The percent chances are essentially the same. So, it's better to have only a 25% chance of getting $92,000 than having a 50% chance of getting only $96,000. And If you have a 50% chance of getting $144,000 vs. $150,000, those are close enough to have a negligible difference between them. Clearly it's worth having that extra chance of getting $225,000 possibly then.
- The percentages and chanecs are equal
- The percentages are essentially the same for both situations, and I believe both are worth the risk of ending up with more than $100,000.
- The percentages are the same, just in different sequence. I don't mind risking getting the $92K for chance at $225K.
- The possibility of getting $50,000 more isn't worth the risk of maybe getting $52,000.
- The possibility of having $72,000/year is the same in both situations but there is a possibility for more money in BCF.
- The possibility of only having 52,000/year deterred me from choosing BDE.
- The potential for greater than 50,000 is higher than 50%.
- The potential gain of the 50/50 chance offsets the loss of the lower value compared to the conservative value.
- The potential gain of the 50/50 chance offsets the loss of the lower value compared to the conservative value.
- The potential gain of the 50/50 chance offsets the loss of the lower value compared to the conservative value.
- The potential gains offsets the loss of the lower value compared to the conservative value.
- The potential gains seem to be more likely than the potential losses
- The probabilities are the same
- The probabilities are the same
- The probabilities are the same.
- The probabilities are the same.
- The probabilities are the same.
- The probabilities are the same.
- The probabilities of each outcome are the same
- The probabilities of each outcome are the same in the two BDF situations.

- The probability for the same outcomes is exactly the same
- The probability of getting $150K in both BDE and BCE is the same. So that does not matter anymore. So I went with BDE because it had a chance at $144K which is still better than a higher probability of landing on 96K. I don't mind risking getting 92K, especially when the probability is only 25%
- The probability of getting an amount in the 70s or 110s was high enough to not choose a 50% chance of 75K in BCE.
- The prospect of earning higher income was good enough for me to take the risk.
- The reward of F is much greater than that of D and close enough to the value of E that taking the risk was worth it.
- The reward of taking the risk in F is much greater than the conservative choice of E, which is why I chose F.
- The risk in both seemed worth it.
- The risk is worth it because 225,000 is more than twice as much as 100,000
- The risk of earning the least amount of money is less than 50% in both these options.
- The risks and rewards are esentially the same but presented differently (probability is same of getting all money).
- The risks and rewards are the same they are just presented differently.
- The risks and rewards are the same.
- The risks and rewards are the same.
- The risks are the same in both options.
- The risks are the same in both options.
- The risks are the same they are just presented differently.
- The same choice I made for the previous questions, for its higher possibility of gain.
- The same reason I have mentioned before, why it asked so many times. One has more gain than another even though it might be more risky.
- The same reason as before. I am only comparing Choice F with Choice E when deciding whether or not to pick F, so it doesn't affect my decision.
- The situation is exactly the same given the scenario.
- The situations are the same
- The tradeoffs are the same
- The two boxes have yield different average incomes.
- There are better minimal options.
- There are equal chances
- There is a 50% chance of getting $135,000 through BDF, and I thought that was worth the risk compared to the 100% guarantee of $100,000.
- There is a 75% chance I will get $72000 or higher with ADE. Only a 50% chance of getting 75000 in ADF.
- There is a 75% chance of getting more than 50,000 in ACE whereas B you are guaranteed only 50,000
- There is a better chance at gaining higher amounts of money
- There is a chance at 225,000 dollars per year.
- There is a chance at the highest amount of money
- There is a chance of getting $225,000 in both, and it is worth it for the risk of getting $72,000.
- There is a chance to have 225,000

- There is a chance to make more than the conservative option. Even though there is also a chance to make less, the opportunity to make more appeals to me
- There is a good chance that you can make more than 50,000, by choosing ADF.
- There is a high chance at the high amounts of money
- There is a possibility that I may end up with $52,000/year. I would rather have $100,000 guaranteed.
- There is goof chance of more money in both.
- There is more cash involved.
- There is more opportunity for over 100k.
- There is no risk, and you do not have to risk having the lowest amount per year
- There is no way to look at this.
- There's a 75% chance og getting more than 100,000
- There's a greater change of getting above 120,000
- Theres a chance to make more than the conservative option
- These are the same choices. BDF over a = BDF over a.
- These questions are identical.
- These two questions are asking the same thing.
- These two questions are exactly the same, and I did not want to risk losing 19,000
- They all equal out to be the same percentages of getting the same salaries.
- They are
- They are
- They are about the same but on different stages, but their causation are the same.
- They are asking the same thing.
- They are basically the same
- They are basically the same choice
- They are basically the same situation, where I choose the option with a $112,500 payout.
- They are both 50% 150, 25% 120, 25% 64
- They are both comparing and asking the same things. One choice is more simplified than the other.
- They are both more payout than the other
- They are both the exact same situations.
- They are both the same percentages and would not like to take the risk
- They are equivalent to me
- They are essentially the same
- They are essentially the same, percentage-wise.
- They are identical scenarios.
- They are identical scenarios.
- They are identical situations but grouped together differently.
- They are identical situations.
- They are identical situations. I am content making $75,000.
- They are identical.
- They are identical. It makes sense to seek the 25% option of a payout of $112,500.
- They are more simple and conservative
- They are much better than the conservative one.
- They are the exact same choices essentially

- They are the exact same question.
- They are the exact same question.
- They are the exact same scenarios.
- They are the same
- They are the same
- They are the same
- They are the same
- They are the same
- They are the same
- They are the same
- They are the same
- They are the same
- They are the same
- They are the same chart and I am willing to take the riskier situation to make more money.
- They are the same chart and I am willing to take the riskier situation to make more money.
- They are the same chart, and BCE seems more profitable.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
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- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.
- They are the same chart, displayed differently and I am willing to take the riskier situation to make more money.

- They are the same chart,one is simplified, and I am willing to take the riskier situation to make more money.
- They are the same essentially
- They are the same exact choices
- They are the same in my opinion
- They are the same probabilities.
- They are the same question.
- They are the same scenario
- They are the same scenario, if you ignore how the pictures present it, in both cases you have same outcomes with same probabilities, hence you should have the same answer to both.
- They are the same situation in different layouts
- They are the same situation.
- They are the same situations.
- They are the same to me
- They are the same to me
- They are the same, percentage-wise.
- They are the same, percentage-wise.
- They are the same.
- They are the same.
- They are the same.
- They are virtually identical
- They both give a chance of the highest outcome. Which is hwat I want. Even with the risk
- They both give on average higher values
- They both have a 50% chance of having 150k, and 25% for the other two options
- They both have a chance of getting more than 100,000
- They both have more opportunity for more money.
- They both have the same chances of getting the same amount of money.
- They both offer a 50% chance of $144k or more. In AC, the 50% chance of $22k is worth the 50% chance of losing $6k (since I did not go with the conservative $150k). The same is true for AE.
- They both offer me to make 225 k, so I want to take that chance.
- They each yield different average incomes in the long-run.
- They each yield the same average income in the long-run.
- They give the same chance for each option.
- They give the same percentage chances for the same values.
- They give the same results.
- They have the same chance of getting the different amount of money. Only the structure changes.
- They have the same chances at the same values.
- They have the same percentages
- They have the same predicted value.
- They have the same predicted value.
- They have the same predicted value.
- They have the same predicted value.
- They have the same predicted value.
- They have the same predicted value.

- They have the same predicted value.
- They have the same predicted value.
- They have the same predicted value.
- They offer the same values with similar percentages that is why I chose them.
- They offer the same values with similar percentages that is why I chose them.
- They present the same situation
- They represent the same probabilities.
- They represent the same probability. I would take a risk to get the $112,500.
- They represent the same thing
- They represent the same value
- They represent the same value
- They represent the same value
- They seem to be the same to me. I feel like 120,000 is still really decent even though 150,000 is more
- They ultimately lead to the same thing.
- They yield the same average income in the long-run.
- They're basically saying the same thing. I just believed I had less chance on the second one.
- They're both the same just shown differently. The expected value is higher in ADE
- They're essentially both the same - ultimately you have 25% chance of getting $92,000, 50% chance of $144,000 and 25% of $225,000. Having more of a chance of earning more than in BCE, especially with the low marginality between $144,000 and $150,000, is much better.
- They're similar enough
- They're similar enough
- They're similar enough
- They're the same choice.
- They're the same question just displayed differently.
- They're the same thing
- This gave me the largest possibility of earnign money.
- This is because ACE has a 75% chance of getting over 50,000 and the difference between 44,000 and 50,000 is not that large. If the second option in E were less (like under 30), I may reconsider. Also, because i'm only 35, I would be more risky.
- This is because B offers no other option than just 50,000/yr while ADE gives a better chance of getting more than that
- This makes sense because I wanted to eliminate the possibility of only making $52,000/yr.
- This offers a chance at 144K and the difference btwn 92K and 96K is negligible.
- This option gives a chance at achieving 225K
- This survey is interesting because you get to see how fickle you are with major life decisions
- Those choices ultimately lead to a higher payoff. The chance that it could lead to the smaller payoff is not that great, compared to the marginality of the amount of the higher payoffs.
- Though more risky, it could have higher gain.
- Two questions are the same
- Very similar situation with slight different precondition but still make the same decision.
- WHICHEVER HAS MORE MONEY, RISK TAKER
- Wanted the chance of getting $108,000
- Wanted the chance to get $225,000

- We assumed no inflation and that this is the only funding available after retirement, so how long before retire I made the choice didn't affect my decision in this make-believe situation. I may have chosen differently in real-life circumstances, but I'm still not sure I'd have sacrificed security.
- When I decided to go conservative, I need to keep go on to have equal possibility.
- When calculate the probability, they are eventually the same
- When faced with a decision to risk making more or not, I would go with making more. in addition, worst case scenario for ACE isn't that bad in comparison to 90,000
- When given the choice between C or D, I would always choose D
- When making the decision between E or F, I would always choose F no matter if the choice between C or D still exists
- When the chance of earning highest return are equal it is better than you have at least 25% chance of earning $67,500 rather than taking 50% chance of earning $45,000.
- When you multiplpy the probabilities of ACE, you see that the percentages are actually all the same
- When you multiply probabilties, they are actually the same choices
- While these two boxes are presently differently, clearly they have the same chances of getting the different amounts (they're the same). It is a better option than the 100% chance to get only 50,000 like presented in B.
- With BCF I have a chance at 225,000 and in the other option I don't. And the minimum for both is 90,000 so it makes sense to me to go with my first choice.
- With BDE, there is a much greater chance of a higher value in comparison to BCF, ie. 50% chance of $150,000 vs. 50% chance of $90,000.
- Worth take to risk as what I can gain is much higher than what I will lose
- Yes
- Yes, it makes sense for the two choices to be the same because it is the same chance that you will make at least six figures after retirement (75%) which was the most important factor to me.
- Yes, keep the same choice
- Yes. Same answers.
- You are guaranteed a greater amount of money than you could gamble on getting if the spinner gives you the lower amount
- You end up with the same probability and risk in each.
- You guys are really determined to drive this point home. Anyone paying attention to the survey would have realized that the two sets of questions were the same. Different answers should only have resulted from your willingness to take risks changing over the course of the survey
- You have a 75 percent chance of making more than or equal to 60 thousand in both cases.
- You have a 75% chance in the first case of getting over $50,00/yr, and the 25% option is only slightly less than this. In the second case you have similar odds.
- You have a chance at a higher amount of money, and do not risk having 74,000 per year.
- You have more of a chance of getting more than $100,000 with BDF and I just like those odds better than going the conservative route. And the lowest you could make with option BDF is only $8,000 less than option A, which is like nothing compared to what larger sum you'd get with the more risky option, so I think BDF is definitely worth it.
- You only have 25% chance of earning less than guaranteed return plus losing 20% of potential gain isn't too risky so why not invest more aggressively?
- acf has higher cahcne of getting more money

- again, having 25% chance of earning $67,500 is better than taking 50% chance of earning $45,000
- again, they have the same probabilities which I like more than ADF
- always get higher earnings by choosing F
- asking the same thing
- avoid 64, 150 is plenty
- avoiding 64,000
- avoiding 64,000
- avoiding 64,000
- avoiding64,000
- b/c the scenarios are the same
- b/c there is equal chances of getting each amount in both situations.
- becaause no matter what happened before hand, at age 50 i still would like to take the risk to make up to 112500$ and i am still willing to have a 50% chance of only getting 60000$
- because 108 per year is still alot of money so I am okay with risking getting 108 instead of the gaurenteeed 150
- because C has a chance of getting 112, whereas the difference between 70 and 75 is not that large
- because I have a higher probability of earning more
- because I have a higher probability of earning more in my choices
- because I want the security of the decision
- because both of possibilities from F is a gain from 50,000
- because for BDF there is a 75% chance of earning more than $92000 while in BDE there is only a 50% chance of earning more than $96000
- because i have the same options
- because i have the same options to choose from
- because i prefer ADF to the chances of ACF...there is a 50% to get 75 in ADF which is better than the slim chance of getting above 75
- because i would be safer
- because in both situations it i choose D i have the same chances at getting either 37 or 64
- because the outcome is the same.
- because the probabilities are the same and being conservative or not had little effect on my choice to pick probabilities
- because the top is the same as what i chose on the bottom BCF
- because they are both basically the same
- because they are showing the same information just in a different way
- because they are the same
- because they are the same thing but just displaying it in two different ways
- because they have the same possibiilty
- because they have the same probabilities
- because they represent the exact same thing
- because youre guaranteed at least something
- better chance at decent money
- better chance of making more money
- both are same situations with same chances

- both choices offer a high chance of getting above 100 so I wanted to take the chance to get that even though there is a chance I may get 52
- both offer the same min. value but the second option offers more room to get more money
- both retain 75% chance of winning above 100,000. ACF only has 50% chance
- both top and bottom have the same percentage of getting each amounts
- both were attractive options with a low possible minimum amount per year.
- c
- chance for higher pay
- chance for more money
- chance for over 100,000/yr
- chance of getting 225,000. difference of 30,000 is worth the risk to gain more money
- consistency, comparing the options
- easier to see the simpler one and if the end result is the same, there should be one option
- essentially they are the same thing. I am making the decision at age 50 and the average amount of yearly earnings is the same in both cases
- even if i get 47,000 it is not much less than 50,000 so i don't feel so bad having seen both of my options and what id be losing if i got the short end of the stick
- even with the different options, it seemed like a better fit.
- expected return of B is higher than that of A
- fdg
- good chance for 225K
- good chance for good money
- good chance to win 150K
- good chances for 90K and 150K
- good to have 100K guaranteed
- gotta get that money!
- greater chance at getting a greater amount
- greater chance of earning $144000 or more in BDF
- greater option of gaining money and I would settle for 135000/yr
- guaranteed money
- have a chance at getting the 112
- have a good chance at getting more than 50,000
- higher EV
- higher amount of average possible earnings in that case
- higher gain
- higher numbers
- higher numbers
- higher pay
- higher reward for the risk
- highger chance of getting above 50,000/yr
- i already made the same choices before because they are the same thing. it makes sense because i am more likely to earn over $40,500 than get that choice
- i already made the same choices. there were no conflicts before. maybe i saw these later on in the survey and began to understand more what i was looking at. i would be able to have 75% chance of getting a higher amount than a 50% of getting the lowest amount in BCE ($45,000)

- i do have the same answer i don't get this
- i have a 50% chance of getting 64 which is more than 50
- i have a 75% chance of getting more than 50,000
- i have the same risk in both
- i have the same risk in both
- i have the same risk in both
- i like to have the chance to get 112
- i prefer to risk since only 25% is a chance of loss from 50000
- i would rather chance getting 90 than never go for the 150
- i would rather get a higher payout
- i would risk it for those higher values
- i'll take the guaranteed 100000
- in both cases, BDF has less chance of getting a lower amount than 50,000 than for BCF.
- in both situations your chances of getting 141000, or not getting it , are the same.
- in choice BDF the average amount I could earn is higher than BDE
- in either scenario I like the guaranteed 100000 per year.
- in general the conservative choices are stable but don't offer as high of an EV as the chances involving chance
- in the top choice the chance of getting 112,500 is 25% in both scenarios and the chance of getting 54,000 is 50% in ACE and only 25% in ACF. In the bottom choice the likelihood of getting a highest amounts of money, more than 36,000, is greater in choice ACE.
- it makes sense because there is a 75% chance of earning 144000 or more in case BDF and only 50% chance in BCE. Also $92000 is not significantly different from $96000 to me
- it makes visualization of options easier
- it seems like a more conservative option and i would rather get 90,000 rather than potentially 81,000
- it was the same scenario to me so i made the same choice
- its an overall better choice. the 108k was just split so makes no differences
- its no different, so i made the same choice
- its the same idea
- its the same situation
- its the same thing
- its the same thing but with more options
- less chance to lose money
- less risk
- less risk involved for a payout that i would be content with
- looks better
- looks the same
- low risk here. worst case is i get 90K
- made sense
- moer chance at the middle number if I risk it
- more capital
- more capital
- more capital
- more capital

- more capital
- more capital
- more options
- more security
- more than 50% chance of winning >100,000, with a 25% chance at 225,000. better bet than a 100% chance of 100,000.
- na
- net earning with BDF is higher
- net possible earnings are higher in choice BDE
- net possible earnings higher in choice BDE
- net possible earnings in BDF is higher than $96000
- no difference other than additional guarantee of earning $50,000
- odds are the same
- odds are the same
- odds of outcome are the same just presented differently
- odds of the outcomes are the same, just presented differently
- once I'm passes the spinner they are the same and I like the outcome more.
- once past the spinner F looks better. I wouldn't risk it for the lower values.
- one is just easier to look at than the other
- one option is direct
- people don't like risking their money
- probabilities with each outcome are the same.
- questions are identical with different images to display them.
- rather take the 50percent chance
- rtga
- saaaaaaaaaaaaaame question
- same
- same
- same
- same
- same
- same
- same
- same
- same chance of smae payoffs
- same chances
- same chances in each scenario
- same chances of making each amount
- same choice
- same choices
- same choices
- same comparison
- same ending result so have same tree of options for both questions
- same expected return

- same expected return
- same expected return
- same expected return
- same expected return
- same expected return
- same expected return
- same expected return
- same likelihood of outcomes
- same odds just presented in different mannerisms
- same odds of outcome
- same odds of outcome
- same odds of outcome
- same outcome
- same outcome chances
- same outcome chances
- same outcome silly
- same possibility
- same probabilities
- same probability
- same probability. same decision
- same question
- same question
- same question
- same question but without all the unnecessary information
- same question same answer
- same question same choice
- same question, same answer
- same question, same answer
- same question, same choice
- same question.
- same question.. why would i put different answers..
- same results for both
- same risk in the end
- same risk in the end
- same risk in the end
- same risk in the end
- same risk in the end
- same risk in the end
- same risk in the end
- same risk in the end
- same risk in the end
- same risk in the end
- same scenario
- same scenario

- same scenarios
- same scenarios
- same scenarios
- same structure
- same thing
- sane
- seemed like an overall like a bitter fit. the other numbers were appeal as well
- should be the same choice but it allows for a better safe net since its at the age of 50
- show the same probability of the outcome
- silly to choose an option that will overall give you chances of getting less money
- similar structure
- sme choice makes making decison easier
- stable income is important
- take a chance for more money
- the answers are the same
- the chance of getting only 50 greater was too small to risk having only half of what I would have.
- the chances are the same
- the expected payout is greater for ACE over ADE
- the more options were appealing, but I took into account the overall risk and reward numbers
- the odds that i can make more money are higher in both choices
- the other options available and background makes a difference in the choice
- the overal gain is larger on both og these than either of the other options even if i was dealt the worst hand.
- the percentage of 225k makes it more appealing
- the question is the same.
- the same
- the same
- the second one leads to more of a chance at a lower number
- there are two situations
- there is a 25% chance of getting any option
- there is a 75% chance of earning more in BDE than I would in A
- there is a better chance in making more money
- there is a better chance of making greater than 26,000 in option ADF
- there is a small percentage of getting the lowest amount and therefore I would be willing to take the risk and there are more options avaiable
- there is equal chance of getting each amount
- these are the choices that seemed most appealing to me
- these are the same question...
- these questions arent different enough to warrant different answers
- these two questions are exactly the same except that the percents are different
- these two questions are the same so i would want the same choice for both
- they are both exactly the same just depicted differently
- they are exactly the same
- they are offering basically the same thing
- they are similar in what they are offering and so i could choose either and be pleased

- they are the same
- they are the same
- they are the same
- they are the same
- they are the same
- they are the same
- they are the same
- they are the same
- they are the same
- they are the same
- they are the same
- they are the same choices
- they are the same exact thing
- they are the same in terms of possibility of getting a loss or a gain from 50,000
- they are the same thing but with different visuals
- they are the same thing probability wise, so knowing that i prefer a in one, it makes sense to prefer a over the other.
- they are the same, just framed differently
- they are very similar
- they basically say the same thing
- they go to the same options
- they have same possibilities of getting less than 50,000
- they have the same outcome probability
- they look the same
- they look the same
- they show the same chance of each outcome
- they show the same chances
- they show the same probability of each outcome
- they show the same probability of each outcome
- they show the same probability of each outcome
- they show the same probability of each outcome
- they show the same probability of each outcome
- they show the same probability of each outcome
- they show the same probability of each outcome
- they show the same probability of each outcome
- they show the same probability of each outcome
- they show the same probability of each outcome
- they're identical situations
- they're the same questions
- theyre the same
- theyre the same
- theyre the same questions
- through choice BDF I can earn more than the conservative amount
- want to avoid the 64k, happy with 100k

- werewqwerewteqwerty
- you have a 50 percent chance at getting more than 43 and a 25 percent chance at getting more than 75
- you have a 50% chance to get 75 which is more than 50, and also 43 is not far from 50.
- you have a 50/50 chance in both the answers i chose so it makes sense that theyre the same
- you have the chance of losing 10,000 in each case, however in BCF you have the chance to gain more and either way you are gaining more than 100,00
- you should be safe
- you want to be safe
- you're making a very similar choice between possible outcomes.

1.2.6 Responses from December 2013

- 100,000 is a comfortable amount to live on for one person. I don't want to take the risk of having to live on 72,000.
- 135000 has the same percentage in each
- 225,000 is a big difference compared to 150,000, the most I can make in the second choice. I'm willing to take that risk.
- 25% decrease in the chance of making less than 50k.
- 50% CHANCE OF 140,000
- 50% CHANCE OF 150,000
- 50% chance of +$50K...seems good
- 50% chance of getting greater than 50000 so worth the risk.
- 50% chance of getting more, 50% chance of getting less, but only 6,000 less
- 50% chance of receiving $75K...not bad odds
- 50% chance to get 36000. When the odds are so high, it is worth it to take the risk between 54000 and 112500 since both are greater than 36000.
- 50% is too great to end up with 26000.
- 50% risk is tolerant, knowing I have more to gain over the conservative ($44K+) than to lose ($4K max).
- 50% was too high of a chance for me to risk getting less than 100K
- 50-50 is a good probability to gamble on. I want more money and I'm old so I can survive on $88,000
- 70.5k/yr or 75k/yr is not that different. I'd rather have a chance of getting 112.5k/yr
- 75% chance of a $144K+ income is preferred, even if more risk is incurred.
- 75% chance of doing better then 50,000
- 75% chance of doing better then choice A
- 75% chance of getting 54000 or greater is worth the risk.
- 75% chance of getting 54000 or greater.
- 75% chance of receiving +$50K
- 75% of the choices in BDF is higher that 100000 dollars
- A 25% chance of making $112,500/yr is better than a 50% chance of making $75000 in my opinion. Also, although there is a 50% chance of only making $40,000 that is better than having a 25% chance of only making $32,000
- A 3k loss (50k --> 47k) isn't great enough to warrant passing up on the chance to make that 75k

- ACE = higher chance of getting a decent or great amount of money per year. ADE is kind of silly as I can't get any more than 75k/yr at best. Both ACE and ADE have the same worst case scenario.
- ACE has a higher value potential in the second and the first scenario has the same probabilities in both situations
- ACF = high risk, low probability of higher payoff. ADE = low risk, high probability of decent payoff.
- ACF has a risk of making slightly less but a large chance of making much more
- ACF is a safer choice with the same chance of making $225,000
- ACF is overall the best choice because there is both more to be gained and less to be lost.
- ACF's options are the same, and B has a higher guarantee than ACF's 50% for 72
- ADE = higher chance of getting a decent amount of money per year. ACF = too much risk.
- ADE's options are the same
- ADE's options are the same
- Again only a 25% chance of getting less then 50,00 while BCF has a 50% chance
- Again, same probabilities - doesn't make a difference with different choices
- Again, same question depicted in different ways. Answer stays the same.
- All outcomes are okay. This is very similar to the 80,000 and 150,000 50/50 split.
- An equal chance of getting a lower amount of money/yr but there's a possibility in ACE of me getting 112.5k/yr
- At age 35 you are more apt to gamble, as compared to age 50 (theatrically speaking although age comparison does not directly apply to this problem, I am using that to explain the choice with more outcomes). In addition, a 50/50 chance of getting 120,000 or 225,000 is more beneficial than settling with 150,000 (value).
- At age 35 you can take more financial risks so you don't need to choose as conservatively
- At age 50 you are less likely to take risks (do not want the 64,000) however the expected value of F is higher than E and the lower chance of F is still comfortable.
- BCF prevents me from getting 64000
- BDE has a higher chance of getting over 96000 dollars
- BDE has a lower chance of making less than 50k in each case. Same odds of making 75k, but less chance to make less than 50 makes BDE an obvious choice.
- BDF has a lower chance of losing money than BCE.
- BDF minimizes the chance at making less than 50k
- BDF offers more chance of earning above 50000
- BECAUSE THEY'RE THE SAME
- Because 4,000 was not enough deterrent to make me not want to try for $144,000 o4r 225,000
- Because A feels safer to me since 50% risk of getting 86K is too high.
- Because A gives you the same outcome irrespective of the results from BDE
- Because I believe in this case the rewards from ADF outweigh the risks
- Because I stand to gain a lot more than I stand to lose in both scenarios (112,500 is much more than 75,000, and 64,500 is a lot more than 43,000).
- Because I wanted a chance at higher earnings in both situations
- Because I wanted a chance at higher earnings in both situations
- Because I wanted a chance at the 129K
- Because I wanted a shot at higher earnings in both situations

- Because I wanted a shot at the 129K
- Because I'm not willing to risk only receiving $88,000
- Because both questions are exactly the same.
- Because both questions are similar.
- Because even though 50k is guaranteed in B there is a 75% chance to make substantially more in ACE. Also I do not see that much of a difference between 44.000 and 50.000 so it is worth taking the risk
- Because in both scenarios, I stand to gain a lot more than I stand to lose (112,500 is a lot more than 75,000).
- Because in both situations I'd rather risk $6,000 to gain $75,000
- Because in both situations there is an equal probability that I get the higher option. They are independent events.
- Because in these you are more likely to gain more with ADE
- Because it is the same
- Because it's the same question
- Because most likely I will get a package above 50,000 a year, in the second scenario.
- Because pf the 50% chance of making more and that I dont see that much of a difference between 47k and 50k
- Because the chances of me gaining more money is significant enough for me to risk $4,000
- Because the likelihood that you would get each of the numbers is the same for each scenario.
- Because there is 50% possibility of earning 120,000 and 225,000!
- Because there is a 75% chance of getting 129K +
- Because there is a greater likelihood that you will make over 50k
- Because there is an equal likelihood of getting each package in both scenarios.
- Because there was a 75% chance of getting 129K +
- Because they are asking the same question.
- Because they are the same
- Because they are the same
- Because they are the same
- Because they are the same question and the same answer choices just formatted in a different visual
- Because they yield the same result. If I know that the other outcomes arent feasible in the first box, than I'd rather risk losing $6,000 for the opportunity to gain $75,000 than just play it safe and take $144,000.
- Because you are more likely to gain more with ADE
- Better chance of getting more
- Better option; higher chance of more money.
- Better option; higher chance of more money.
- Better option; higher chance of more money.
- Better option; higher chance of more money.
- Better option; higher chance of more money.
- Better option; higher chance of more money.
- Both ACF and ADF have the same chance of me getting 47k/yr. But ACF gives me a chance of getting 112.5k/yr, ADF doesn't
- Both have the same chance for 52,000 but ACE has a chance for 225,000

- Both highlighted situations have the same probability of the same outcome.
- Both of the highlighted choices have the same probability of the same outcome.
- Both options are the same, and the risk is worth taking as 112,500 is significantly higher than 75,000 whereas 67,500 is not that much less.
- Both options provide the same expected values event with the option of choosing at age 35 or 50
- Both options will give a 50% chance of getting 72,000 per year
- Both options will give a conservative and a 50/50 option
- Both the BCFs push me more toward 45000 while the BDFs have a better chance of earning at least 67500
- Both the BDFs have a more fair chance to earn the most money possible while the BDEs push me more toward the lower bracket
- C and E give me a chance of making a bank, while their worst case scenarios are not much worse than if I'd chosen D or F.
- Cause they are the same probability wise with different visuals
- Choice A is safer than the 50% chance of receiving 36000.
- Choice D in the first scenario was more appealing because of the guarantee of $75,000. Choice D in the second scenario also made sense in the context of the other conservative choice of $36,000.
- Due to expected payoffs
- E and F present a similar worst case scenario. E has a higher chance of greater payoff.
- Even though I make two separate decisions in the second scenario, the tree is pretty simple and therefore I feel the same about it.
- Gaining 12,500 is not worth the chance of losing 5,000 with 50% chance
- HAVING 88,000 AND 141,000 IS A HIGH POSSIBILITY FOR BOTH
- Higher baseline amount
- Higher expected return in BDE than BCF
- Higher expected value
- Higher low amount
- Higher pay off
- Highest pay offs, 80,000 is still comfortable, can gamble between E and F
- I am not willing to risk only receiving $88,000 regardless of the potential increase that is possible.
- I believe I made the right choice in making the first choice as my final answer. The likelihood of getting a number that is above 100k is higher.
- I believe the potential risk of choosing ACE outweighs the potential rewards.
- I believe the situations are reasonably similar, and that the possibility of a $144K retirement income is worth the risk of a $4K loss over the guarantee
- I can take a chance and risk losing 4,000 or gaining 50,000. I'm sure I could survive on 96,000 just as well as 100,000.
- I can take the risk of a probability being 50 and 50. it's a lot more money during C or E compared to B
- I can't see the alternative choice in the top set. Hence, I'll assume I made a rational choice that was consistent when I first chose.
- I did not like the odds of 25% chance of receiving 40,500.
- I don't want the risk of 52, not when there's a chance the min will be 72
- I don't want to make changes
- I don't want to make changes

- I feel like it is the same question asked in different way.
- I have more to gain than to lose.
- I made the same choice in each one because DBF gives you the same 50/50 shot at 70.5k, but gives you the 25% shot at 112.5k that BDE doesn't provide.
- I may want to choose plan AC
- I rather have a chance to earn more than definitely get the $50000
- I rather take the risk to go for the $141,000 if it only means losing %6,000.
- I still want to make BDF because that at gives me a 75% chance of making more than 47k. BCE only gives me a 50% of making more.
- I think 50% is a tolerable risk level for the possibility of a drastically higher retirement payout.
- I think it's a safer bet to go with the conservative choice of 100,000 a year. I don't like that you could end up with 86000 in the other choice.
- I took into account the risk factors
- I want to have more money to spend after I retired and I know there is risk on this investing.
- I want to have more money to spend after I retired and I know there is risk on this investing.
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- I want to have more money to spend after I retired and I know there is risk on this investing.
- I want to have more money to spend after I retired and I know there is risk on this investing.
- I want to make the same choice in both situations because the ACE option is not worth the risk in this case, as the likelihood of more than 67,500 is only 25% whereas it is 50% in choice ADE.
- I was right the first time
- I will gamble a little.
- I would choose to risk because none of the outcomes are undesirable.
- I would get $75,000
- I would like to have the opportunity for advancement and like the previous answer, the loss of $2,000 isn't much compared to the gain in money I can make.
- I would make more money in both questions compared to the conservative option
- I would make the same choices in both answers because the worst possible scenario is the same in both cases. The worst thing that could happen is that I would end up with 40,500 dollars a year instead of 50,000 dollars a year. However, I'm only 35 and I'll take the risk of possibly receiving 112,500/yr or 67,500/yr.
- I would only get 6,000 less if I got 94,000 compared to 100,000 in the conversative choice which isn't so bad
- I would only lose $6,000 if I ended up getting 94,000. But i'm willing to take that risk
- I'd gain more than I'd lose if I received the 67,5000/yr.
- I'd like to prevent the negative outcome (64000) from BDE
- I'd make the same choice because it's the same situation.
- I'd rather have a 50% chance of receiving $75,000 without the possibility of receiving $112,500 than have a 50% of receiving only $47,000.
- I'd rather have a chance of getting 112.5k/yr and I don't care if I end up with 75k/yr or 70.5k/yr (there's an equal amount of chance getting 47k/yr in both situations)
- I'd rather take my chances earn the highest amount possible and the BDFs have a better chance of earning above 50000
- I'd rather take the chance to earn the most money possible

- I'd rather take the chance to earn the most money possible and I can still be comfortable with 67500 which is what I'm most likely to get
- I'd take the risk.
- I'll take the 50% chance of losing 5,000 a year for a gain or either 7,500 or over 50,000.
- I'm willing to take a gamble. I want more money.
- I'm willing to take the risk to get more money for ADE
- I'm willing to take the risk to get more money. 50-50 is a good probability in my perspective to gamble upon.
- I'm willing to take the risk. It's a big difference of 100,000 in the conservative choice compared to 150,000, the most I can get.
- I'm willing to take the risk. it's 50-50 which is a good probability to take a risk on
- IN THE TWO SCENARIOS OPTION C IS THE SAME...
- IN THIS SITUATION I WOULD BE COMFORTABLE WITH THE SAME LEVEL OF RISK WHETHER I WAS 35 OR 50
- In F, you are not losing money, you are guaranteed to have more than 100,000. You might as well try to get even more by choosing F and having the chance to get 225,000.
- In The first one, the choice has been made at age 35 but in the second one, you still have an option at age 35 to choose from either A or B
- In both cases, the probability of getting $75,000 is 50%, $70,500 is 25% and $44,000 is 25%. Even though the second case has two spins while the first case only has one, the expected value is still the same.
- In both scenarios, options BCE are identical. The BCF options are too, but illustrated differently (25% is the same as 50% 0f 50%)
- In both situations the average expected outcome of BDF is higher than that of A
- In both situations the highest average payout was through taking a risk, regardless of whether the conservative option was available.
- In both situations there is a 75% chance of getting 67,500 or more whereas in the ACF option there is only a 50% chance this will occur.
- In both situations, the worst case scenarios are pretty much the same. ACE has a better pay off with similar amount of risk.
- In both situations, you already made the choice at age 35 so you're guaranteed to have the same outcome
- In both, I have a 50% chance to earn over $50000 versus guaranteed $50,000
- In plan ADE there is a 75% chance of making 67,500 or more in both situations which is worth the risk.
- It doesn't have to be the same answer, but I prefer the riskier possible outcome for both
- It is exactly the same thing except for the fact that you have already made some sort of decision that went the wrong way. If you ignore the past experiences, its the same question.
- It is the same question depicted in two different ways again.
- It is worth the risk in both situations
- It is worth the risk.
- It looks like more opportunity to me in getting those money. Visually appealing.
- It makes sense to choose both because there is still a chance of getting more 25% of the time.
- It makes sense to have the same numbers and the expected value of that decision is higher.
- It"s simple

- It's better to have a 25% chance of receiving 26000 than a 50% chance of receiving 36000. a 75% chance of receiving 54000 or greater is much more attractive.
- It's the exact same situation. I'd take the 50 percent chance of gaining 15,000dollars/year.
- It's the same question
- Its the same numbers
- Its the same pathway.
- Knowledge of choices you can't make should not influence ones you can.
- Knowledge of choices you can't make should not influence the ones you can.
- Making these choices will give me double the opportunity to make a large sum of money post-retirement.
- More conservative, lower baseline possible
- More likely to get a higher amount
- My ultimate goal relied on C or D. E or F does not matter to me as much.
- Neither outcome is undesirable. While there is a 50% chance of 86,000, it is an acceptable outcome.
- None of the outcomes are risky, all are desirable.
- Once you've chosen the option e or f the situations become the same. Therefore, in both situations I would chose E. I think the prospect of receiving 67,500 dollars a year outweigh the costs of losing 4,500 dollars a year if I should end up receiving the 40,500 dollars a year.
- Only 25% chance of getting 26000 so worth the risk.
- Option C, involving risk, has 2 outcomes that I decided were above the threshold of 85,000. Either would be okay with a large pay out if the outcome were $225,000.
- Options presented are analogous.
- PERCENTAGES MATCH UP
- Probabilities of end results are the same, only illustrated differently
- Probability wise, the two are the same - makes no difference whether you separate it into different trees
- Risk factors
- Risk factors
- Risk is worth it
- Risk is worth the potential loss
- Riskier choice is worth it
- SAME AMOUNT
- SAME CHANCES
- SAME PRROBABILITY
- Same as before--the probabilities of receiving each dollar value is the same in both cases (50% chance of getting $75,000 in both scenarios).
- Same choice because each BCF gives you that extra 25% shot at 112.5k that outweighs the higher chance of only 75k (versus 70.5) from BCE
- Same choice is warranted because both situations are the same.
- Same choices and there is a 50% chance that I will make $150,000, with the risk being I lose only $6,000.
- Same exact odds, and I favor the ACE path in both.
- Same exact odds, and you have to look at each scenario as completely independent of the others.
- Same expected value.

- Same payouts
- Same probabilities
- Same probabilities in both scenarios
- Same question depicted in two different ways.
- Same question depicted in two different ways.
- Same question depicted in two different ways.
- Same question depicted in two different ways.
- Same question depicted in two different ways.
- Same question visually depicted in two different ways. Fundamental answer stays the same.
- Same reasoning as the previous question. It the exact same thing; however, people make choices depending on how percentages appear.
- Same scenario, same decision. I want to avoid the 52,000 and there's a chance for 225,000
- Seems consistent to me.
- Similar scenarios.
- Similar worst case scenario in both. ACE gives me a chance of higher payoff though.
- Similar worst case scenario in both. Higher probability of greater payoff (70-112k/yr) in ACE than ACF.
- Similar worst case scenarios in both, C has a higher outcome of greater payoff (112.5k/yr: 50% in C to 0% in D)
- Simply better odds
- Sometimes it is better to know the loss you will have and accept a loss rather than gamble and lose even more.
- THEY ARE THE SAME SITUATION, JUST DIFFERENT FORMATS (AND DIFFERENT AGES)
- THEY'RE THE EXACT SAME SCENARIO
- THEY'RE THE EXACT SAME SCENARIO, JUST PRESENTED DIFFERENTLY
- THEY'RE THE SAME
- THEY'RE THE SAME SCENARIO
- THEY'RE THE SAME SCENARIO
- THEY'RE THE SAME, AND THE RISK ISN'T SO GREAT THAT AT 50 I WOULD BE LESS COMFORTABLE WITH IT THAN AT 35
- The 225K was appealing to me and I wanted a shot at it
- The 50% chance of losing only 3k doesn't justify passing up on the chance to make 1.5x the conservative offer.
- The 50% chance of only a 3k loss doesn't justify passing up on the opportunity to make considerably more.
- The answers are the same and always makes sense to choose F
- The chance of a higher income is in line with my tolerance for risk, and I feel the gamble is reasonable given the possibility of substantial $144K or $225K payouts, despite the lower $92K possibility.
- The chances are the same in each, the set up is just different. Either way, I would have $45,000 min and $75,000 max
- The choices I made offer more chance to earn above $50000
- The choices I made offer more opportunity to earn above $50000

- The choices that I chose seem to have the same results, which is a better situation than the second options for both questions.
- The choices you make are the same - regardless of the other possiblities
- The conservative choice in the second question is what I lean towards, while in the first question, there is more possibility and threat of getting 74000
- The conservative route is the way to go for me. I think I've made the same decision on other questions as well, and I would like to continue to do so.
- The diagrams may be different but the end results are the same
- The difference between the two is I am given option B in the other, which I wouldn't take anyway because there is a 75% chance of making more than $50000/yr and for C over D/E over F - there is a 50% chance both times of making significantly more than the conservative amount, which is fairly close to the "losing" risk anyway.
- The dollar amounts and percentages are the same so the answers should be the same
- The exact same question, visually and logically.
- The expected value of ACE is greater than B.
- The first choice shows two 25% chances of making 72,000 (which equals 50) while the second choice shows a 50% chance of making the same 72,000
- The first illustration asks for two choices while the second asks for one. Choice F was chosen in both though, because in isolation of "E or F" the questions stays the same.
- The first is better because the expected income is > $50,000/yr, the second has the additional bonus of making financial decisions at age 50, which is closer to age 65.
- The highest probability (50%) in ACE is receiving $70,500 while in ACF it's $47,000. I don't mind the 25% possible downside of $44,000.
- The improvement in quality of life with $60000 seems more significant than the difference in quality of life with $32,000 vs $40,000 in terms of the monetary sacrifices needed to maintain a certain lifestyle
- The likelihood of each end result is the same.
- The lowest amount of money I can get by not being conservative is only $4000 less, but there is a large gain by taking a chance an choosing choice C/D or E/F.
- The minimum in ACF is only a few thousand dollars less than B, while the maximum is substantially greater
- The minimum is barely low the conservative amount and the maximum is much greater
- The odds for each possible earnings are the same. Same chance of making $141,000 in both, and same goes for the other values.
- The options come down to the same thing in ACE
- The other grayed out sections don't matter
- The payoff can be greater with choice ACF over B and the risk of loss is not that great.
- The percentages and chances for obtaining the different amounts of money seem to be the same in both situations
- The percentages are equal
- The percentages are the same
- The potential benefits outweigh the risk in both of these situations, as in both situations there is a 75% chance of getting 67,500 or more.
- The potential payoff is greater in ACE in both situations than it is in ADF.

- The probabilities and the outcomes are exactly the same just depicted slightly differently in the infographic.
- The probabilities of all of the outcomes is the same in BDF. Compared to BDE, there is an option of even greater payout (225,000) that BDE lacks.
- The probability of receiving each dollar amount is the same (the expected value of the game is the same for both cases).
- The questions are the same so the answers should be the same
- The range for C is much bigger, 50-50 is a good probability to take a risk on
- The responses are the same
- The risk is not too great to choose BDF
- The risk is worth it
- The risk is worth the potential loss
- The risk is worth the potential loss
- The risk of getting a higher amount is not too great
- The risk outweighs the cost
- The same choice of having 150k is something that would satisfy me.
- The same expected values apply
- The same expected values apply
- The same expected values apply even when given the option to choose at age 50.
- The same expected values even though the options are separated
- The same question asked in different way
- The same question asked in different way
- The same question asked in different way
- The same question asked in different way
- The same question asked in different way.
- The same situation is being presented in both questions therefore it makes sense that I chose the same answers.
- The scenarios are analogous.
- The scenarios are the same if the grey part doesn't exist
- The scenarios are the same if you disregard the grey part
- The scenarios are the same if you disregard the grey part
- The scenarios are the same if you disregard the grey part
- The set up is different but the percentages and dollar amounts are the same.
- The set up is different but the percentages and dollar amounts are the same. So my answer should be the same.
- The setup is different but the dollar amount is the same. I should get the same answer.
- The situations are analogous
- The situations are analogous
- The situations are the same.
- The two are identical, despite different set up
- The two are identical.
- The two on the right have the same percentages... it's the same question
- The way it was presented probably changed the way I answered. But they are the same in the end.
- Their is a higher probability of getting more money
- There

- There
- There are the same probabilities of getting each amount they are just split diiferently
- There is 50% chance in both of these choices that I get more money than in choice A
- There is a 25% chance of losing money in BDE while there is a 50% chance of losing money in BCF.
- There is a 50% chance for higher than 100,000/yr, which is a pretty good percentage when the alternative is 72,000, which isn't too bad.
- There is a 50% chance of getting 75,000 which is worth the risk in this case, as 45,000 is not that much less than 50,000 whereas 75,000 is a lot more.
- There is a 75% chance in both of them that I will make over $100,000.
- There is a 75% chance of getting 54000 or greater, so it is worth it to take the risk.
- There is a 75% chance of having an outcome over 100,000.
- There is a 75% chance of having more than $100,000 while only a 25% chance of having less.
- There is a 75% chance that you will get <100000 and that is worth the risk.
- There is a 75% chance that you will have more than 100,000 and only 25% chance that you will fall below.
- There is a much greater likelihood of making significantly more money in ACE
- There is a risk in both situations but there is also an opportunity for that to pay off.
- There is more ot be gained from ACF over ADF and the risk is not that great.
- There is not that large of a difference between 44k and 50k
- There is only a 25% chance of getting 52,000 per year in both of the choices. It is therefore better to choose ACE which has a greater chance of providing at least 100,000/year
- There is only a 25% chance of having 75,000 while a 50% chance of having 150,000.
- There is only a 25% chance of making less than $100,000/year with the other 25% being a much larger value
- There is still a %50 chance that I will get something higher than $70,000
- There is the same chance of losing money in BDF and BDE, however, BDF has a greater possible payout of 225,000.
- There is the same risk of getting 150,000 in BDE and BCE but BDE has less of a chance of having less than 100,000.
- These appear the same.
- These appear to be the same quality of choice to me.
- These are the same two situations, just charted differently. The answer stays the same.
- These both have simple tree diagrams and the result is random for ADF in both scenarios.
- These choices will maximize profit in the long term.
- These choices will maximize profit in the long term.
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- These choices will maximize profit in the long term.
- These choices will maximize profit in the long term.

- These choices will maximize profit in the long term.
- These choices will maximize profit in the long term.
- These series of choices will maximize profit in the long run.
- They are equivalent
- They are the same
- They are the same
- They are the same
- They are the same branching pattern.
- They are the same chances. It's better to have a smaller chance of getting 52,000.
- They are the same choice.If I'm choosing between C or D, my knowledge of options E and F is irrelevant because it is 15 years too late for either of them to be a factor.
- They are the same percentages
- They are the same scenario and there's a 75% chance of getting more than 100,000/yr. I am willing to take the risk
- They are the same scenario so it makes sense to make the same decision. Also, I really want to avoid the 52,000/yr
- They are the same situations.
- They are the same to me regardless of age.
- They are the same.
- They are the same.
- They are the same. Options C and D don't matter at the point that I choose between E and F because they are not available options at that time. Worrying about what previous choices could have resulted in does not help decision-making.
- They ask the same question, but one puts it in an irrelevant context.
- They both have the same maximum income bu
- They both have the same maximum income bu
- They both have the same maximum income but
- They have the same conservative earning
- They have the same conservative value
- They're exactly the same scenario so my choice should be the same.
- They're the exact same situation.
- They're the exact same situation/percentages.
- They're the exact same situations/percentages.
- While there is a 50% chance of having less than the guaranteed $100,000, the $86,000 option is not that risky, low.
- While there is the possibility of getting 74000 a year, it's only 25%, while in the other option, the chance of getting 86000 is 50%. There are more chances to get 225000 or 129000
- Will still get a 25% chance of both 112,500 and 72,000 in both choices even when having the option to choose at age 35 or 50
- Worth it to risk 6,000 to get substantially more
- Worth it to risk and trying to get substantially higher amount
- Worth it to risk losing 12,000 to get substantially more
- Worth the risk
- YES, THEY'RE THE EXACT SAME
- You have a 25% chance of making both 112,500 and 72,000 in both options

- You have a 25% chance of making less than the conservative amount. 75% chance to make more seems like good odds.
- You have a 75% chance of making more than the conservative amount. Take the chance! 6k isn't the difference between eating everyday and the soup kitchen.
- You have the same odds of getting 44k, BDF just makes the option of getting 112.5 available (at the risk of going from guaranteed 75k to chance of 4.5k less: a chance I'm willing to take)
- You need to make the same decisions for consistency.
- again, its simple.
- because I made the same decision at age 35 and 50 which leaves me with the same outcomes for the two scenarios
- because I'd have a 50% chance of making $144,000 as opposed to a 50% chance of making 96,000 and both offer a 25% chance of making $225,000. I risk less in both situations
- because there is a 75% chance of making over 70k
- because they are the same
- because they are the same
- both have higher values and same lower bound
- by greying the areas they are aasking the same question with the same results in both answer choice
- chance of $150,000 is greater
- choosing C allows you to get more money no matter what than choice D.
- conservative amounts are significantly closer to losing risk amounts, therefore risk is worth it in my opinion.
- consistent with my prior reasoning. the only thing that has changed is depicting the choices with greyed out information. I already stated my choices were independent of this information, for better or worse.
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- consistent with my prior reasoning. the only thing that has changed is depicting the choices with greyed out information. I already stated my choices were independent of this information, for better or worse.
- dont want to take chance of 32000
- end probabilities are the same, only illustrated differently
- exact same situation
- exact same situation
- greatest chance of $150,000
- guaranteed
- guaranteed
- guaranteed

- guaranteed
- guaranteed
- guaranteed $100,000
- guaranteed $150,000
- guaranteed $94,000
- guaranteed at least $94,000
- guaranteed not $141,000
- high potential reward and low risk
- high potential reward with a lower risk
- higher expected return
- higher expected return
- higher expected return in A
- higher expected return in BDE
- higher expected return in bcf
- higher expected return in bcf than a
- higher expected return in bcf than bce
- higher expected return in bde over a
- higher expected return in bde than a
- higher expected return in bdf
- higher expected return in f
- i have a headache - lol
- in both scenarios the probabilities are the same
- in both there is a 75% that I will get something higher than $70,000
- in both there is a higher chance of getting $70,500
- its the same pathway
- its the same question.
- its the same question.
- large chance of making more than conservative value with risk.
- less risk same reward potential
- low risk
- low risk
- low risk
- low risk but high potential reward
- lower risk same reward
- more rewarding, not that much risk
- my choice seems better
- my choice seems better
- my reasoning is same as the prior question. In the worst possible scenario i would only lose 5,000 dollars per year. But i have the opportunity to gain more than that.
- new choice seems better
- new choice seems better
- new choice seems better
- new choice seems better
- no chance of $88,000

- no risk of $88.000
- not willing to risk $88,000
- not willing to risk only getting $88,000
- odd of getting more money are greater in ACE
- options are the same, and ACF has no chance of 52
- prefer risk
- prefer riskier option again because difference between $112,500 and $75,000 is more significant than difference between $75,000 and $60,000
- same
- same branching pattern
- same branching pattern
- same branching pattern
- same branching pattern
- same chances
- same chances
- same chances
- same chances
- same chances
- same chances
- same chances
- same chances smae amt
- same ev in both cases. trees are equivalent.
- same ev. trees are equivalent.
- same idea, but in the second one I get to choose at age 50; prefer risk to conservative amount.
- same outcome
- same payouts
- same payouts
- same payouts
- same probabilities
- same probabilities
- same probabilities in both scenarios
- same probabilities in both scenarios
- same probabilities in both scenarios
- same question
- same question
- same question
- same reason as last one.
- same reasoning as each other response.
- same reasoning as each other response.
- same reasoning as each other response.
- same scenario
- same scenario
- same scenario
- same scenario

- same scenario
- same scenario
- same scenario
- same scenario
- same scenario
- same scenario
- same scenario diff layout
- same scenario diff layout
- same scenario different layout
- same scenario different layout
- same tree in both cases. my choice is independent of the greyed out information.
- save ev, trees are equivalent in terms of ev. at age 35, that's all I care about
- small risk high reward
- the $112,500 is enticing
- the BCFs offer more chance to earn above 50000 and theres a possibility of earning the most money possible
- the BDEs offer more chance to earn above 50000
- the BDEs offer more chance to earn above 50000
- the BDFs have more chance of earning above 50000 while the BCFs push you more toward the lowest possibility
- the are the same
- the choices are almost exactly the same
- the conservative choice of $150,000 seems favorable
- the outcomes for the two scenarios are thesame
- the potential benefit is much greater than the loss.
- the risk is not that great and they are the same choices
- the risk of losing money is not high
- the same question is being asked
- the same thing is being asked
- the same thing is being asked in both questions
- there is a 75% chance of getting more that $96000 in the first choice
- there is a greater chance of getting more money
- there is a greater chance of getting more money
- there is no difference in the two questions, both have the same likelihood of each answer choice
- they are asking the same question, only difference is the spinner is located at a different spot so the chances arent being determined at the same time.
- they are asking the same thing
- they are independent events and they probability of getting higher than $70,000 is the same
- they are statistically the same
- they are the same branching pattern
- they are the same choices presented differently
- they are the same just written differently
- they are the same.
- they have the same expected reutrn
- they're the same

- they're the same
- they're the same
- they're the same
- they're the same and overall you have a chance of making more if you choose c and 120000 isn't that much less than 150000
- to be conservative
- with BCF, I have a chance of getting 225000
- with a few options greyed out as impossible, the question are the same.
- with all other choices impossible,m the two questions are essentially asking the same thing
- worth risking to get a substantially higher amount
- xx
- xx
- xx
- xx
- you have the same chance of getting more than 45,000 and ACF will give you more money.

2 Open-ended responses if participants chose to revise at least one choice

As described in the paper, participants were confronted with inconsistencies and placebos. For both inconsistencies and placebos, the top of the screen read: "In one question you chose [Option 1] over [Option 2], but in another question you chose [Option 2] over [Option 1]." The screen then displayed both of the participants' choices and asked, "Do you think the two situations are different enough that it makes sense to have different choices, or should they be the same?"

There were two possible answers, which triggered different follow-up questions. If the participant answered "It makes sense to have the same choice", she was asked then asked to revise one choice or both choices. Then, she was asked the follow-up question: "Why did you want to change your choices as you did?" Unedited open-ended responses, sorted alphabetically and categorized by month of response, are listed below. Responses have been separated by whether the participant chose to revise one choice or both choices.

2.1 *Participants who chose to revise one choice*

2.1.1 Responses from July 2013

- 141,000 and 150,000 are not that different, and the highest amount in BCF is significantly bigger than 150,000
- 150,000 is more sound
- 150,000 is more sound
- 150,000 is plenty enough
- 150000 is a worthy amount compared to 88000
- 150000 is enough to justify taking the safer gamble
- 25% chance to get 225K
- 50% chance of 70,500 is better than 50% chance of 44,000.
- 50% chances in both scenarios are too different, I d rather chose the 150,000
- 50% of getting 150,000 is a better choice than 50% of 141,000
- 50% option similar to other 50% option, but greater earnings possible from 25% higher option, with equal earnings from lower 25% option
- 50% payout is good enough for me
- 75% chance of getting 150,000. Much better than 50% chance of 141 or better.
- 75% chance of getting higher amount than the 50% chance of 94,000. difference between 94,000 and 88,000 not too great
- 88,000 is lower than 94,000. I prefer conservative (BCE) rather than risking since there's possibility to get 88,000
- 88000 is not that much worse than 94000, however the upside is larger
- 94,000 is not too low an amount, but in BDE there's 25% chance to get 88,000
- 94k is close to 88, I want to get more.
- 9k is more than 6k.
- A is the safer option.

- ACE has more chance involved but could potentially rewards you more.
- ACE is a better choice for me.
- ACF has a higher potential earning. I would still get at least 47000 which is enough.
- ACF has better expected value
- ACF has better expected values
- ADE is a better choice for me.
- ADE is not worth the risk
- ADE is preferable because it is less risky and still has a good chance of a high payout.
- After seeing the two questions presented side by side and noticing that it was the same option (that is, the probability of reaching the given outcomes was still the same) in different manners, I decided to change my answer to reflect my actual opinion
- BCE is a safer option.
- BCE offers 100% chance of getting a higher pay than what 50% of BDE offers
- BCF prevents you from the risk of getting only 88K but leaves a 50% chance of getting >100K.
- BDF generally better except for 25% getting 88000
- BDF has 75% chance of getting more than the conservative $100,000/yr while BCE only has 50%
- BDF still have chance to get 88k
- Because in BOTH cases you have a 50% chance of ending up with 94K but in BCF the other 50% is greater than 150K (mean).
- Because in this case you have no risk of ending up with only $88K
- Because it has 1/2 chance of spending $141,000/yr,which is less than $150,000/yr.
- Because it is 1/2 chance of spending $94,000/yr, and only 1/4 chance of spending $88,000/yr. And it will also have 1/4 chance of spending $141,000/yr, which is more than $94,000/yr.
- Because it will cost me less if i choose ADE.
- Because my chances of getting $70,500 is more if i make the chocie i made
- Because the ADE choice had the lowest options. In ACF there were much higher options, any way it went.
- Because the expected value of 50% $141000 and 25% 88000 is higher than that of 25% 141000 and 50% 94000
- Because unless I am reading this incorrectly this is my highest expected value given where I am starting from
- Better expected payoffs
- Both are identical I and prefer to get 150000 at 50% over 100000 with certainty
- Choice ADF has a greater probability of getting >$70,500 and a larger minimum possible fund.
- Choice D is safer.
- Choise DE is safer than CE, but still taking a bit of a risk.
- D is better than C, F is better than E
- E and F both give larger sums than C and D
- Except for the 25% of getting 88,000/yr, I have a decent expected outcome if I choose BDF, so I thought it's worth taking the risk.
- F is more worth the risk than D because of the higher payout.
- For both options that smallest amount of retirement money is the same. But for ACF, there is a chance of getting 112,500 dollars.
- Generally if there is a chance of losing over 5,000 dollars, I choose the more conservative option.

- Going with A gives you $50k, while going with BCE has a 50% chance of getting you $75k. And if you go with BCE, the least amount you could get is $47k, only $3k less than $50k. The risk is worth the possible $3k loss.
- Going with BDE gives you a 75% chance of getting $70.5k or $75k with a 25% chance of getting $44k. Even though you could end up with $44k, since it is only $3k less than the most you could get with BCE, the 75% chance of getting over $70k is worth that minor risk.
- Guaranteed minimum is the same and 150,000 is more certain than 141,000
- Guaranteed money is enough
- Had second thoughts.
- Having already gone with B at age 35 and ending up with the worse of the two possibilities, I would be conservative and hold on to what I had instead of dropping even further.
- Having chose B and ending up at C or D, I would stay conservative so as not to lose more money, but having gained money by being at E or F, I would chose to gamble a little.
- Here you have the chance of a higher payout.
- Higher chance of getting $141k or more, despite risk of ending up with less money.
- Higher expected value
- I can deal with losing $6000 for a chance to gain $48000
- I can get more in larger %
- I canceled out the 141,000/yr in both options because the odds of receiving them in each case were the same. it was then between a high chance of receiving 94,000 and a lower chance of receiving 225,000 (ACF), and a high chance of receiving 150,000 and a lower chance of receiving 88,000. I chose ACF because i decided that it was worth the risk to try for the 225,000.
- I chose ACE because I have the chance of getting 112,500 for my retirement fund.
- I chose ACE because it is more secure.
- I chose ACF because
- I chose ACF because
- I chose ACF over ACE because the the F branch is less risky than the E branch while the C branches are the same.
- I chose ACF over ADF because the best case scenario in ACF is much better than that of ADF.
- I decided that the difference between 44,000 and 47,000 was not enough to prevent me from taking the chance of getting 70,000.
- I didn't pay attention to the probability when I chose my answer for the first time.
- I feel that ACF gives out a higher reward than ACE.
- I feel that the ADE path is less risky with a 50% chance of $150,000 while there is a 50% of $141,000 with ACE
- I have 25% chance getting the highest amount. While the downside is somewhat eliminated.
- I have 25% to get 225k
- I have 50% possibility to receive 111,250/yr and it is quite a big money.
- I have a chance of obtaining the max. amount of money.
- I have a difficult time differentiating between two things that are visually different oops
- I have an option to earn $112,500 if i pick this.
- I have chance to get 225,000/yr. And the least money I would get is higher than another choice.
- I have more of a chance of earning more money this way than before.
- I initially picked ADF because the lowest value possible was greater than in ADE. Looking again at the odds, it makes more sense to favor ADE because there is a better chance to earning more.

- I just like it better
- I just realized I prefer BCE more. I think earlier I said I am quite indifferent between these two, but now I think I like BCE more since 94,000 is not too low an amount and 150,000 is 50% higher than 100,000
- I like being risky and taking my chances.
- I like having a choice of money money in Option C or D.
- I like it better
- I like it better
- I like it better
- I like the higher risk now.
- I like the probability of the higher payout.
- I like the upside potential compared to the downside risk.
- I like the upside potential compared to the downside risk.
- I liked the 25% chance that I could make 225,000 a year more than the 50% chance of 150,000
- I prefer ACE due to the higher expected value of the payout
- I prefer C over D
- I prefer more
- I prefer the chance of a higher payout as there is a 50% chance of the $141K payout.
- I prefer the chance of a higher payout rather than running the risk of the $88K.
- I prefer the chance of a higher payout.
- I prefer the chance of a higher payout.
- I prefer the chance of a higher payout.
- I prefer the chance of having a higher payout.
- I prefer the situation that I have 50% possibility to receive 75,000/yr than the situation that I have 50% possibility to receive only 70,500/yr.
- I prefer the situation that I have 50% possibility to receive 75,000/yr to the situation that I have 75% possibility to receive less than 70,500/yr.
- I prefer the situation that I have 50% possibility to receive more than 70,500/yr to the situation that I receive fixed 50,000/yr.
- I prefer the situation that I have 75% possibility to receive more than 70,500/yr.
- I prefer the situation that I will have 50% possibility to have 75,000/yr with the choice BCE to the situation that I have 25% possibility to have 112,500/yr with the choice BCF.
- I realized 225000 is worth gambling for relative to getting 100000 with certainty
- I realized I prefer BCF more since the lowest amount in this choice is 94,000, which is bigger than 88,000. The biggest amount is 225,000, which is larger than 150,000. Although in BDE the possibility of getting 150,000 is 50%, I care more about the lowest amount
- I realized its better to make a choice with a higher investment amount
- I realized that I made a mistake in calculating expected values
- I realized that I would prefer a larger minimum payoff
- I realized that the choices were the same.
- I realized that the difference in appearance made me change my mind. Sometimes the way things are presented in a situation appear differently or better than in other situations.
- I recalculated expected values
- I still have a hance to get $112500. Will take risk

- I think I had a difficult time visually understanding that the two options were the same, despite having to two 50/50 chances in one.
- I think I made a mistake when I put in BCE, BDF offers 75% chance to get roughly 150000 or more while BCE only gives 50%.
- I think I take more risks now than I did earlier. The larger amount is much larger than the middle amount.
- I think choice BCF takes high risks.
- I want a chance to get more money even if it isnt a sure thing and it is only a chance
- I want get at least 94,000.
- I want more options and this provides the conservative choice of 50,000
- I want to be consistent.
- I want to gain the maximum profit
- I want to get at least 94,000.
- I wanted the greatest possible expected valux
- I wanted to take the risk.
- I will gain more money.
- I will gain more money.
- I will have a higher minimum salary.
- I would choose ADF because it is less risky
- I would like to earn the maximum amount.
- I would like to take the risk.
- I would prefer 150000 with probability .5 over 225000 with probability .25 and 141000 with probability .5
- I would rather take the risk for the higher payout
- I'd rather take 94,000 for sure than taking risk of getting 88,000
- Id go with more choices. There is not much difference even if i take the conseravtive one
- If you choose A you end up with $50k. If you choose BCF, the worst you can do is $47k which is only $3k difference. At best you can get $112.5k which is a lot more money. Additionally, there is a 50% chance of getting more than $50k by going with BCF.
- If you just look at the lower branch, I would take the risk to get either $70,000 or 112,500 instead of conservatively getting $70,000
- In BDE, there is a 50% chance of getting $75,000/yr, while in BCF, there is a 50% chance of getting $47,000/yr.
- In BDF I get a chance at a larger amount and 44,000 isnt much smaller than 47,000
- In both choices there is a 25% chance of receiving 44,000/yr, but in BDF there is also a significant chance of receiving 112,500/yr, while in BDE the highest possible is 75,000/yr. In my opinion,70,500 and 75,000 are comparable and not substantially different incomes, while 112,500 is much higher than 70,500.
- In both there is a 25% chance of getting 88+ but in ACE there is a chance of getting 225,000 The highest in ADE is 150. That is not too much difference with 141
- In terms of the conservative plan this was the best option i could get
- It has fewer risks to have the income which is less than $100,000/yr.
- It is safer.
- It makes more sense to choose the option with a higher chance of getting over 70,000
- It makes sense to have a sure way of gettting an ammount

- It makes sense to have a sure way of gettting an ammount
- It makes sense to have the chance at more money
- It might be worth risking losing $6k to potentially gain $37k.
- It seems I had a difficult time understanding that despite the fact that the two questions presented the options in visually different manners, the probability of reaching the given outcomes was still the same.
- It would be better to take the chance for the more money in BDF
- Just looking at the bottom branch of BCF, it follows with all of my other risk decisions
- Less risk
- Lowest possible amount in BCF is higher than in BCE.
- More chance for more money
- More choices
- More money is more likely.
- More money is more likely.
- More money is more likely.
- More of a chance to earn more money
- My probability of getting income in $70,000 figures increases
- Once again, after choosing B and ending up with the worse choices of C or D, I would be more conservative, but ending up with E or F, I would gamble a bit more because the possible gain in money is worth the possible small loss.
- Overall avg. retirement is higher.
- Plan ACE ends up being a lot more financially secure than ACF.
- Possible higher income per year
- Realized that payout options from BCF were more sound.
- Simpler and more direct. Also, the chance for a larger payment is a possibility
- Since the BCF one has chance to get more money
- So I would have the chance of a larger retirement fund.
- Still have a 75% chance of getting more than 94000
- The base payout for BCF is higher.
- The chances of getting a sum higher than $94,000 are worth the 25% chance of getting a sum slightly lower than $94,000.
- The choices are the same. And this choice has a probability of getting much more money.
- The choices are the same. Grayed out parts are sunk.
- The choices are the same. The probabilities are just split up differently.
- The difference between the conservative amount and the lowered amount is minimal, compared to what can potentially be gained.
- The expected value of 25% $141000 and 25% $88000 is higher than that of 50% $94000
- The fact that the two questions presented the options in visually different manners made it difficult to understand that the probability of reaching the given outcomes was still the same, and thus I changed my answer to reflect my actual opinion.
- The fact that the two questions presented the options in visually different manners made it difficult to understand that the probability of reaching the given outcomes was still the same. I changed my answer to represent my actual opinion.

- The fact that the two questions presented the options in visually different manners made it difficult to understand that the probability of reaching the given outcomes was still the same. I changed my answer to represent my actual opinion.
- The fact that the two questions presented the options in visually different manners made it difficult to understand that the probability of reaching the given outcomes was still the same. I changed my answer to represent my actual opinion.
- The grayed out options confused me.
- The highest I could get in option ADF was only 150,000. Because there was a 25% chance of receiving a much higher amount than 150,000 in ACE, and a 50% chance of receiving a comparable amount (141,000), I chose ACE.
- The left path allows for 50% chance of getting 70,500. When compared to the other question, I realize now the outcomes are the same.
- The low end of each is $44,000 with the same chance. While ADE offers a greater chance of receiving $75,0, I was happy to risk $4,500 for the chance to receive $112,500/yr.
- The lowest possible amount of money in BCF is higher than the lowest possible amount in BDF.
- The minimum is more satisfying here.
- The potential payoff is MUCH higher than the potential loss.
- There is a 75% chance of getting at least $70.5k.
- There is a decent chance of getting $75,000
- There is something about the top end being less than $112,000 that makes me reluctant to risk receiving $44,000/yr. I know it is only $3,0, but imagining living off $47,000 seems easier than $44,000. But, when the top is higher, I think the risk is worth it.
- There is still 25% chance to get more money
- There was only a 25% chance or receiving 88,000 in choice ACE, but in ADF there was a 50% chance of receiving 94,000. Since there was a 75% chance of receiving a considerable amount of money in ACE, i picked that one.
- They are the same thing represented differently
- This allows for a good, conservative chance at a high amount of money.
- This appeared more profitable.
- This gives me a better chance of getting more money
- This is consistent with my belief.
- This is safer.
- This is safer.
- This provides you with a 75% chance of getting at least $70.5k.
- This provides you with a 75% chance of getting at least $70.5k.
- This seemed better.
- This seemed like a safer risk.
- This will give me more money.
- This would allow me more money.
- While not minding getting 94,0, choice ACF gives the possibility to get 225,0, which is a very high amount
- Willing to take the 50/50 chance of a 6k cut for the chance to get ~50k more.
- With ADE, there is a 75% chance of receiving $70,500 or above. With ACF there is a 50% chance of receiving $47,000.

- You have a higher chance of getting 75,000 dollars, and it is not possible to get as low as 44,000 dollars.
- because chance of getting 44000 is low
- because chance of getting 44000 is low
- because i can avoid the lowest payment
- because i dont need to worry about getting 47000 while i have chance to win 112500
- because i find it the same possibility to get 70500 in the two different graph
- because i find it very likely to lose money since it is 50%
- because i find it worth taking the 25% possibility to lose only 3000 a year
- because i find that the chance to get more than 47000 in BDF is higher than BCE
- because i find to possibility of losing 3000 when comparing 44000 and 47000 is tiny
- because i m willing to take th3 risk to losing 3000 when i may win more chances to get 70500
- because im willing to take the risk and win more in reward
- because it can win more than BDE and have fewer loses if fail
- because its not likely to get 44000 and have possibility of earning more
- because the chances of getting the lowest amount is the same but there are chances that I can get very high income.
- because when i have the same chance of getting the lowest payment, i have more chances to earn more than 75000 even though i may lose 4500 if i fail to get112500, its not a big deal
- better to risk
- bigger difference between upper and middle than lower and middle amounts
- chance of making 70,500 instead of 44,000 or 47,000 which is only a 3000 loss if the investment went bad
- greater earnings possible than D
- guarantee is greater
- guaranteed money is higher
- higher chances for more money
- higher expected value
- higher expected value
- higher percentage in total to get higher amounts on average
- in this situation it earns more with choice C
- it is likely to be more rewarding
- larger payout
- lets go with 75% chance of over 100k rather than 50% chance of over 100k
- more conservative with lowest $ i can get
- prefer more
- rather not take the risk
- the highest amount in BDF is 225,000, which is significantly higher than 150,000. Also, the difference between 141,000 and 150,000 doesn't seem to me that huge.
- the outcomes are the same
- the payoffs are equivalent in each case
- they're teh same
- they're teh same, some risk but higher return
- to have the opportunity of getting more than 100000 and because the worst case scenario is still better than in the other one

- took $6,000 penalty vs. $12,000 risk
- will take risk for higher spending
- worst case scenario is better
- would rather have 50% chance of 150,000 over 50% chance of 94,000
- would rather have 50% chance of 150,000 over 50% chance of 94,000

2.1.2 Responses from August 2013

- $141,000/yr is still a decent income, so it makes sense to take the chance.
- $225,000/yr vs $94,000/yr is risky but best option
- $94,000 is close enough to $100,000 for me.
- %75 chance of getting income greater than $88,000/yr in BDF.
- 150000 is not high enough for me to give up the 100% possibility to get 100000, instead of risking a 25% chance to get 88000
- 225000 is high enough for the risk of getting 88000 as a possibility
- 3 of the 4 amounts are still attractive
- 46,000 is higher than 48,000
- 50% chance of making over $70K either way.
- 75% chance income is greater than lowest possibility.
- 75% chance of getting $94k+
- 75% chance of getting an income greater than $88,000/yr in BDF.
- 75% chance of making over $70K per year after retirement as opposed to 50%, while only risking a max of $3K.
- 88,000 is a small amount to live on. And the risk of getting that is not worth it.
- 88,000 is not much less than 94000 so the chances are ever in my favor
- ACE is more attractive
- ACE makes more sense
- Again, I am more likely to choose the riskier option.
- Again, the expected value of ACF is higher than that of ACE.
- Although I think both options are not that far off from each other, I think the average amount per year for ACE is slightly higher than ADE
- Although the chances of making more than 94 k with ACF is the same as ADF, ACF has a bigger Max amount
- Apparently I like to be risky.
- As it was mentioned before, I am ready to take a risk if the difference between smallest and guaranteed is not that big of a deal.
- As last question, I realized that I don't want to risk of getting money below 90000/yr, so I chose BCE
- Avoid 88,000/yr at all costs, even if probability of earning only 94,000 is higher in option ACF
- Avoid possibility of only earning 88,000/yr at all costs!
- BCF is risking 6000/yr of 50% chance to get another 50% chance of earning 414000 or 125000, so I decide to choose the BCF one.
- BDE has a higher average payout.
- BDE has chance go get 88000/yr, without any possibility to get high amount of money(above 200000). So BCF is my choice.
- BDE has chance to get 88000, plus 150000 is not high enough for the risk

- BDE has the chance to get 88000/yr. BCE and BDE have the same max, so I prefer BCE.
- Baseline of 50% at 94,000 with opportunity to make much more outweighs risk of getting only 88,000
- Baseline of 94k with opportunity to make more. 88k is getting a little too low, therefore high risk
- Because ADE doesn't have any chance of getting 225,000/yr. And there's not much of a difference to me in the lowest possible income per year between ACF and ADE.
- Because BDE avoids the %50 percent chance of receiving one of the lowest amounts.
- Because BDF offers the greatest chance of getting either 70,500 or 112,500.
- Because I liked the chances.
- Because I realized that I was inconsistent in my choice - A 25% chance of 44k is good enough to take the risk for a higher amount.
- Because I the chance of only getting 70,500 isn't really enough to outweigh the option of getting 112,500.
- Because I won't risk the chance to get money below 90000/yr, so I decided to choose BCE over BDF
- Because I would rather have a 25% chance to get 112k than a 50% chance to get 75k.
- Because I would rather have a 75% chance to get above 44k than a 50% chance to get above 47k.
- Because a difference in $3000 from $47k to $44k is enough to change my decision. I realized that lowering the baseline minimum from $50k to $47k changed my mind.
- Because at age 35 I am more likely less risk averse so I would be inclined to take the risk presented in ACE for a potential greater return
- Because the chance to get a higher max of 112k is more desirable.
- Because the expected return is higher
- Because the expected value is higher
- Because the expected value of C is higher than $75,000
- Because the highest level of possible income is 150,000 for both, but the lowest in ADE is lower than the lowest in ADF.
- Before, I believe I was thrown off by the
- Before, I believe I was thrown off by the
- Better chance to earn more
- Better chances.
- Better chnace of having more money
- Better opportunity for more money
- Better payoff.
- Better security, over 94,000yr
- Better than risking chance of only having 88,000/yr
- By choosing BDE over A, I give myself a 75% chance that I will receive >$100,000/yr.
- Conservative
- Conservative choices are much better than the other even if I lose my chance with luck
- Conservative path
- Conservative path
- Conservative person.
- Either way, the income is good money, so might as well take a chance.
- For some reason, Id rather go with the 75% of getting 141 and 150 against the 50% chance of getting 94 and 25% for 141 and 225.

- For this choice, the odds of getting more than 50,000 are 75% in BDE, whereas in BCF the odds of getting more than 50,000 are 50%
- Getting more amount when possible
- Given my personality, risk preferences, and age, the riskier option appeals more.
- Given my personality, risk preferences, and age, the riskier option appeals more.
- Given my personality, risk preferences, and age, the riskier option appeals more. I like the chance of higher payouts.
- Giving it more thought, I suppose it would be nice to try for that $70,500
- Greater likely hood that I'll make more than $70,500
- High likelihood of 150k outweighs small chance of 88k
- Higher Expected Value
- Higher chance of getting a higher amount.
- Higher chance of getting above $94,000.
- Higher guaranteed payout
- Higher possible outcome in ACE
- Honestly, this was the hardest decision of the survey, so I'm not surprised that I chose differently at first. Both have a 25% chance of getting $70,500, and
- Honestly, this was the hardest decision of the survey, so I'm not surprised that I chose differently at first. Both have a 25% chance of getting $70,500, and
- Honestly, this was the hardest decision of the survey, so I'm not surprised that I chose differently at first. Both have a 25% chance of getting $70,500, and yes, the one choice has a 25% chance of a large sum, but the other option seems safer, since the conservative path is a lot more attractive than the other conservative path.
- I am more likely to choose the riskier option.
- I am willing to risk making 9,000 less a year than I would if I was conservative, because it comes with the chance of making 75,000 more a year than the conservative choice.
- I believe
- I believe
- I believe
- I believe
- I believe BDE is the more conservative choice and the better choice. The $112,500 is not enough money for me to justify increasing my chances of earning only $47,000. I believe I could live comfortably with 70-75k, would have to be careful if I earned in 40ks and could live very well with 112,500 although it would likely be more money that I would need. Since I don't feel I need $112,500 to live well I see no point in taking the risk for more money. The 3,000 difference between 44k and 47k is negligible to me especially since there is a significantly lower chance of me earning 44k.
- I changed my answer because I must have made a mistake going through the first time. I have no idea why I would have chosen D before.
- I changed my mind to choose BCE because I 94000 is higher than 88000 and 150000 is higher than 141000. Which means I have higher possibility to get more if I choose BCE over BDF.
- I clearly need to double check my answers.
- I didn't change my choice. I still think if there is a possibility to get more and there is not that much of a difference between smallest possible amount and guaranteed amount, then it worth to try.

- I don't really remember this specific scenario, but at this moment, this is what I would choose.
- I guess I no longer want to be a compulsive gambler...more or less?
- I guess how to choices are presented somehow made my thoughts less clear. I was focusing on the 50% chance of lowest money, and that's why I didn't choose it in the first place
- I have a high percentage chance of earning $70,500 or more which is a good situation.
- I have greater odds 50% of getting 150000 a year compared to 94000
- I like the chance of having $112,500/year that's presented in BCF and not BDE.
- I like this option better
- I love to take risks
- I prefer
- I prefer
- I realized that I had misinterpreted the pictures
- I realized that both BDE options said the same thing, even though they were shown differently.
- I realized that it makes sense to have the same answer for both questions.
- I realized that the chance of $70,500 or $75,000 was always 75% in BDE, whereas before I thought it was only 50%.
- I realized that the two BCF options both said the same thing, even though they were written a different way. I didn't realize this when I was making a choice the first time.
- I realized that they were just presented differently but ACE is still my preferred choice.
- I seriously don't know why I had it the other way in the first place...probably because this room is really cold and I'm in a rush to get out of hear because I am uncomfortable!
- I think that the risk of getting the higher sum of money, negates the risk of getting the lower amount. Furthermore the difference between the lowest amount of money isn't too far away from the conservative amount, so it wouldn't really necessitate that huge of a lifestyle change.
- I want to always be able to make the most amount of money, no matter how risky.
- I wanted to risk going for the $225,000 because even if I didn't get it (options F), I would still end up with $141,000.
- I was feeling lucky!
- I wasn't thinking clearly before
- I would be risking a relatively small amount of money for greater returns
- I would like to have a conservative route.
- I would like to have a conservative route.
- I would rather face a 75% chance at ending up with over $100,000 than the 50% chance at ending up with less than $100,000.
- I would rather have the chance to make a large amount of money, even if that comes with the risk of making less money than the conservative scenario ensures.
- I would rather take the risk of possibly making a little less money with the chance of making a lot more, than take the chance of making a lot less but a bigger chance of making a little more.
- I would rather try to make more money.
- I would stand to gain a large amount of money if I were lucky, and the lowest option is not as low as the one in BDE
- I'd rather have a chance at a significantly higher amount, with the majority amount only slightly smaller, than have no chance at the highest amount.
- I'd rather not get stuck with $47,000, even if it meant a possibility of $112,500. Much better to choose a plan that is more likely to leave me with circa $70,000

- I'm confused about this question. Better security in $94,000/yr vs. $88,000/yr that was presented in previous option (?)
- I'm so sorry for all the mistakes I keep making!
- Im okay with losing up to 12k in order to get a higher investment in the future.
- In ADE there is a 75% chance of getting more than $94,000, while in ACF there is only a 50% chance.
- In ADE, I have a 75% chance of making over 94,000; whereas in ADF, I have a 50% chance of making over 94,000.
- In ADF there's no chance of getting 225,000/yr at all.
- In BCE there is a 50% chance I will make $150,000 or more, but in BCF there is only a 25% chance I will make over $150,000.
- In BCF, there is a 50% chance that I'll receive $70,500/year or $112,500/year. Though the other 50% is $47,000/year, I would rather have the chance of $112,500/year than only have the option of $75,000/year or below (what's shown in BDE).
- In BDE I have a 75% chance of making over 100,000, whereas in BCE I only have 50% chance of doing so.
- In BDE the probability of getting 75 000 is higher than in BCF.
- In BDE there was a 50% chance I would make $150,000 or more and in BDF there was only a 25% chance I would make $150,000 or more.
- In choosing BDF over BCF, I give myself a 75% chance of getting an income >$94,000/yr, rather than a 50% chance, like in BCF.
- In my head this decision came down to risking $3k to potentially make $23k. I believe that is a worthwhile risk since $3,000 a year won't make the same impact that $23k will make. Also in my opinion I will have to be conservative to live with 44k-47k regardless of what end of spectrum I am on. The risk to live more comfortably with $70.5k is worth it to me.
- In this choice I have a 75% chance of earning $70,500 or higher where as previously my odds were not as good.
- In this situation, I believe the opportunity warrants the risk.
- It is worth the risk not to choose ACF.
- It is worth the risk not to choose the conservative path.
- It is worth the risk to increase total money.
- It's worth the risk of getting more money
- Losing 6k isnt that big a deal when i can get upwards of 200% return difference
- Lower risk
- Lower risk.
- Money is still good so take the risk.
- More money
- More money
- My previous responses should be a good indicator here. Differences in payouts low enough for me to take the risk in BDF
- Opportunity to get high amount of money and still safe
- Possibility of getting more amount than guaranteed.
- Same chance of getting 94k but id risk losing 9k for a chance of getting 75k more
- Same choices
- Same choices

- Same odds of getting 88k; however, id risk 50% odds of 141 to get 225k against 50% odds of getting 150. I guess my real answer is if the difference is low enough, then id settle against potentially getting a lower payout at 65 if the other optiomn (the 225k) is appealing enough
- Similar to before $88,000 is sufficient to live off of, but having a change to have triple that amount is more appealing than being conservative with my decision.
- Simpler layout
- Small increase in opportunity don't warrant the risk of being left with only 88,000
- Small risk/ higher reward
- Smaller loos, bigger reward
- Somehow in my brain it all works out.
- Somehow in my brain it all works out. While I'm being a little more conservative and not coo
- Somehow in my brain it all works out. While I'm being a little more conservative and not coo
- Sure to make higher than lowest possible yield
- The 50% chance of receiving $75,000 from BCE sounds more lucrative than the 50% chance of receiving $70,500 from BDF.
- The amount of money possibly saved in choosing the conservative didn't outweigh the chance of receiving the higher amount.
- The average amount I would make averaged over a number of years is higher than the other choices.
- The average of ADE is higher than $100,000 a year. I did not look at it long enough the first time through.
- The average of C is higher than that of option D.
- The average value is higher in BDF than in BDE.
- The average value of what I would earn over a number of years is much greater than the average value of what I would earn from the other choice.
- The believe the average for ACE is higher than that of ADE. I must not have looked at the question for long enough the first time around.
- The chance to have 225000 to have that much money is awesome
- The chances of making more money is better with BCF than BDE.
- The conservative choice for ACF is fairly close to the conservative of B so it wouldn't be that much of a loss to go for the larger amounts of ACF
- The conservative choice of F is only 3,000 more than my worst chance in E but I would gain more than 20,000 more.
- The distribution of the probability is the same in the both scenarios. I think I got tricked and made different choices.
- The expected value of ACF is higher than that of ACE.
- The guaranteed $75,000 from BDE sounds safer.
- The lowest possible income level is lower in ADE than ADF.
- The minimum of BCF is 94000/yr, and the maximum is 225000. So compare two of the choices, max are the same, so I will take the higher min one.
- The odds for getting 225k is the same in both situations but theres a 50% chance of getting 141k and a 25% chance of getting 88k in BDF vs 25 and 50% in BCF respectively
- The probability of me having a higher income is greater in ACF than ADE
- The two BCF options were shown differently, even though they said the same thing. I didn't realize this when I made my choice the first time.

- There appears to be a greater likelihood of obtaining a higher spending amount with ACE. With path ADF, there is a 50% chance of $94,000/year, whereas in path ACE, there is a >50% chance of obtaining >$94,000/year.
- There is a 25% chance of getting the highest value, I will give it a try
- There is a 50% chance of earning more than $70,000 in both BCE and BDF. However, the amount in BCE is slightly higher. Furthermore, the chance of earning more than $100,000 in BDF is too small to risk the lower payout if I don't receive the max payout.
- There is a greater chance of obtaining >$94,000/year with path ACE.
- There is a higher chance of getting a larger amount
- There is higher probability of getting 75 000 in BDE rather than in BCF.
- There's a 50% chance of getting 141,000/yr in ACE and a 50% chance of getting 94,000/yr in ACF, so I figured it would be safer to go with half a chance of getting 141,000 over 94,000 per year.
- They are similar but I think i would prefer the option with higher chances of having more moeny
- This scenario brings a higher probability of a higher payout, although the lower payout is lower than the other choice's lowest. That's a risk I'm willing to take.
- This scenario brings a higher probability of a higher payout, although the lower payout is lower than the other choice's lowest. That's a risk I'm willing to take.
- This scenario brings a higher probability of a higher payout, although the lower payout is lower than the other choice's lowest. That's a risk I'm willing to take.
- This survey is too long. 25% chance of 112,500 is worth the risk.
- Too much trouble
- With BDF, for me at least, id rather risk trying to get the 225k. THe difference between 50% chance of either 141 or 150 is rather small (9k is not that big a difference in my mind here)
- Would like an conservative option
- You can lose less and gain more
- You have a higher chance of obtaining >$94,000 with path ACE.
- although the percentage is low, the change of having more money is appealing. The probability of making 9,000 dollars less than ADE with the chances of ACF is worth the risk.
- at least 50% chance to get two high amounts
- avoid only making 94,000/yr
- because BCF has a higher minimum value (94000)
- because earlier I didn't realize that the probability of making more money in ACE is higher than that in ADF. Although, the minimum amount in ACE is low, I want to take the risk
- better chance at more money
- better chance at more money
- better chance of 75,000
- better chance of 75,000
- better chance of earning over $88,000/yr
- chance at 112,500 makes it worth it
- chance for higher payment
- for ACF there is 50% chance that I will make 94k but with ACE there is only 25% chance of me making 88k (which is not much lower than 94) and there is 75% chances of me making 141k or 225 k
- higher chance of earning over 150,000

- higher chance to get more money/yr
- higher maximum
- higher minimum pay, equal maximum pay
- higher probability of earning 141,000/yr than the minimum possibility of 88,000/yr; 141,000/yr is higher than 100,000, so better option.
- its the same diagram just more complex
- jij'p
- less chance of less money
- less chance of less money
- less chance of less money
- more chance at different values above $70,000
- more chance at making more money at different ranges above $70,000
- more chance of more money
- more gain
- more money
- more money in BCF
- more opportunity to have more money
- not worth the risk of losing 9,000/yr
- opportunity to earn over 94,000/yr
- the blue boxes confused me and i couldn't calculate the probabilities correctly
- the difference between max and conservative is more than the difference between min and conservative so it's worth a shot
- the overall payoffs seem higher
- the probability of making 141,000 is higher
- the range of incomes I am comfortable with.
- there's a chance for a higher payoff
- there's a chance of a higher payoff
- there's a chance of a higher payoff
- there's a chance of a higher payoff
- when you're as low as $47,000, it's better not to even risk going lower

2.1.3 Responses from September 2013
- because I felt like it!
- because I felt like it!
- dont know dont care!
- dont know dont care!
- felt like it duh
- felt like it duh
- i like cheese
- i like cheese
- sometimes gotta do what ya gotta do
- sometimes gotta do what ya gotta do

2.1.4 Responses from October 2013
- ....

- ....
- Although 225,000 seems tempting, getting 150,000 is a decent amount and is guaranteed.
- As said above, I seem to like this the most.
- B is much safer
- Because I have no many possible outcomes, I think it's worth the risk to get as much money as possible.
- Choosing BDF over BCF gives me a better chance of getting the most money possible.
- Come to think of it, I would rather choose E than risking the risk involved in F
- Come to think of it, I'd prefer 150,000 for sure rather than getting 108,000 or 225,000 with 0.5 probability, respectively.
- F is much safer
- Give higher expectations
- Give higher expectations
- Greater Expectation in ACE
- I don't like the risk of maybe only getting 26,000
- I don't like the risk of only maybe getting 26,000
- I dont want too many money
- I dont want too many money
- I prefer the choice with less risk
- I prefer the less risky one
- I prefer to consistently choose the one with less risk
- I think my choices should be consistent
- I think the risk involved in F is not worth taking, when I can get E for sure.
- I thought about it again, and concluded that this was the choice I want to make the most. (There's risk that is neither too low or too high)
- I want to keep my decisions consistent
- I want to keep my decisions consistent
- I wasn't sure if I like E or F more in the process. Now I decided on E.
- I would never want to risk getting 52,000.
- I would rather get 150,000 than risking F
- I would want to change my choice because the risks were not consistent
- It looks like ACE is much risker than ADF
- It looks like ACF is much safer.
- It looks like ADE is much riskier.
- It looks like ADF is much safer
- It looks like B is much safer.
- It's better to have the 50% chance of receiving 75,000 rather than 54,000
- More expectation in ACF
- The expectation of C is greater than D
- The probability of getting at least $72,000 is higher in choice BDF, and a possible lost of $3000 is a risk I'm willing to take to get a gain of $40,500 if I were to get the best outcomes in both situations.
- The probability of getting at least $72,000 is the same as $48,000, and if $50,000 is the standard amount of money needed for retirement, a loss of $2000 isn't that bad and is worth the risk to try to get more money.

- The probability that I will get at least $72,000 is higher than the probability that I will get $46,000
- The situations are the same, I should have the same answers
- They're the same situation, just displayed differently. There is no reason to have different choices.
- Thinking of opportunity costs, I'd be giving up a lot if I picked a riskier choice.
- delta_up
- feel that way.
- feel that way.
- give higher expectations
- give higher expectations
- make more sense
- make more sense
- prefer having a stable results at higher income
- prefer having a stable results at higher income
- risky
- risky
- risky is fun
- risky is fun
- safer for high payoff
- safer for high payoff

2.1.5 Responses from November 2013

- $100,000 is a desirable base value, and option A is less risky. Were I to choose BDE and end up with $74,000, i would highly regret not choosing a guaranteed payment of $100,000.
- $100,000 is guaranteed and this survey is way too long.
- $100,000 is guaranteed.
- $3000 seems a negligible loss compared to a potential $30000 gain
- $75,000 doesn't make much difference where as $112,500 will.
- $86,000 is close enough to the conservative value of A that the risk is worth it to potentially get 150,000.
- 'go big or go home' type thinking
- 'go big or go home' type thinking
- 'go big or go home' type thinking.
- 100,000 is guaranteed.
- 25% chance of getting $64k a year is too high (and the money too little) to risk for only $150k over $100k.
- 44,000 is not much less than 50,00 if there is a chance id make 75,000 or 70,000
- 44,000 is too low of a number for me to risk having. 47,000 is a good guaranteed amount.
- 44,000 is too low of a number for me to want to risk having. A 50/50 shot at ~50k is not bad.
- 44k is too low of a number for me to risk having.
- 44k is too low of a number to even have as a possibility, in these comparable situations.
- 47,000 is a satisfying number for me, so it is worth taking the risk of getting the extra 28k.
- 47,000 is close enough to 50,000 to make the risk worth it. A 50/50 chance of getting 75k is a good bet, especially when I am only risking losing 3,000 per year.
- 50% chance of a loss of only 5k per year with a 50% chance of increasing income by more than 17k

- 50% chance of risk of 88K is too high.
- 50% chance that I will lost money if I risk it versus choosing conservatively
- 54,000/yr is not too low; possibility of the 112,500/yr is worth the risk.
- 64,000 is really low
- 64k, 75k are relatively high amounts and the difference makes less of a lifestyle impact than the difference at lower amounts.
- 75% chance of getting $72,000 or higher over 50% of 75,000.
- 75% chance of getting 120,000 or 150,000 compared to 50% of getting 80,000
- 75% chance of getting 141K or greater vs. 100% chance of 94K makes it worth the risk.
- 75% chance of over $144,000.
- 75% chance you will make more than $50,000. I'll take it.
- 75% is acceptable risk
- 75% is now over $144,000.
- 80 isnt bad, 50% chance of a lot more
- 80,000 is only 20,000 less than 100,000 but there is a 50% chance that I could get either 20,000 or MORE in ACF
- 81000 is alot less than 90000 so i wouldnt want that risk
- 90000 vs 81000
- 90000 vs 81000
- 90000 vs 81000
- 90000 vs 81000 even though theres a higher chance i'll get 90000 its worth it
- 92,000 is the only option where I would receive less than 100,000, and it is worth the risk to get more because the margin between 100,000 and 92,000 is not that great
- A 50% possibility of getting $150,000 appeals to me more than taking a chance on getting $80,000.
- A LOSS OF 20,000 WITH A CHANCE OF GETTING 50,000 IS DESIRABLE
- A LOSS OF 20,000 WITH THE CHANCE OF GETTING 50,000 IS DESIRABLE
- A chance a to 225000, without risking getting too low (81000 still bearable)
- A guarantees $100,000 while BCF guarantees $86,000, which is close enough to A's conservative value that it is still appealing. Additionally, the 50% chance of getting a value high than A's conservative value makes BCF appealing.
- ACE has a probability of yielding more money per year in the future than ADE
- ACE has a probability of yielding more money per year in the future than ADE
- ACE has a probability of yielding more money per year in the future than ADE.
- ACE seemed a bit too risky with the 26K payoff.
- ACF seemed overall less risky with the chance for a much better payoff.
- ACF still retains 75% chance of winning above 100,000, and a 25% chance of 225,000. Better chances of bigger payoff than ADE
- ADE gives me a 75% chance of getting 144K or higher vs just a 50% chance in ADF
- ADE is a bit risky but the expected outcome is still better than ADF
- ADE seemed a bit too risky with the 26K payoff.
- ADF looks more simple.
- ADF seeemed a bit safer.
- Again, I would choose CE because there is a 75% chance of getting over $70,000, compared to a only 50% with CF. Plus, the difference between 44 and 47,000 are not that extreme.

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- Amount of loss is much less than amount of gain
- As long as I am guaranteed a bare minimum of $48,000 a year, I am satisfied with making what I consider the "riskier" choice to have the possibility of making $112,500.
- At 35 I would want to be riskier with my money and have the option of making 225k/yr
- At 35 you should be a little riskier with money
- At 50 years of age, I would like to be more conservative and not risk making only 81/yr
- At age 35, I would like the option of making 225k/yr even if it means having the option of making only 81/yr
- At first I misread the chance of earning 45,000 to be 25%,not 50%.
- At the age of 50, you're probably more concerned about financial security, and so opting for a 50% chance of a guaranteed $150,000 is a better choice than opting for a 50% chance of a guaranteed $90,000, even though the rewards might be higher.
- Average payoff higher
- BCE is safer, doesn't have a 25% risk of getting 88K.
- BCF is a better choice / more safe than BDF
- BCF is a better choice than BDF.
- BCF is my choice
- BCF is overall less risky and has a higher guaranteed amount, as well as a higher maximum amount, making it overall more appealing than BDE.
- BDE has a 75% chance of getting more than $45,000 per year for retirement whereas BCE has only a 50% change of getting $75,000
- BDE has a higher average payout than BCE
- BDF offers greater expected value even though there is some chance involved.
- BDF results in higher EV
- Because I have a 50/50 chance of earning more through choice BCE
- Because I have a 50/50 chance of getting the $141,000 and if for some reason I don't get it, the difference between the least amount I can get and the middle number is not that much.
- Because I have a 75% chance of getting at least $54,000.
- Because I have a chance of losing only 10,000 or gaining at least 35,000 more that option A
- Because I like the odds better.
- Because I realized it
- Because I realized it
- Because I saw that there was greater than a 50% chance of getting less than $150,00 on the other option.
- Because I would be happy with 141,000, so I would take the risk of getting up to 225,00 instead of staying with 150,000 instead.
- Because I'd rather have the shot at 225k as long as I had a minimum of 80k
- Because I'm choosing between a certainty of $100,000 or a 50% chance that I get the choice between 225000 and 141000/year. The worse possible outcome is 94,000/year. Not too bad.
- Because at age 35, I would rather give myself the flexibility of making decisions on retirement earnings closer to the age of retirement rather than being tied down to just $100k a year. My needs and plans may change as I approach retirement so this is a matter of keeping options open
- Because both cases, the least amount I could have is 88,00 and both have a 25% chance of that. But ACE has the possibility of 225,00 and ADE has only a max of 150,00. If I am between

141,00 and 150,00 I wouldn't really care and I would rather have the possibility of getting 225,000 then

- Because if I am choosing between C or D, I will have a lot of money either way, so I don't mind risking it to get a lot more. But between E and F, there is a possibility I end up with only 88,000. I'd rather know I have 94,00 thank risk it for that extra money.
- Because if it is between C or D, all options are a lot of money. I would be happy with 141,00, so I might as well risk it and see if I get even more (225,00). With E and F, I would rather be conservative because I would rather be set with 94,000 than have the possibility of 88,000.
- Because the amount of 129000 causes for a much greater net gain based on probability.
- Because the maximum amount of money I could possibly have increase, and also because the minimum amount of money I could possibly have also increase. The middle 135000 is still 25%, unchanged.
- Because the possible lower amount is only 7000 in BCF and the possible higher amount goes up to 112,500 as opposed to only 75,000 in BDE.
- Because the values are pretty much around the same in both except there is slight chance of getting even more money in BCF so it makes sense to take the chance
- Because there is a large chance I will get 150,000 (50%) while there is a 50% chance I get 141,00 in choice ACE. I would like the larger chance of getting 150,000 rather than 141,000
- Because there is a lower chance of getting below 100,000
- Being able to have a 50% chance of getting 150,000 over a 25 % chance of getting 108,000 or 225,000 is more appealing to me. I believe 150,000 would be enough for me to retire with.
- Best chance at 54K or higher.
- Best option.
- Better chance for better options.
- Better chance of a solid amount of money
- Better chance of making more money
- Better chance of making more money
- Better chances at better options.
- Better option as 54K is sufficient.
- Better to take the chance on the higher numbers. Play it safe when it starts to get too low
- Both ADE scenarios are the same. There is a 50% chance of getting 75,000/yr for both and 25% chance of getting either 54,000/yr or 26,000/yr. The odds of getting 75,000 is the worth the risk to increase from 50,000 to 75,000 a year.
- Both choices in F are sufficient so I will take my chance at getting 225,000. Even if I only get 135,000 that is still better than 81,000, than 90,000 and 100,000.
- Both have the same minimum payment, and while option BDE provides a %50 chance of $150,000, I would be fine with the %50 option of $129,000 of BDF (not to mention the chance of getting the significantly larger option of $225,000)
- Both outcomes had a possibility of having $52,000/year so I my next choice was between which one could leave me with more money.
- CHANCE OF GETTING HIGHER SUM
- Can't complain about guaranteed $100k
- Chance of 26K would be too high.
- Chance of 54K or higher outweighs chance of 26K
- Chance of 75K is worth the risk as 36K would be sufficient.

- Chance of a higher gain
- Chance to get more money
- Chances are higher to earn higher income.
- Conservative option is good, and if not the other options arent that bad
- Conservative options really open up the different pathways you can go.
- Consistency, BCE is a better option considering risk.
- Decreased risk, and guaranteed that amount
- Did not realize probabilities were the same. 0.5*0.5=0.25
- Don't need to worry about getting only 64,000
- Don't wanna receive 64,000
- Don't want the .25 chance of 64k
- Either way both amounts are a substantial amount of money. With a probability of getting more than $150,000, I chose to change my answer.
- Even if I end up with 90,000, it is more than if I were unlucky and ended up with 81,000
- Even though a little riskier, I feel more drawn to the reward.
- Greater chance of ending up with more than 40.5k per year
- Greater expected value.
- Greater expected value.
- Greater expected value.
- Greater expected value/aligns with my risk tolerance.
- Guaranteed decent earnings
- Guaranteed minimum of BCF is close enough to the conservative value of A that I would be ok with getting BCF's minimum value (I would not regret getting $86,000 knowing that I could have had a guaranteed $100,000). Additionally, there is a chance to get significantly higher than A's conservative value.
- Having a 50% chance of getting 135k is better.
- High enough chance of making >100,000 to outweigh other option
- High enough chance of making >100,000 to outweigh other option
- High enough chance of making >100,000 to outweigh other option
- High enough chance of making >100,000 to outweigh other option
- High enough chance of making >100,000 to outweigh other option
- High enough chance of making >100,000 to outweigh other option
- High enough chance of making >100,000 to outweigh other option
- Higher chance for more than 36,000/yr.
- Higher chance of getting more money for the risk of possibly only getting $20,000 less than the worst option for the other choice
- Higher chance of having a larger yearly spending amount
- Higher chance of receving >100,000
- Higher expected payoffs and the loss to $80k is not too much for me.
- Higher expected payoffs! What was I thinking!
- Higher expected value
- Higher expected value
- Higher expected value
- Higher expected value
- I WOULD RATHER BE GUARANTEED THE AMOUNT

- I always want to keep the possibility of 225 even over better odds of 150
- I am feeling risky
- I am fine to settle for 100000/yr
- I am more likely to get 150,000/year in this situation.
- I am not sure why I chose differently for each of those situations. It makes more sense to have a 75% chance of having more than $70,500 per year than a 50% chance as in BCE.
- I am willing to risk a 50% chance of getting $52,000 once I got to choice E, because most likely I would get either the $150,000 or $108,000
- I am willing to risk getting $108,000 instead of $150,000 if it means I have a 50% chance of getting $225,000
- I am willing to risk getting $52,000 for a chance of getting $225,000
- I chanced my choice? I chose B with the goal of making more than $50,000. I believed odds were favorable for me to make more than the conservative $50,000. If I had to choose between C and D I would choose D in order to make more than 50,000. If I had to choose between E and F I would pick the conservative E because I have already met my goal of exceeding $50,000
- I changed my choice because ACF's minimum amount is greater than that of ADE, and it's maximum amount is also greater
- I changed my choice because I would rather have a 50% guarantee at $75000
- I changed my choice because both options have the same minimum amount, but ACE has a greater maximum
- I changed my choice because the odds are the same in both scenarios and I'd rather a greater chance of getting a guaranteed larger amount
- I changed my response because the investment planned looked different in these two questions. Ultimately, I think because the chance to get over 75000 is 50%, I would go with ADE.
- I choose E because there is a 50% chance to get above 50,000 and the difference between 44,000/yr and 47,000/yr is minute.
- I decided losing ten thousand dollars is worth the prospect of gaining fifteen thousand dollars.
- I decided to go with the higher probability of a mid-range income. At first, the option of $112,500 was appealing, but over time I decided that a 1/4 chance was too low to make the risky decision.
- I did not read it right the first time. I feel that in choice ACF, the lowest amount of money I could possibly get is $96k and the highest amount is $225k. Even though there's a 50% chance of getting $96k, there is a 50% chance of getting $144k or more. Even though there is a 75% chance of getting $144k or more in ADE, the largest sum of money possible to obtain in ADE is $150k. The chance of getting $225k is worth the 50% chance of getting $96k.
- I did not want to risk ending up with $72,000/year when I could have a guaranteed $100,000/year.
- I do not like this choice. Honestly I would need more time to think on it. When faced with a conservative and a 50/50 choice, it is very difficult for me to decide.
- I do not like this choice. Honestly I would need more time to think on it. When faced with a conservative and a 50/50 choice, it is very difficult for me to decide.
- I do not want the option to have 81 a year.
- I don't know why I made this decision.
- I don't really want $64k at all costs. 80k is enough
- I don't think that risking the loss of $4,000 should outweigh the possible gain of $48,000
- I don't want a 64,000

- I don't want to have to possibility of only getting 52,000/year.
- I don't want to risk 64k
- I don't want to risk 64k
- I don't want to risk getting $52,000.
- I dont want to risk lkkosing 150k
- I feel like 100,000 is a decent amount so I don't want to risk getting 64,000
- I felt like the probability was fair and that the numbers involved were not that bad
- I had been confused at some point by the large amount of choices.
- I have 2 chances to make more money than I do in option B
- I have 2 options. The other picture was the same option with now chance id make more money. In this option I have the chance to make 112,000
- I have a 75% chance of getting $120,000 or more.
- I have a higher chance of getting 150k
- I have more to lose by choosing choice BDF
- I have the chance to gain more in BCF with the same amount of chance to lose in BCE
- I like 100000/yr
- I like cake
- I like risks
- I like the idea of having a chance to make 6 figures.
- I like the probability of higher expected payoffs
- I like this choice better.
- I like to risk for a larger amount of money
- I liked this choice because even though there is a risk factor involved, I feel like I would gain more than the second choice
- I look at it as 50% chane of 90,000 or 50% chance of more than that. Versus a chance that include 81,000 a year. Which is less than 90,000. Which is better.
- I must have clicked on the wrong one
- I realize that the percentage for this choice is the same, and that the only difference it that 50% chance goes to
- I realize that the percentage for this choice is the same, and that the only difference it that 50% chance goes to
- I realized it was most likely that I would still get over $100,000 with a chance of getting more
- I realized that ACE gives me more of a chance to get 144K or greater. In ACF I only have a 50% chance to achieve this but in ACE there is a 75% chance.
- I realized that although BCE offers a higher chance of a higher return, 50% of $135,000/year in BDF isn't too far off, and there's also a 25% chance of getting $225,000. It all depends on how much you're willing to risk for a greater return. BCE is more conservative, BDF is riskier.
- I realized that it might be better to be conservative and gurantee that I have over $70,000
- I realized that it wasn't worth losing eight thousand dollars to gain twenty thousand. I would rather be safe than sorry.
- I realized that the risk was not worth the reward. The juxtaposition of a greater chance of reward (second option) sort of blinded me a bit.
- I realized that these are both the same odds, and I would rather have a 50% shot at guaranteed $75,000 than $43,000.

- I realized that this gives me the greatest chance to get 150K which if choosing the other model, i would only have a chance to get greater than 150K 25% of the time
- I realized the chances are all still the same as the simpler graph.
- I realized the two situations were the same and that my answer should be the same as well. I felt that having a possible negative utility of 9,000 wasn't enough of a risk to deter me from a potential 75,000 utility gain(comparing to conservative option with 100% chance)
- I realized there is a higher chance of earning over $90,000 in BDE
- I really don't want to end up with 64,000
- I really like the idea of potentially gaining over one hundred thousand dollars. The chance of a loss is smaller than the chance of a gainso I'm willing to take the chance.
- I think it's better to exclude the chances of only having 81,000 a year for retirement.
- I thought that this was a correct choice but it has a less confusing visual diagram/ explanation
- I want a chance to get 120k instead of 80k
- I want a chance to get 225 k
- I want the opportunity to make 6 figures.
- I wanted a chance to be conservative because I am entering the age of 65.
- I wanted the chance of getting $225,000 and I was willing to take the risk of having a 50% chance of getting $72,000
- I wanted this choice because the lowest value I could get from the risk of choice "c," is only $3000 less than the conservative choice. The loss does not seem too severe.
- I wanted to change my choices because the scenarios are the same and I would like the guaranteed amount
- I wanted to take the risk of earning more than $50000
- I was willing to risk getting $72,000 for the chance of getting $225,000
- I would be fine to settle for 135000/yr
- I would be happy with 141,00, so if I am happy with that I would also be happy with 225,00 so I would take the risk.
- I would be more willing to make a risk like the following
- I would like to not risk 64k and I cna get 225k
- I would like to take on more certain amount of risk to achieve higher income.
- I would not want the possibility of having 44k.
- I would rather be guaranteed $100,000 per year than have a 50% chance of either $108,000 or $52,000
- I would rather be safe with the 94,00 than have the possiblity of getting only 88,000
- I would rather guarantee getting $150,000 a year instead of risking a 50% chance of getting $108,000
- I would rather have $100,000 guaranteed.
- I would rather have F because I am guaranteed 94,000 instead of possiblity having 88,000
- I would rather have F because I am guaranteed 94,000 instead of possiblity having 88,000
- I would rather have F because I am guaranteed 94,000 instead of possiblity having 88,000
- I would rather have a 50% chance of getting $75,000 than a 50% chance of getting $43,000
- I would rather have a 50% possibility of getting $150,000 than $120,000.
- I would rather have a greater chance of having 90K than even have the option of having 81.
- I would rather have the guarantee of $100,000 because in the other option, it is most likely that I will get $108,000 which isn't that much more

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- I would rather hvae 94,000 guaranteed over the possibility of getting 88,000
- I would rather know I would get $100,000 than have a 50% chance of ending up with either $108,000 or $52,000
- I would rather take a risk and potentially earn more
- I would rather take a risk and potentially earn more
- I would rather take a risk and potentially earn more
- I would rather take a risk and potentially earn more
- I would rather take the risk and have a chance of earning more because the minimum amounts in each scenario aren't too drastically different
- I would want the chance at $112,500
- I wouldn't mind risking 64k since it's only 25%
- I wouldn't mind risking 64k since it's only 25%
- I'd rather definitely have $20,000 more than the worst possibility in ADF; $100,000 is good enough.
- I'd rather take a shot at getting 135000
- I'll take a gamble for the chance at receiving 135 or 150 thousand.
- I'll take the guaranteed 100000 per year. that's a good standard of living.
- I'm afraid of getting 64,000 because it's so low.
- I'm not really sure, It just makes sense.
- I'm really not sure.
- IT IS MORE LIKELY THAT I WILL GET HIGHER THAN THE LOWEST AMOUNT ON THE OTHER CHOICE
- If I am going to make more than the initial alternative ($50,000), I will likely settle for it.
- If the percentage is the same, I may as well only choose once
- If you get unlucky, better to get $72,000 than have a chance of getting $52,000
- Ignoring how the diagrams present the material, the questions are the same and therefore answers should be the same.
- In ACF, I have a 50 percent chance of gaining more than the conservative amount, and I have a quarter chance of having the highest amount per year.
- In both cases, I can get 150,000 at most. So I don't want to risk for ADE in which I may get only 64,000
- In both options you can lose the same amount but in BCF you have the chance to gain more
- In both situations, there is a 25% chance I will end up with 44k per year. I might as well take the extra risk and have the possibility of securing over 100k.
- In either scenario you choose between a minimum of 94,000 per year or a chance of a higher outcome. The chance of a 225000 per year payout in ACF is attractive to me in this case.
- In this case, there is a 50 chance I end up with 86,000 in ACF. In ACE, the risk is split up, and there is only a small chance I end up with less than 86,000 per year.
- In this case, you have a chance to gain 150,000 while in B you would only have 100,000
- Instead of having 150,000 or 860,000 there is a chance to have a middle amount in ADE
- It is worth taking the risk to earn more
- It basically was the same as the other one
- It does well in the long term.
- It feels safer
- It has a higher predicted value.

- It is a relatively safer option with less risk.
- It is because I have a higher likelihood of earning higher than $100,000.
- It is guaranteed 100k.
- It is more probable to get more money out of the 74000 and 129000 split.
- It is the safer option with less thinking involved.
- It is too early to lock in $100,000 at the age of 35.
- It is worth taking the risk to earn more
- It is worth to take the risk to earn the 225,000
- It just seemed to be a better option (meaning, I think I would end up with more money)
- It looks more profitable
- It seems like a better option. I think I was thrown off by all of the different steps at first.
- It was difficult to calculate percentages..which is what I am finding out. HOwever, clearly ACE offers a higher chance of getting 70/yr (50%) and even a chance to get 112/yr.
- It's better to be guaranteed $50,000 than have a 50% chance of getting less
- It's better to have a 50% chance at $75,000, than to have a 25% chance at having less
- It's more financially responsible.
- It's more likely that I will be atleast semi-satisfied with this choice
- It's not as far off from the middle number
- It's safer - 64,500 is not large enough of a gain to risk
- Knowing that I could have a guaranteed $100,000 is more appealing to me than possible getting a significantly lower payment of $74,000 even if there are good chances of getting higher than $100,000. I know that if I picked BDE and ended up getting the $74,000, I would be regretting the guaranteed $100,000.
- Less chance of earning a low value
- Less chance of earning a low value
- Less chance of earning a low value
- Less chance of making <100,000 a year.
- Less chance of receiving a low amount
- Less opportunity to get a low amount
- Less risk.
- MINIMIZE THE CHANCE OF GETTING 64,000
- MORE MONEY $$
- Makes sense to take some risk at age of 35
- More choices
- More risk more reward
- More risk more reward
- More risk more reward
- My arbitrary minimum acceptable income changed over the course of the survey. At a certain point you must decide what a minimum livable income is and not let yourself get stuck with less than that. At a higher potential income, it still depends on your willingness to take risks
- My chances of gaining more than 100,000 are higher with this option
- My opinions on these choices changed as the study progressed.
- Not consistent with other answer that has the same amount of risk. Do not want to risk getting 88K retirement.
- Not willing to take a chance with the previous option.

- Not willing to take the chance.
- Odds of higher yearly budget is higher
- Once again the $4,000 is not much of a difference compared to the potential increase
- Once the probability has been consolidated, it's easier to make a clearer decision
- Only a small chance of 26K, as opposed to the higher choices.
- Optimizes chance of higher earning
- Payoff.
- Possibility and reward of gaining money was far more likely than losing money
- Possibility of losing less money
- RATHER STAY CONSERVATIVE IN THIS SITUATION
- Realized ACE is a bit too risky; ACF seemed safer.
- Realized that ACE better represented my preferences
- Realized that ACE better suited my preferences
- Realized that ADE represented my preferences more accurately
- Removal of chance of 81,000 per year. There is a chance I will be unlucky and then wish I had the extra 9,000.
- S
- Safer bet
- Safer bet with lowest amount 80000
- Same minimum payment value, but higher potential yield.
- Same question, should have same response, I chose variable payoffs because utility looked higher.
- Same reason as last question
- Same situation, hence same response, chose better payoffs in terms of utility.
- Similar to before, I realized both situations were the same and thus should have the same answer. Option C has a higher utility gain chance than option D
- Simplified down both scenarios are the same, hence I chose scenario with better chance of earning greater than 94k, which in this case ADE had 75% chance while ADF had 50% chance.
- THE RISK OF LOSING 20,000 TO GAIN 20,000 IS NOT WORTH IT
- THE RISK OF LOSING 20,000 WITH THE CHANCE OF GAINING 50,000 IS DESIRABLE
- THERE'S A HIGHER CHANCE OF GETTING MORE THAN 88,000 IN THIS CHOICE
- THERE'S THE SAME PROBABILITY OF GETTING THE LOW AMOUNT, SO MIGHT AS WELL GAMBLE TO POSSIBLY GET HIGHER
- Take the average of 81,000 and 135,000 and get 108,000. Take the average of 135,000 and 225,000 and get 180,000. Take the average of 108,000 and 180,000 and get 144,000. That is the estimated value in BDF. The estimated value of BCE is 120,000. BDF is higher.
- That was the easier option.
- The 50% chance of 150 outweighs the possibility of a 10k loss
- The 50% chance of 150k seems better to me
- The 9k drop seems substantial at this point. Would rather play it safe. 100k seems to be base. I want to stay closer to that
- The average payout of BDF is higher than that of BDE
- The benefits of getting $64,500 are worth the risk of getting $6,000 less
- The chance at 115,000 trumps the conservative figure.

- The chance of getting $52,000/year is the same but there is also a chance of getting $225,000/year in BDF.
- The chance of getting more than 100000 is higher in BDF
- The chance of having #37,500 more is worth the risk of having $11,000 less
- The chance of having $21,500 more is worth the risk of having $6,000 less
- The chance of not gettiing 81,000 is 75%, and in this choice that includes a larger sum than in the other (225,000) So I rather take the bet that might come out with a higher win.
- The chances are equal, it makes more sense this way
- The conservative amounts are in the middle of the 50/50 options
- The conservative choice is obviously less risky, and seems less risky when compared to a 50/50 choice. 50/50 choices are the most unsettling (compared to options with more branches).
- The conservative feels safer.
- The conservative options do you more good than others.
- The estimated value of BDF is (81000+225000+270000)/4=576000/4 while the estimated value of BCF is (180000+135000+225000)/4=540000/4. BDF has a higher estimated value.
- The fifty percent chance of 75K
- The gain, again, is greater than the loss.
- The minimum payment is higher in BCE, and BDE has no option greater than BCE's highest option, so there is no reason to take the unnecessary risk of getting $74,000 when $86,000 can be guaranteed.
- The outcome either way is acceptable to me.
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The payoffs are higher
- The percentages end up being the same (I prefer ACF to ADF but the computer wouldn't let me change just one choice instead of both).
- The percentages end up being the same (I prefer ACF to ADF but the computer wouldn't let me change just one choice instead of both).
- The possibility of losing money wasn't as great
- The potential gain of the 50/50 chance offsets the loss of the lower value compared to the conservative value.
- The probability of $64k a year initially deterred me but I think the chance of $225k and $120k makes it worth it.
- The risk for the lowest payout is the same for both options. However, BCF gives you a chance to make more money.
- The risk for the lowest payout is the same for both options. However, BCF gives you a chance to make more money.
- The risk is taken out of the situation, and you are guaranteed a certain amount of money.
- The risk vs reward feels different and better in this situation.
- The riskiness is worth earning a higher amount of money especially in the high price range.
- There are only good opportunities if I choose F.
- There is a 50% chance of me increasing my yearly budget by 50% versus the 50% chance that I only lost 5k per year

- There is a 50% chance that I will get $120,000 or greater
- There is a 50% chance that I will get $120,000 or greater
- There is a 50% chance that I will get $120,000 or greater
- There is a 50% chance that I will get $120,000 or greater
- There is a 50% possibility that I will get greater than $80,000. This is a risk I am willing to take.
- There is a 75 percent chance to have higher money than the 100,000
- There is a 75% chance of having something more than 81,000 and I am willing to take that bet.
- There is a 75% chance that I will get $120,000 or greater
- There is a better chance of making more than 54,000 in choice ADF.
- There is a chance at 225,000
- There is a chance at 225,000 per year
- There is a chance in ACF to have 225,000 per year
- There is a chance of getting more money
- There is a chance of getting more money with ACE
- There is a chance of getting more money. Expected value is higher
- There is a chance to gain the highest amount, but also a guarantee to not have the lowest amount.
- There is a chance to get high amounts of money.
- There is a chance to get more money
- There is a good chance of making more money with BDF
- There is a good chance that the payoff with ADE is better than the guaranteed 50K with B.
- There is a greater chance of making more than 36,000 in ADE.
- There is a higher chance of getting more than 36,000
- There is a higher chance of getting more than 36,000
- There is a higher guarantee of getting a moderate (150000) amount of money.
- There is a less chance of getting 43k or below for BDE.
- There is a possibility for more money in this situation.
- There is a very high chance that you will have an amount greater than the guaranteed 100,000 in B, and there is not a lot of risk in picking ACE.
- There is an equal chance of getting greater than 36,000 in both scenarios, but it is possible to earn more in scenario ACF.
- There is chance of getting more money in the other one the values are opretty much the same without chance of getting more money
- There is high chance of gaining ten thousand more dollars, less of a chance of losing eighteen thousand, and a chance equal to that of gaining sixty-two thousand and so I would like to take the risk.
- There is less risk
- There is less risk in this scenario, and the conservative amount is already pretty high
- There is only a 25% chance of getting less than the conservative value, meaning that there is also a 75% chance of getting a payment larger than the conservative value, one of which is significantly larger.
- There was greater than a 50% of getting less than $150,000 with the other option.
- There's 50% chance of getting 120,000 and a 25% of getting 225,000
- There's 75% chance of getting more than 100,000
- There's a 25% OF GETTING 64,000
- There's a 50% chance of getting the 129000.

- There's a higher chance of getting above 120,000
- There's a slightly bigger chance to get more money
- There's bigger chance to get 120,000
- There's only a 25% chance that BDE will pay less than A
- These two actually tie for me. Given that I deem $80,000 minimum for good living, I don't know if I'd rather go for the possible $150,000 given that minimum, or go for a definite $100,000. I might as well have chosen ADF; perhaps I'd be more sure after more deliberation.
- They are the same situation.
- They are the same.
- They ended up being the same percentages.
- This gave me the high likelihood of l;arge amounts of money.
- This gives a chance of achieving 225K while also having the same chance of achieving 144K as you could 150K if you chose the other option. The difference between 144 and 150 isn't much in my opinion, so I would choose the risky option for the hopes of getting 225K.
- This gives a chance of getting 225K and the same chance of getting 144K as you would get 150K in ADE. The negligible difference between 144 and 150 allows me to be more risky while trying to achieve the 225.
- This gives the highest chance of
- This gives the highest chance of
- This is a less risky plan. In my mind, I have $100,000 as a desirable base value. The fact that BDF might yield a significantly lower value ($74,000) is deterring to me, so I chose option BCE.
- This is a more logical choice after evaluating
- This is a more secure bet and $64k a year is in my opinion too low an amount I would want at retirement
- This is a simple answer.
- This is because the chance to get over 70 is over 75%, compared to ACF which is only 50%
- This makes more sense.
- This one seems like it would lead to the most money. I'm afraid of being stuck with 64,000
- This plan is less risky than BDE. In my mind, I have $100,000 as a desirable base value. BCE has a 50% chance of $68,000, which is close enough to the base value that i still find it desirable. The fact that there exists in BDE a 25% chance of getting significantly lower than my desirable base value ($74,000) is reason alone not to choose it.
- This presents me with a less chance of getting a low amount
- This seems like the better choice
- This time, I just choose to be safe than sorry. So I'll just take the 100,000.
- This way I have %75 over $144,000, but with 25% at $225,000.
- This way I have 75% probability of having over $144,000.
- This way I have a 75% change of having over $144,000 in retirement.
- Turns out I'm willing to risk the 50% rusk in C because the potential reward is greater than the potential loss.
- Using $100,000 as a desirable base value, BDE is more appealing. In BDE, there is only a 25% chance of getting something less than my desirable base value, and 75% chance of getting a larger amount of money. This is more appealing to me than a 50% chance of less that the desirable base value, even though there is a 25% chance of getting a significantly larger payment ($225,000).

- Using $100,000 as a desirable base value, I compared the two options. BCE will likely yield more than $100,000, but if it doesn't, it will yield $86,000, which is close enough to $100,000 that I would still be satisfied.
- Wanted more security and not to be down to potentially $40,000 a year
- Willing to risk getting $108,000 for the chance of getting $150,000
- With BCE, you're most likely going to get more. In BDF, there's only a 25% chance of getting more money
- With BCF, there's a 50% chance of getting mroe than A
- With BDF, there was a good chance that I would have made less than I would have if I chose BCE
- Won't receive lowest value
- You are guaranteed to have 100,000 dollars per year, and there is no risk.
- You can gain higher amounts of money
- You can get 225k.
- You can get more money
- You have a 50% chance of at least 94000 per year with a 50% chance of 225000/year. More attractive option.
- You have a greater chance of getting more than 880000per year than you
- You have a greater chance of getting more than 880000per year than you
- You have agreat chance of getting 144,000 and a good chance of getting 225,00, and a small chance of getting the little amount
- You're more likely to get less if you pick BDE
- anything 60 and higher is fine for me so why not have the chance of 112.5
- at age 50, i cant afford to risk, so ill take my 150k
- at that age, i can afford to risk
- average is higher than 150000
- avoid 64
- avoid 64
- avoid 64
- avoid 64
- avoiding 64
- because
- because
- because ACE has only a 25% chance of getting 64,000
- because I liked the secui
- because I liked the secui
- because again the $4,000 is not that much of a difference compared to the potential gains
- because although 112,500 is appealing, BCF has more chance of getting lower than 50,000
- because i have a 50 percent chance of earning more than 100,000
- because in the new one i can potentially earn higher at a better possibility. In the old one I have the more probablitiy of lower.
- because it offered more risk but you would be rewarded far more with the 225
- because the $4,000 difference is not that much of a difference compared to the $50,000 increase I could get
- because the $6,000 decrease from 150 to 144 is not as significant as it would be to increase to 225

- because the $6,000 is far smaller than the potential gains of getting $225,000
- because they are the same thing and this one are you more likely to end up with a safer amount of money
- better
- better
- better
- better
- better
- better chance at winning more money
- better chance of getting a good amount of money
- better chance of getting more money
- better chance of making more money
- better probability
- big payoff small loss
- both have 50% chance of 150000 a
- both have 50% chance of 150000 a
- both have 50% chance of 150000 and then the expected value of ADE is greater
- both options are less risky than possibly getting 81,000
- can end up with more money
- chance of more gain
- chose F because I would be happy with the 60000 or the 112500
- comparing the 2 choices, I have a higher probability of earning more through choice BDF
- conserveeee
- different when you consider all the available choices/outcomes
- don't want to end up with just 32000
- dont want less than 40
- dont want less than 40
- earning $75,000 over $67,000 is a marginal gain but earning $112,500 is a massive gain!
- either of ADF's conservative options looks good to me.
- feelin risky
- gave up on feeling risky
- good chance of higher income with low minimum outcome still
- good chance of making 75,000
- good chance of making more than 36,000
- good chance of making more than 36,000
- greater odds of having a good amount of money (75k) versus the other choice where I have greater odds of ending up with less than 75k
- guaranteed amount
- guaranteed amount
- guaranteed amount of 36,000
- guaranteed amount of 36,000
- guaranteed amounts of 75,000
- guaranteed amounts of either 75,000 or 35,000
- happy with either amount
- have the chance to earn the 225,000

- having a safe $4000 more is more important than the extra 25% chance of landing on 144,000/year
- higher average payoff
- higher chance (50%) of winding up with more money in ADE than in ACE (50% of 67.5k)
- higher chance id make more money
- higher chance of >100,000 reward, with 25% of 225,000 payoff
- higher chance of winning more money
- higher chance of winnow >100,000
- higher expected return
- higher expected return
- higher expected return
- higher expected value
- higher expected value
- higher expected value
- higher expected value
- higher expected value in ACF
- higher expected value on the long run
- higher probability of getting an stable income to live on
- higher reward
- i DONT FEEL BAD LOSING 5,000 IF I GET 70,000 INSTEAD OF 75 IF I HAVE THE OPTION TO GET 112,000
- i dont want to go down to 32
- i have a 50% chance of getting more than i would in B, and even in the other 50% i have another 50% chance of making more than B so..my chances of making more than 50,000 are more frequent
- i have less chance of loss from 50000
- i have the potential to get a substantial amount of money more with BCF and that is a risk I am willing to take even though it is a smaller % chance I will get it. The worst I can do is get 90,000
- i like the conservative here
- i realized after second thought, that it was actually more likely for me to earn $75,000 than $112,500, so i changed my answer when i was sh9ow the different chart
- i realized i wanted to be on the safe side and i was actually less likely to earn $112,000 than i thought, but equally likely to earn $45,000
- i realized i was less likely to earn $40,500 than i had thought. and because it was only a $5,000 between $40,000 and $45,000, i decided to be a bit more risky
- i realized that it actually makes more sense to change my answer because i was more likely to earn more by choosing bcf after taking a second look at my choices
- i think that the risk would be worth it
- i understand the percentages now. I would be 50% more likely to have the highest amount when i changed it. the graphs were different, so I didn't fully understand what i was choosing before and what the percentages were
- i wanna get 75 50% chance
- i want risk!
- i was indecisive
- i would rather have a chance for a huge bonus 112.5 then just probably get 75

- i would take the small risk of 32000 in order to probably make 60 or higher
- i wouldnt want to make less than 40
- i'd rather have a chance of 50% at 150,000/year over a guaranteed 100000, espeically if 94000 is not that much lower than the guaranteed 100000
- i'd rather take risk for more money
- id have a better shot at earning $75,000 than anything lower or higher than that amount after seeing both charts
- id rather have the chance of earning more, especially, when $40,000 is only $5000 less than $4500. the other chart made this more clear to me rather than the entire tree
- idk
- idk
- if i already got the worse option id want to be conservative
- in this case it seems like the better choice to just go with the conservative option and not run the risk of getting 81,000
- it is slightly more conservative, i would not like to only get 32000
- it is worth it to take the risk to earn 225,000
- it seems to be more stable and reliable
- less chance of getting less than 50,000/yr
- less risk
- less risk bigger reward
- less risk, bigger reward
- like the guaranteed 100
- looks better
- lower risk appetite at age 50
- makes more sense
- maybe ill get lucky and its
- maybe ill get lucky and its
- more $$$$$$$
- more capital
- more capital
- more capital
- more chance to win money
- more conservative
- more likely to get $75000 than $67500
- more money to win
- more reliable
- more secure
- more stab le
- more stable
- not much risk with a b50% chance of pretty good outcome.
- only 25% chance to get 52000, which is not so possible
- payoff greater
- possibility to gain far more money
- rather stay conservative
- realized the probability was better

- same as before
- same chance of winning >100,000, but with higher payoff in ACE
- stable income
- stable income
- still have the chance of 64k, but also chance of 150k+
- the chances of me getting the higher amounts is smaller and i would rather play is safe and get the 100,000 instead
- the expected return of BCF is slightly higher than that of BDE
- the incentive for the 225000 outweighted the 25% chance of the 81000
- the loss of 5,000 a year is not small enough to risk not getting
- the lowest payment was higher than the other option so it was a better choice
- the other option is too risky
- the other part was grayed out so i would have had no chance for e or f, but in this one i do. it seemed like more of chance to earn a higher amount than the other choices
- the outcome probability of 225000 and 144000 is the same in each option, leaving the choice to choose 96000 over 92000
- the probability of getting more money is better
- the risk of the 5,000 is not one i want to take
- there are 50% to get only 72000, which is not enough
- there is 75% chance of earning more than $92000 in this case whereas in BCF there is only 50% chance of earning more than $96000
- there is a 50% chance of getting 75,000 in ADE whereas there is only a 50% chance of getting 54,000 in ACE and only 25% of getting 112,500.
- there is a 75% chance of making more than 50,000
- there is a 75% of making more than 50,000/yr in option ACE
- there is a good chance you can make more than 50,000 by choosing ACE
- there is a guarantee of receiving 75,000
- there's a 50 percent chance of earning significantly higher than the conservative choice
- there's a higher chance of receiving more money than either conservative choice
- there's a very high likelihood (75%) that you would make more
- they were both the same question -- it didn't really matter which one i chose but i guess the answer i chose just more clearly stated that 135000 was 50% chance rather than 25% plus 25%
- this gives me an opportunity to get 225K and the difference between 144K in this choice vs the 150K in the other choice is negligible.
- this is a better choice of getting more money
- this is because the probabilities and monetary benefits of ACE are better
- this is the same question as before, i prefer this risk/reward structure
- to take the risk of earning 225,000
- when they are combined it is much easier to see the probabilities of each, but i essentially changed because there was only a 25% chance of getting the $92,000
- with option BCF I have more to gain and my loss is not too terrible
- you are guaranteed the 75,000
- you have better chance of winning more money
- you have more options as far as how much risk you might want to take
- youre only losing 10000 a year so i would take the risk

2.1.6 Responses from December 2013

- $32000 per year is too less to me
- 25% chance of getting less than 94,000 and $6,000 less is not life changing
- 25% chance of getting less than 94,000, 75% chance of getting more than 94,000
- 25% chance of getting much more, 25% chance or losing a relatively small amount
- 40,000 compared to 50,000 isnt a big difference in terms of a comfortable lifestyle so i want to take the chance at a higher income
- 50% CHANCE OF 150,000
- 50% CHANCE OF 75000 RATHER THAN 50% CHANCE OF 45000
- 50% CHANCE OF 75000 RATHER THAN 50% CHANCE OF 67500
- 50% chance at doing better then 50,000 with only a 5,000 risk
- 50% chance of getting 26000 is too great.
- 50% chance of getting 26000 is too high and not worth the risk.
- 50% chance with only a 5,000 risk
- 75% (strong) chance of getting over conservative amount.
- 75% chance at doing better then 50,000
- 75% chance of doing better
- 75% chance of doing better then 50,000
- 75% chance of getting 54000 or greater, so it's worth it to take this route than 100% chance of getting 50000.
- 75% chance of receiving +$50K
- 75% chance of receiving greater than 40,500
- 75% chance of receiving greater than 40,500
- 75% chance of receiving more than $50K.
- A 50% chance of 112,500 is large and worth the risk in this scenario. All values are high and can sustain a retired person, so it's worth the risk.
- ACE MAY HAVE MORE RISK, BUT IT ALSO HAS A HIGHER POTENTIAL PROFIT
- ACE gives me an equal chance of getting 112.5k through 44k per year, while ACF gives me a 50% chance of getting 47k/yr. I'd rather have a lower chance of getting 47k/yr (ACE ~25%) rather than higher (ACF ~50%)
- ACE has a greater likelihood of making much more money than ACF
- ACE has a stronger likelihood of making more money with the lowest value only being $4,000/year less
- ACF has a high minimum with a high maximum as well
- ACF has a higher absolute minimum and a higher maximum
- ACF is the right choice because there is a 50% chance of making 67,500 or more, which is worth the risk
- ADE Has a chance of $40,500. That's too low for me. An almost $10,000 pay cut per year is extreme.
- ADE has a much lower chance of making less than $100,000/year
- ADE has less chance of making less than $100,000/year
- AFC is clearly the better choice because you end up with more money.
- Again, I don't see a huge difference between $141,000 and $150,000 if it means I might have a chance at $225,000.

- Although the maximum for ADF is not as high, the minimum is higher and there is still a 50% chance I would make over $150,000. In ACE, the maximum is higher but the minimum is also lower. There is only a 25% chance I would make over $150,000.
- Around 85,000 was the threshold I chose as a risky amount of money to have to live from for a year. I tried to stay away from the values that involved 74,000.
- At age 35 I'd take the risk of a 25 percent chance of receiving 112,500/yr.
- BCF and BCE has the same probability of losing money except BCF has a greater earning potential because there is a 25% chance of getting 225,000.
- BCF has a high reward to risk ratio.
- BDE only has a 25 percent chance of getting <100000 per year. BDF has a 50 percent chance of getting <100000 per year.
- BDF has higher expected return
- Because I prefer
- Because I stand to gain a lot more than I stand to lose
- Because I stand to gain a lot more than I stand to lose (64,500 is a lot greater than 43,000, while 43,000 is not much higher than 37,000)
- Because I stand to gain a lot more than I stand to lose by taking a chance (112,500 is a lot more than 75,000 and 64,500 is a lot more than 43,000)
- Because I stand to gain more than I stand to lose in ACF
- Because I stand to gain more than I stand to lose in ADE. There is only a 25% chance I'd get a lower number than the smallest number in ADF, and both higher numbers in ADE are much higher than 43,000 (smallest number than in ADF)
- Because I wanted a chance at the 225K
- Because it has a higher base and a higher potential
- Because the 50% chance of making 129,000 is only 20,000 less than the 150,000 50% chance in BDE...that being said, I still have a 25% chance of making 225,000 in BDF which is 75,000 more than the highest amount in BDE so I would have 3-4 years between getting the 225,000 to lose that difference.
- Because there is a 25% chance of gaining 225,000/yr and even if there is a chance of 108,000, that's a comfortable amount to live on
- Because there is a 75% chance I'd get higher than what I'd most likely get in ACE (64,500 or 37,000)
- Because there is a 75% chance that I would get higher than $43,000 (the lower number in ADF) in ADE.
- Because there is a more likely chance I'd get a higher number in ACF
- Because this way I have a higher chance of getting $75,000 and in F there is a chance that I could get $70,000
- Better chance of a higher amount
- Better odds at more money.
- Better option less risk
- Better option less risk
- Better option; higher chance of more money.
- Better option; higher chance of more money.
- Better option; higher chance of more money.
- Better option; higher chance of more money.

- Better option; higher chance of more money.
- Better option; higher chance of more money.
- Better option; less risk
- Both options have the same chance of only making $92,000 but ACE has a chance of making much more than that
- Both scenarios have the same probabilities so it make sense to chose the same one both times
- C and E have a high maximum with a minimum only a few thousand dollars below the conservative values
- Choice ADE has a 50% chanve of 75,000
- Choice C guarantees above $50K payout with a 25% chance of +$100K
- Choosing ACF over ADE gives you better odds overall.
- Don't want to have a possibility of earning 64,000
- E HAS A GREATER EXPECTED PAYOUT DESPITE THE RISK
- Expected outcome is greater for ADF than B.
- Fair chance of getting above conservative amount.
- Given that both have a 50% of receiving $47,000, I'm willing to accept a 25% of receiving 70,500 and 25% of receiving $112,500 over a 50% of receiving $75,000 ($70,500 isn't that bad of a downside.
- Greater chance of receiving more than $50K, which is the benchmark I've been using.
- Higher low amount
- Higher percentage of more money
- I am more comfortable having a 50% chance of $150,000 and the fallback is $94,000. With the other option there is only a 25% chance I will make over $150,000 and the alternatives are not as good.
- I am willing to risk $9,000 for the possibility of $150,000. and the risk of only getting $88,000 remains the same.
- I believe there is more success with the first option than the latter one.
- I changed my choice because I realized this option was better in terms of payoff and chance.
- I changed my choice because there's a higher chance of getting more money.
- I chose BD
- I chose BD
- I chose BDF
- I could live on 72,000 comfortably but 52000 would be stretching it so I prefer the choice without the 52000.
- I don't want to take risk which my spending would be $32000 after 65.
- I felt that there was more chance of a better payoff in ADE
- I have 25 % of winning 225,000 which is more than I lose if I get 120,000
- I have a great chance of making $75K per year so I'll definitely go for it.
- I have a possibility of winning more than losing. 50,000 over 20,000
- I have a small chance of getting $40K $45K but I can also make up to $112K. I think it's worth the risk.
- I have less chance of making less money in the end. $45K > $40K
- I must've felt the risk was worth it, but it is actually safer to pick ADF keeping my goal in mind, since I want to stay away from the chance of getting 52

- I prefer taking the 25% chance of receiving $44,000 because it gives me a 25% of getting $70,500. $44,000 isn't that much worse than $47,000.
- I prefer the chance of getting 150,000 as that would make living vastly more comfortable.
- I realized I didn't want to make $88,000 under any circumstances.
- I realized that choice ACE has a 75% chance of getting 67,500 or more, which is worth the risk in this situation.
- I realized that in this case I would rather not take the risk of making less than 45,000 which there is a 25% risk of in plan ACE
- I realized that it gives me the same outcome as the other one. However, this one looked more visually appealing.
- I realized they are the same issues
- I really want to avoid the 52,0000
- I think the chance of getting 129k even with the possibility of getting 74k is more appealing
- I want to have more money to spend after I retired and I know there is risk on this investing.
- I want to have more money to spend after I retired and I know there is risk on this investing.
- I want to have more money to spend after I retired and I know there is risk on this investing.
- I want to have more money to spend after I retired and I know there is risk on this investing.
- I want to have more money to spend after I retired and I know there is risk on this investing.
- I wanted the E or F option since there was a higher amount of money I could get per year based on chance.
- I would not take the risk of a 25% chance of 40,500 a year.
- I would rather not take the chance of losing 9,500 a year.
- I would take the risk of a 25percent chance of receiving 112,500/yr.
- I would take the risk of gaining 112,500/yr
- I'd rather have a 50 percent chance of receiving 67,500/yr than a 50percent chance of receiving 45,000/yr.
- I'd take the risk
- Id rather not risk getting the 40,500.
- In ACF, I have a 50% chance of getting 47k/yr. In ADE, I have a 50% chance of getting 75k/yr. I'd rather stick with ADE as there's a higher chance of me getting more money.
- In both scenarios there is a 50% chance of receiving $47,000 - I'd prefer the 25% chance of receiving $112,500 over the 50% chance of receiving $75,000.
- In this case, I prefer having a 50% of getting $75,000 over a 50% of getting $47,000 even if it means losing the potential upside of $112,500.
- It is a bit more risky, but I don't see a huge difference between $141,000 and $150,000 if it means I might have a chance at $225,000.
- It is better to gamble with higher values, eliminating the chance of getting 64,000
- It is better to have a chance of winning 225,000 than nothing.
- It is better to have the chance of winning 108,000 or 225,000. 72,000 is not a horrible amount to live on.
- It is clear now that I have been answering these things incorrectly, I have been wanting to change my old answers now I understand
- It is the same scenario so the choices should be the same. I could live with 72,000/yr as a single person and there's a 50% chance of getting more.

- It makes more sense to go with plan ADE, as there is a 50% chance of getting 75,000 whereas in plan ACF t is not worth the risk as there is a 75% chance of making less than 75,000
- It seems worth it to take the risk. 75% chance the retirement fund will be 54000 or greater.
- It's worth the risk in this case, as 11,500 is a lot more than 75,000 whereas 67,500 is not that much less.
- Less risk
- Less risk
- Less risk
- Less risk involved
- Lowest amount of money would be greater
- MAKES MORE SENSE
- MAKES SENSE
- MIght as well take risk since there is 75% chance of 54000 or greater
- MIght as well take the risk because 50% chance of getting greater than 50000.
- Might as well try to get 112,500.
- Minimize risk for below $50K payout
- More conservative! Dont want to have a chance of 25% to earn 64,000
- More likely to get a higher amount
- More opportunity at higher income in the future for ACF
- My earlier choice of D was based on a large number of previous risky choices, at which point I thought that $75,000/yr would be enough, whereas $60,000/yr may require additional sacrifices; I could go with either answer, but would expect to make more on average with choice C
- Netter option less risk
- Not worth the risk.
- Only 25% chance of getting less than $100,000, and amount less is not extremely significant
- Same scenario so it makes sense to have the same decision. I really want to avoid the 52000
- Same scenario, so same choices. I could live on 72,000 and 150,000 would make my life vastly more comfortable.
- Securing 100,000 than having a possibility to earn 64,000.
- Securing 150,000 than losing 30,000 if I get 120,000.
- Since there is 50% chance of getting 36000, it is reasonable to take the risk of getting 112500 with a 25% chance. Both 54000 and 112500 are higher than 50000, so it is worth it.
- THE EXPECTED PAYOUT FOR E IS GREATER THAN F, AND THE AMOUNT THAT COULD BE MISSED OUT ON BY CHOOSING E AND GETTING 40,500 RATHER THAN THE GUARANTEED 45,000 IS NOT THAT DEVASTATING
- THE EXPECTED PAYOUT FOR OPTION C IS $90,000 WHICH IS GREATER THAN THE PAYOUT FOR OPTION D
- The
- The
- The $112,500 is enticing.
- The $225 K made me want to have the option of earning high in this choice
- The $75,000 conservative value is more appealing than having so many risky alternatives in the end.
- The 25% chance of 40,500 is not worth it.

- The 50% chance of 40,000 a year is is lower than the 50% chance of 60,000 in the other but the fact that there is less risk associated with ACF make me pic it over ACE.
- The 50% chance of exceeding $144K is appealing.
- The 50% chance of losing 5,000 is worth the 50% chance of gaining 12,500 or more.
- The chances of getting more money are greater in ADE than they are in ADf.
- The conservative way is what I usually lean towards in these choices, and that is what I probably meant in both situations.
- The less decisions you have to make, the better. Knowing that you have a set amount of retirement is peace of mind and you can better plan based on one number every year.
- The minimum and maximum values are higher in ACF.
- The minimum possible is the same in both, but the maximum possible is greater in ACE.
- The possible outcome of F (50%) is greater than the risk of C.
- The possible payout in BCF is greater than that of A and the probability of having a greater payout is 75%.
- The probabilities are the same as the other scenerio and there is still a higher chance that I get something higher than $70,000.
- The problems were essentially the same. A 50% chance of 75000 is better than a 25% chance of getting higher than that.
- The reason I was debating the answers was due to the chance of getting 64,000. In one instance I felt it is smarter to take a path without this, however, BDE has a higher expected value. If it was age 50 I most likely would have chosen BCE because at this age you are less likely to take risks regarding retirement because it is closer to you.
- The reward is worth losing 14% of the option A.
- The risk is worth losing the 50,000
- The risk is worth taking at the E or F level but is not worth taking at the C or D level
- The risk of losing money here isn't great. 72 isn't far off from 100 and I could live with that. Halving the money from 100 makes life a little more difficult.
- The riskier choice is worth it in these situations, as there is 75% chance of getting 67,500 or more which is the better option over the 50% chance of 45,000
- The scenarios are the same if you disregard the grey part and there is a higher chance of a greater payoff
- The two choices have the bottom line of 74k, but there is a higher chance of getting a higher number in the first choice than in the latter choice, even if the number is larger in the second.
- The two situations have identical options, it doesn't make sense to choose different things in the same question
- There is 25% of getting 225,000 which is more than i lose if i get 120,000.
- There is a 25% chance of making less than the conservative amount but a 75% chance of making more than that
- There is a 50% chance of getting 67,500
- There is a 50% chance of having less than $100,000 per year but the riskier option is still $86,000 per year.
- There is a 75% chance I'd be making more than $100,000 in ADE, whereas ACF only has a 50% chance.
- There is a 75% chance of having less than 150,000 in the ACF option while only a 50% chance of having less than $150,000.

- There is a 75% chance of making more than $40000/yr the risky way, which is worth it, but I may sometimes have chosen the conservative way because I was worried $32,000 might stretch my budget too thin
- There is a 75% chance of making over $100,000 in ADE as opposed to only a 50% chance in ADF.
- There is a better chance of a better outcome.
- There is a chance of winning 150,000 compare to securing 100,000.
- There is a chance to get 225,000/yr. I could live very comfortably on 108,000/yr. The risk of 52,000 is the same so I chose the one with a higher gain.
- There is a greater possibility of getting a steady number in the first choice than in the latter choice
- There is a higher chance of a better payoff
- There is a higher reward in F
- There is a small chance of making more money in ACE but there is a 75% chance of making less than $150,000/year which is greater than ADF
- There is a smaller chance of getting 52000 than of getting 72000. The chances were the same.
- There is a strong likelihood of making more money in ADE
- There is more to be gained from choosing DE over B and the risk of losing is not that great.
- There is more to be gained with choice ACE over ADE despite the slightly higher risk.
- There is only a 25% chance of having less than $100,000 per year.
- There is only a 25% chance of having less than 100,000 in BDF while there is a 50% chance of having less than 100,000 in BCF
- There is only a 25% chance of having under $100,000 per year
- There isn't much of a difference between the other scenario and this one. In BDE there is a higher probability to get higher than %70,000 as opposed to BCE
- There's no risk of getting half of my goal (100,000)
- They are the exact same. I didn't need to choose between E and F.
- They have the same minimum value but there is more money to be made in ACF
- This choice felt safer to me since it was more likely to get me at least 129K
- This way, there is certainty in my decision and future.
- To better reflect the higher probability of a greater income.
- To better reflect the probabilities of each outcome.
- To better reflect the probabilities of each outcome.
- To me, the possibility of getting 75,000 is not worth the risk of only having 32,000.
- With BDE, there is 50% chance of getting 75000 and only a 25% chance of getting 112,500. So the former is more reasonable to me.
- With BDF, there is a 75% chance of 54000 or greater, and getting 54000 is alright
- With BDF, there is a 75% chance of 54000 or greater, and getting 54000 is alright
- Worth risking 6,000 to get a higher amount
- Worth risking to get a higher amount
- Worth risking to get a higher amount
- You are equally likely to make significantly more money than the conservative as you are to make a few thousand less
- You can make much more money in option ACE with eh same likelihood of only making $92,000

- You can possibly get 225,000/year which is more than double the conservative payout. The probability of having less than the conservative payout (100,000) is only 25%.
- You have the same chance of getting 45,000 but the other 50% is a greater value for ACF.
- acf guarantees you more money than ade
- again, i realized that this one is the same as the other
- because it's significantly more likely that you'll make more than 100,000 than less than 100,000
- both diagrams have the same odds for receiving more than 67,000 but choice ACE has the chance of receiving a higher value.
- chance at larger amt and 50% to get 150k automatically
- conservative choice of $150,000 is enticing enough
- don't want to take the chance of having 32,000, even though it is small
- dont want to take 32000 chance
- dont want to take chance of 32,000
- greater chance of a greater value
- high potential reward
- higher chance to either get the same conservative amount or to win bigger
- higher potential reward
- i would risk it to get the higher amount
- id rather not take the chance of ending up with 40,000
- in 50-50 the 50,000 risk is worth the 25,000 reward.
- it's 50 50 and 90 is not much less than 100
- lower risk
- lower risk
- misclick first time. woops.
- misclick. woops.
- more chance to gain more
- more opportunity to win big and the conservative amt is reasonable
- more options
- new choice seems better
- new choice seems better
- only 25% chance of getting less than 94,000 and only 6,000 less
- only 25% chance of getting less then 50,000
- probability wise it makes more sense.
- rather not risk getting the 40,000
- rather not risk the 25% of getting 40,500.
- still guarenteed $94,000, and its worth $9,000 for a chance at $225,000
- the $112,500 is attractive
- the $75,000 conservative value makes sense to me
- the average expected return for BCE is greater than that of A
- the choice seems better, safer
- the conservative route seems smart
- the new choice seems more lucrative
- the risk could be worth it
- the risk of this choice is smaller
- this choice is the same as the other one i made just written differently

- this one matches the other one that i chose in the other situation
- to be conservative
- to be conservative
- when there's a 50% chance of getting 36000, it is worth it to try for 112,500.
- willing to take a little bit of risk
- worth risking 6,000 to get much more
- xx
- you have a chance of making much more in acf than b
- you have the potential to make much more

2.2 Participants who chose to revise both choices

2.2.1 Responses from July 2013
- Because regardless as to what was decided at age 35, considering from age 50 onward, the outcomes are still 50/50.
- CE seems better to me
- Conservative values provide more financial security.
- I am actually hesitating between the two choices. I would choose ACE eventually.
- I changed my answer because when the choices were put side my side, I realized that they were very similar and that the branching is the only difference, which sometimes made it seem like one choice seemed to have a better probability of getting the most money.
- I decided to go with a conservative estimate instead.
- I just prefer more choices when I am choosing
- I like that there is more upside potential than downside risk.
- I meant to pick BCF for both...
- I prefer more
- I realized that they were actually the same percent probabilities, just written slightly differently
- I think ADE is better.
- I would choose the second BDF over BCF
- Maybe different representation of the same choices made me choose differently. Now that i look carefully, id like to stick with what I had in mind. Id rather have more options than less
- The depiction of the choices misled me.
- The expected value for the top is greater than the expected value of the bottom
- The top path allows for 50% chance of getting 70,500 instead of 50% change of
- They are actually the same probabilities
- They are the same probabilities
- They have the same probabilities
- more than 50% I can get more than 141,000/yr
- same probabilities
- same probabilities
- same probabilities
- that's not what i meant - the options were confusing. I meant that there are two sets of identical choices presented in different manners. I would change my option to the first BDF over BCF and the identical option for the other

- the second choice seems more conservative

2.2.2 Responses from August 2013
- 225000 is high enough for risking getting 88000.
- Because I didn't realize I was changing my opinion
- Because I realized BCF gives only a 25% chance of winning either of the highest options, while A gives greater security.
- Because the expected value of choosing C over D is significantly higher, even if I am more likely risk averse at age 50.
- I like the chance of having more money better
- I realized that I had misinterpreted the pictures.
- I think that in the beginning I chose A over BDF because I was thinking that I wanted stability, but than I thought it's not that big of a difference of me getting the smallest amount in BDF with the guaranteed amount. So I feel like it worth to gamble and have a chance to get more out of it.
- I think the order the questions go in makes my decision change.
- I wanted to change my choice to ACF because I have a 25% chance of making 225,000 per year and a 50% chance of making 94,000 - a risk I am willing to tak0. Whereas with ADE I have a 50% of making 150,000 and 25% each of 141000 or 88000.
- I would like to have a 50 50 chance of winning 70500 over 4400 since there is the same chance I could get 112500
- More conservative to ensure less money is lost
- More conservative to ensure less money is lost
- More conservative to ensure less money is lost
- Situations are similar enough
- The amounts have the same probabilities.
- The choices are similar in enough in outcome - I would be making at least 88,000 per year either way.
- With BDF, ultimately, you get a 50% chance of 141k, and 25% for both 88 and 225. Whereas, with BDE, you get 50% chance of 150k, and 25 each for 88k and 141k. There is still a 25% chance of getting 88k so that wasnt the issue. I felt like 25% odds for 225 and 50% for 141 is a "better" choice. The alternative is to have a 25% of 141k and 50% for 150k. A potential loss of 9k (knowing my spending habits) is good enough to risk netting 225k
- be less conservative
- because the potential gain seemed greater than the loss
- chance for higher payment
- more moeny
- to make sure %s are the same

2.2.3 Responses from September 2013
- [No open-ended responses to record in this section]

2.2.4 Responses from October 2013
- .
- .
- Change mind...
- Change mind...

- fun
- fun

2.2.5   Responses from November 2013

- ACF is better.
- ACF over ADD in the first response makes more since it has higher expected payoffs
- B is more conservative and more comfroatble
- BECAUSE THEY HAVE THE SAME PROBABILITY
- Because both options say the same thing. It makes no sense to have different answers if both options are giving the same scenario.
- Because they are a lot less riskier than the second set of diagrams
- Better chance of getting 100k
- Both situations really point to the same outcome so I just chose ACE.
- DIFFERENT PROBABILITIES
- Different probabilities
- Equal probability
- F makes more sense to me.
- I WOULD CHOOSE BCF AND BDE, SAME OUTCOME
- I am guaranteed 100k
- I cannot figure out what this question is asking me..I cant find the answer I want.
- I changed my mind because before with ACF I was thinking that if I was at the bottom end, my luck was pretty bad and therefore I should be more conservative going forward. However, looking at the answer now, I would choose ACE because there is still at 75% chance with this option to get over $70,000 a year, compared to 50% with ACF.
- I did not understand the question. I would choose A over BDE in both situations.
- I didn't mean to choose ADF over ADE
- I don't know why it won't change, but I want them to both be A. It is the same situation
- I felt like both choices were basically the same in terms of the risk factor
- I felt like they were basically the same in terms of risk
- I felt that in both situations I could gain the most based on the scenarios I chose.
- I now have the option. Also, I'd pick the one with a higher conservative amount
- I realized that the benefits and detriments are essentially equal for both choices so it really didn't make sense for me to have chosen different paths.
- I would rather play the game of chance in the option DF because it has more choices, in option D Id actually rather take option C but I cannot figure out how to select that option
- I'm not sure if the computer wasn't letting me change it appropriately, but I would like to change both answers to ADE over ADF because they end up equaling the same percentages.
- In both cases you're maximizing the profit outcomes.
- In both options that I choose I have a 50% chance of either losing 10,000 or gaining at least 35,000
- In the first one there is more options. AIn the second one less options so not worth the risk
- It makes sense because I don't want to risk 64k
- It makes sense because I dont want to risk 64k
- It makes sense to have all the same answer.

- It seemed like the average total amount I could receive would actually be higher with these choices (I wish I could actually calculate it though)
- It seems more logical to stay with the option where there's a decently high chance of a payout in the $70K range.
- Lower chance of earning more money. Take the risk
- MORE WILLING TO GAMBLE TO GET MORE MONEY
- No idea why. REalized now that they are the same, just framed differently
- No idea whyi vhose what i chose . REalized now that they are the same, just framed differently
- Payoffs different. Risk too.
- Quite simple response.
- REalized now that they are the same, just framed differently
- REalized now that they are the same, just framed differently
- The 50% of a higher value offsets the loss from the other 50% chance from the conservative value.
- The 50% option is higher in
- The 50% option is higher in
- The 50% option is higher in option 1 in case 1. In case 2, you decrease the odds of getting the lowest amount from 50 to 25%.
- The alternative options are similar
- The amount of risk involved with each percentage is not worth the reward.
- The offset of the potential gain is greater than the potential loss compared to the conservative.
- The options are similar
- The options changed after the percentages did.
- The percentages end up being the same (I prefer ACF to ADE but the computer wouldn't let me change just one choice instead of both).
- The statistical likelihood points to a better result with changing my answer.
- There is more money involved here.
- These options are essentially the same.
- They are the same
- They are the same situation and it makes no sense to have differing choices.
- They end up equaling the same percentages - computer wouldn't let me change my answer to that both were ACE.
- This is because I have a higher probability of getting a higher number in the first diagram than the second.
- Thought over the options and felt it would be most practical.
- When I look at the percentage of getting other retirement payment, conservative is more safe
- When the amount is higher, i would not take that risk since this amount has already reach my expected utility level.
- because in both cases, I can get a conservative 100,000 or a 50% chance of 80,000
- because in both scenarios I have a higher probability of earning more than 86000
- because there's a more chance to get a larger amount of money.
- because you have a 75% chance of significantly increasing you're income as opposed to a 50-50 shot
- chance of making mmore money
- chances are different

- change to ADE
- higher gain
- i like conservative
- i would change it to have bdf in both cases.
- i would choose d for both.
- i would chose df for both.
- i'm not sure
- increase chances of making at least 60,000
- more capital
- more different likelihoods
- risk vs the potential reward ratio
- same chances
- same outcome chance
- thbdf and bde have the same possible outcomes with the same probABILITIES

2.2.6 Responses from December 2013
- ADE has the same likelihood of making $150,000 but less chance of making less than $100,000
- Again, the set up is different, but my chances are the same.
- Answers are just displayed differently.
- Because they are the same
- Because they are the same
- Even with the split decisions of 225000 and 129000, it's still 50% chance of getting one of them out of the other 50% of 86000
- F guarantees me 150000
- I actually wanted to make the questions be the same answer, but the only options were for me to change both of my answers and not only one.
- I believe the rewards of changing outweigh the risks
- I realized that it does not make sense to have different choices in these two situations
- I realized that it does not make sense to have different choices in these two situations
- I realized that it does not make sense to have different choices in these two situations
- I realized they are offering the same choice. They just looked different to me at first glance.
- I think that a 14,000 dollar loss is worth a potential 50000 dollar gain. 86000 is still a large sum of money and could be allocated properly throughout retirement.
- I think when I answered the questions the first time around, I viewed them as being different. However, I realize that the choices are similar in the two questions.
- I wanted to change it because I preferred the BDE and BDF better.
- I wanted to optimize the probability of not getting the lowest payout. Knowing that there is less of a chance to get the lowest possible retirement was basis for my decision.
- I would get the same chances in both. They're just set up differently.
- MAKES MORE SENSE
- MAKES MORE SENSE
- Potential reward outweighs risk
- The opportunity to make $112,500 is an incentive.
- The percentages are the same. My chance at higher or lower income is the same for each situation.

- The two options look different visually, but are actually the same. I don't need two different answers.
- The way the percentages are displayed is more appealing.
- There is a 50% of getting 120,000 in BDF, while in BDE you have 50% of getting 150,000.
- There is less probability but I would make more money from the choices
- There seems to be a higher risk in the first question in getting a lower pay than in the second question.
- They result percentages are the same, just displayed differently.
- because you have an equal chance of getting both choices given the decision at age 35 has already been made
- i realized that although they're notated differently, the diagrams are essentially the same
- potential gain outweighs risk
- same chances
- same chances
- same chances
- same chances (top and bottom)
- the second choice seems safer

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Web Appendix B. Sets of Payoffs in the Master Decision Tree

As described in Section II.C in the paper, participants were randomized to different monetary amounts for the sets of payoffs in the master decision tree. Table B.1 below shows the ten possible sets of payoffs. The rows of the table correspond to the actions leading to the payoff. "D-low" and "D-high" refer to the payoffs received from choosing action D and then receiving the low or high payoff, respectively, and similarly for "F-low" and "F-high." As described in the paper, each set of payoffs was determined by its corresponding CRRA indifference cutoff (listed in the table).

Table B.1: The Ten Sets of Payoffs in the Master Decision Tree

CRRA cutoff:	First Five Sets					Last Five Sets				
	1.576	2.958	4.865	12.113	17.967	1.576	2.958	4.865	12.113	17.967
D-low	52k	64k	74k	88k	92k	26k	32k	37k	44k	46k
B	72k	80k	86k	94k	96k	36k	40k	43k	47k	48k
A	100k	100k	100k	100k	100k	50k	50k	50k	50k	50k
D-high & F-low	108k	120k	129k	141k	144k	54k	60k	64.5k	70.5k	72k
E	150k	150k	150k	150k	150k	75k	75k	75k	75k	75k
F-high	225k	225k	225k	225k	225k	112.5k	112.5k	112.5k	112.5k	112.5k

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Web Appendix C. Additional Figures and Tables

Figure C.5: Flow chart for the placebo inconsistency reconsideration procedure
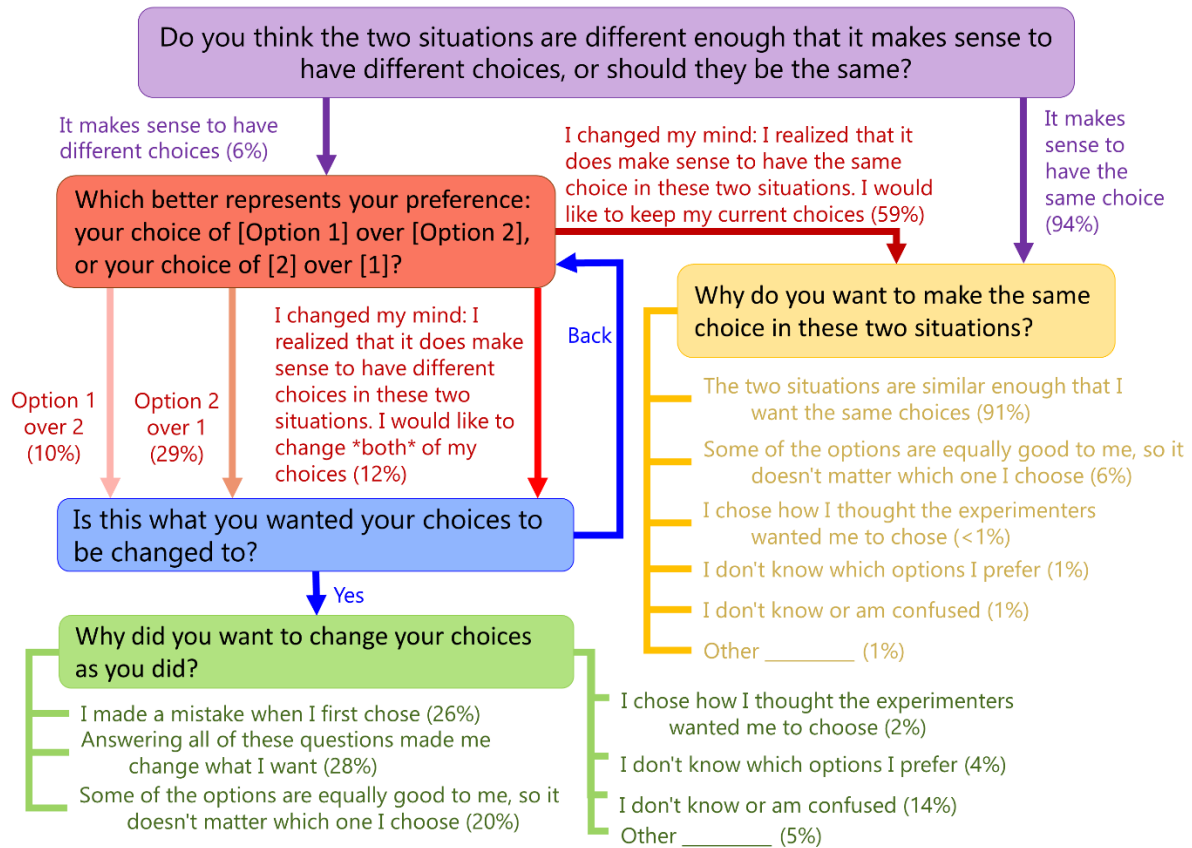
Note: The numbers in parentheses are frequencies of each choice across all instances of placebos in the Wave 1+2 sample. Percentages are rounded to the nearest 1% and therefore may not add up to 100%.

Figure C.6: Histograms of number of inconsistencies and intransitivities, restricted to individuals who saw different monetary levels in waves 1 and 2

(A) Inconsistencies
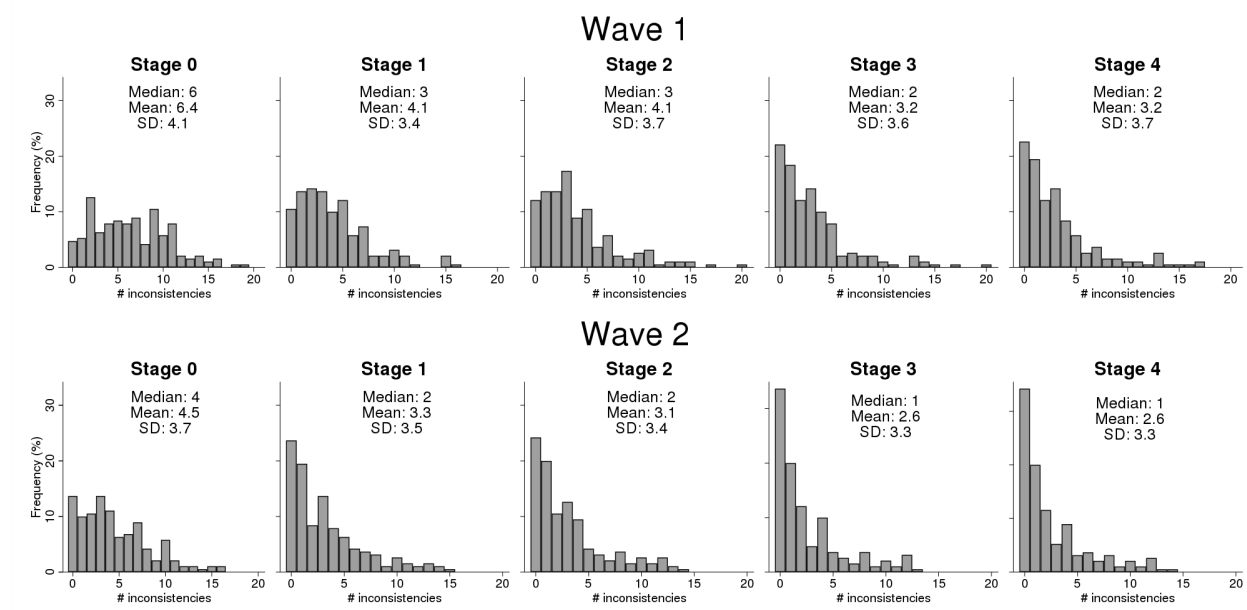
(B) Intransitivities
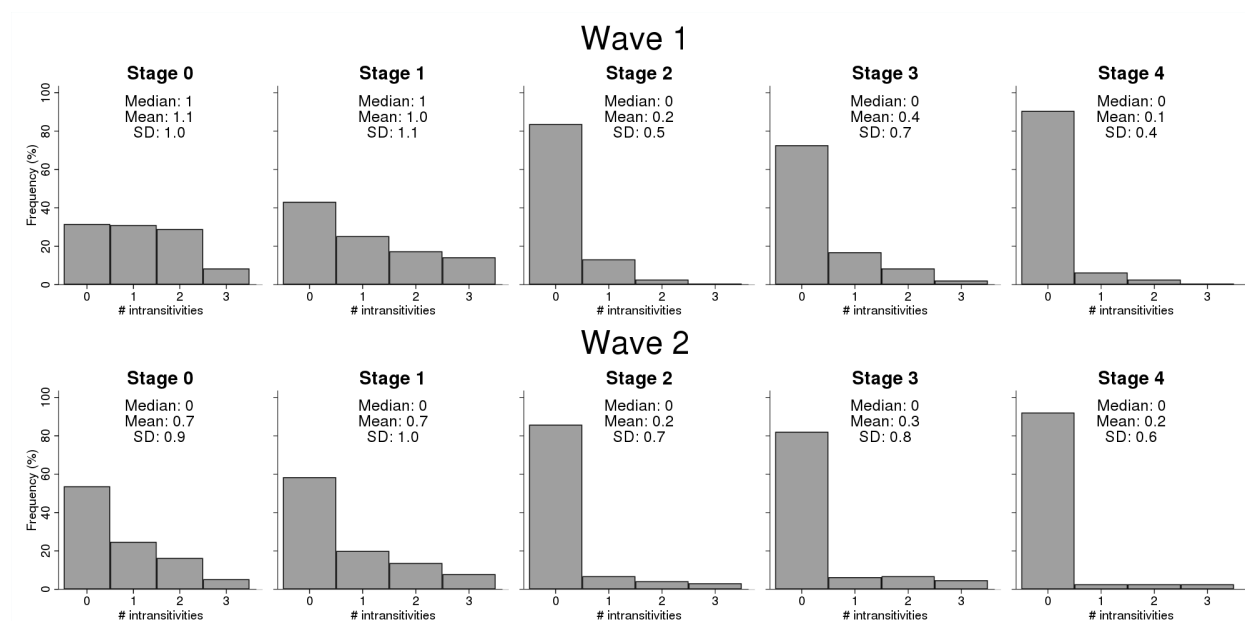
Note: Wave 1+2 sample, restricted to the 190 participants who saw different monetary levels in waves 1 and 2.

Figure C.7: Percentage of participants who make the risky choice in simple lotteries, adjusted by monetary level

(A) C versus D
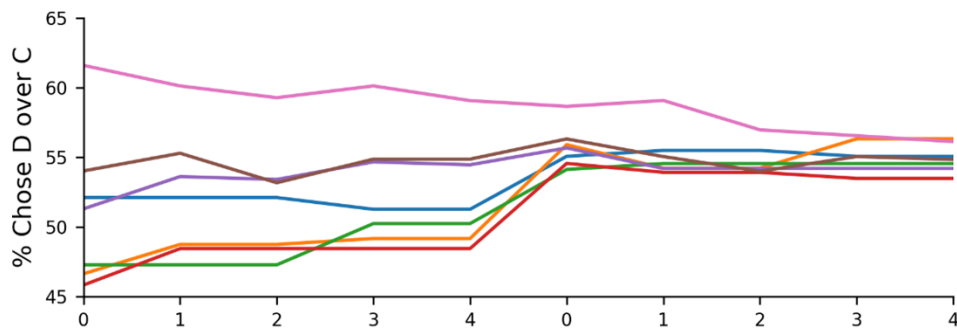
(B) E versus F
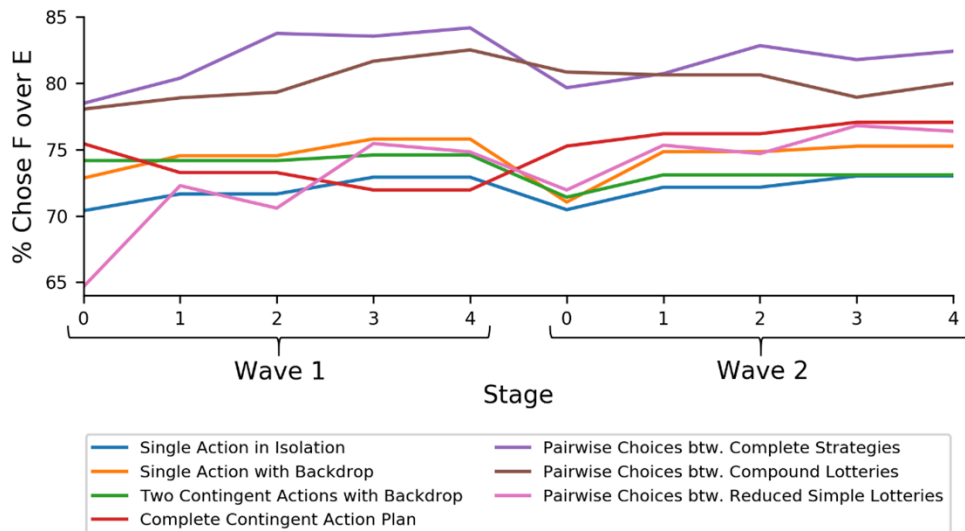
Note: Wave 1+2 sample. For each of the three pairwise frames, the top panel reports the average from the two questions eliciting BCE vs. BDE and BCF vs. BDF, and bottom panel reports the average from the two questions eliciting BCE vs. BCF and BDE vs. BDF. Standard errors around each plotted point are roughly 2-4 percentage points (not shown to avoid cluttering the figure). To control for monetary level, we took the following steps: first, we regressed the participants' choices on indicators for monetary level separately for each frame. Then, we obtained the residuals. Finally, we standardized the residual to have the same mean and standard deviation as the original distribution. The figure plots these standardized residuals.

Table C.4: Average consistency rates by frame across stages and waves

Frame	(1) # Pot. Incons.	(2) Wave 1 vs. 2 Consistency Rate		(3) Random Choice Consistency Rate	(4) p-value: Stage-0 Consistency Rate = Stage-4 Consistency Rate	(5) p-value: Stage-0 Consistency Rate = Random Consistency Rate	#Obs
		Stage 0	Stage 4				
Wave 1+2 Sample							
Single Action in Isolation	2	67.4%	69.1%	50.0%	0.2286	<0.0005	236
Single Action with Backdrop	2	67.1%	71.7%	50.0%	0.0050	<0.0005	237
Two Contingent Actions with Backdrop	2	68.6%	67.4%	50.0%	0.3973	<0.0005	236
Complete Contingent Action Plan	1	43.6%	44.1%	20.0%	0.8623	<0.0005	227
Pairwise Choices B/t Complete Strategies	10	69.3%	73.3%	50.0%	<0.0005	<0.0005	236
Pairwise Choices B/t Compound Lotteries	10	70.4%	74.5%	50.0%	<0.0005	<0.0005	234
Pairwise Choices B/t Reduced Lotteries	10	68.0%	72.8%	50.0%	<0.0005	<0.0005	234
Overall	37	68.1%	72.2%	49.2%	<0.0005	<0.0005	221
Wave 1+2 Sample, different monetary levels							
Single Action in Isolation	2	63.3%	64.3%	50.0%	0.5792	<0.0005	147
Single Action with Backdrop	2	62.6%	65.6%	50.0%	0.1502	<0.0005	147
Two Contingent Actions with Backdrop	2	62.6%	62.6%	50.0%	1.0000	<0.0005	147
Complete Contingent Action Plan	1	37.9%	37.1%	20.0%	0.8357	0.0021	140
Pairwise Choices B/t Complete Strategies	10	67.7%	70.8%	50.0%	0.0289	<0.0005	146
Pairwise Choices B/t Compound Lotteries	10	67.7%	70.6%	50.0%	0.0316	<0.0005	145
Pairwise Choices B/t Reduced Lotteries	10	65.4%	69.4%	50.0%	0.0110	<0.0005	145
Overall	37	65.5%	68.8%	49.2%	0.0006	<0.0005	137
Wave 1+2 Sample, same monetary levels							
Single Action in Isolation	2	74.2%	77.0%	50.0%	0.1984	<0.0005	89

Single Action with Backdrop	2	74.4%	81.7%	50.0%	0.0060	<0.0005	90
Two Contingent Actions with Backdrop	2	78.7%	75.3%	50.0%	0.1812	<0.0005	89
Complete Contingent Action Plan	1	52.9%	55.2%	20.0%	0.5302	0.3375	87
Pairwise Choices B/t Complete Strategies	10	71.8%	77.4%	50.0%	0.0008	<0.0005	90
Pairwise Choices B/t Compound Lotteries	10	74.7%	80.9%	50.0%	0.0022	<0.0005	89
Pairwise Choices B/t Reduced Lotteries	10	72.2%	78.3%	50.0%	<0.0005	<0.0005	89
Overall	37	72.5%	77.7%	49.2%	<0.0005	<0.0005	84

Note: All panels are restricted to participants who are not missing any data from either wave for that frame. Top panel: Wave 1+2 sample. Middle panel: Wave 1+2 sample, restricted to participants who were assigned different monetary levels in waves 1 and 2. Bottom panel: Wave 1+2 sample, restricted to participants who were assigned the same monetary levels in waves 1 and 2. Consistency rate = (total number of consistencies)/(number of potential inconsistencies). *P*-values are from two-sided tests for differences in proportions. Percentages are rounded to the nearest 0.1%.

Table C.9: Untutored choices by frame and randomization into the rightside-up vs. upside-down orientation

Option 1 vs. Option 2	% Chose Option 1		Diff	P-value H_0: Diff = 0	#Obs
	Rightside-Up Orientation	Upside-Down Orientation			
Single Action in Isolation					
C vs. D	46.5%	48.5%	-2.0%	0.7623	237
E vs. F	30.7	28.7	2.0	0.7378	237
Single Action with Backdrop					
C vs. D	49.5	55.9	-6.4	0.3326	237
E vs. F	23.8	29.4	-5.6	0.3348	237
Two Contingent Actions with Backdrop					
C vs. D	52.5	52.5	-0.1	0.9858	236
E vs. F	24.8	26.5	-1.7	0.7660	237
Complete Contingent Action Plan					
A vs. other options	18.2	20.5	-2.3	0.6677	231
BCE vs. other options	6.1	5.3	0.8	0.8057	231
BCF vs. other options	33.3	32.6	0.8	0.9040	231
BDE vs. other options	5.1	12.1	-7.1	0.0648	231
BDF vs. other options	37.4	29.5	7.8	0.2119	231
Pairwise Choices Between Complete Strategies					
A vs. BCE	27.7	41.9	-14.2	0.0243	237
A vs. BCF	21.8	22.8	-1.0	0.8541	237
A vs. BDE	33.7	39.7	-6.0	0.3431	237
A vs. BDF	21.8	24.3	-2.5	0.6560	237
BCE vs. BCF	20.8	16.9	3.9	0.4495	237
BCE vs. BDE	48.5	47.1	1.5	0.8253	237
BCE vs. BDF	36.6	39.7	-3.1	0.6323	237
BCF vs. BDE	72.3	63.2	9.0	0.1441	237
BCF vs. BDF	50.5	48.5	2.0	0.7659	237
BDE vs. BDF	25.7	23.5	2.2	0.6966	237
Pairwise Choices Between Compound Lotteries					
A vs. BCE	30.7	33.8	-3.1	0.6126	237
A vs. BCF	26.7	22.1	4.7	0.4072	237
A vs. BDE	34.7	32.4	2.3	0.7117	237
A vs. BDF	23.8	24.3	-0.5	0.9291	237

BCE vs. BCF	22.0	16.9	5.1	0.3276	236
BCE vs. BDE	47.5	50.4	-2.8	0.6669	236
BCE vs. BDF	37.6	36.8	0.9	0.8929	237
BCF vs. BDE	64.4	74.1	-9.7	0.1082	236
BCF vs. BDF	42.6	42.6	-0.1	0.9911	237
BDE vs. BDF	27.7	22.2	5.5	0.3336	236

Pairwise Choices Between Simple Lotteries

A vs. BCE	29.7	28.1	1.6	0.7952	236
A vs. BCF	35.0	36.0	-1.0	0.8710	236
A vs. BDE	35.6	34.6	1.1	0.8633	237
A vs. BDF	31.7	29.4	2.3	0.7084	237
BCE vs. BCF	28.7	27.4	1.3	0.8259	236
BCE vs. BDE	46.5	43.4	3.2	0.6311	237
BCE vs. BDF	44.6	43.4	1.2	0.8580	237
BCF vs. BDE	46.5	51.9	-5.3	0.4210	236
BCF vs. BDF	29.7	33.1	-3.4	0.5814	237
BDE vs. BDF	40.6	44.1	-3.5	0.5894	237

Note: Wave 1+2 sample. *P*-values are two-sided and from two-sample *t*-tests for differences in proportions between choices made by participants who saw the rightside-up orientation of screens (i.e., choice A is at the top and choices E vs. F are at the bottom of the screen) and choices made by participants who saw the upside-down orientation (i.e. choice A is at the bottom and choices E vs. F are at the top of the screen).

Table C.10: Percentage of participants who make the risky choice in simple lotteries

	Wave 1					Wave 2				
Frame	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4
% Choose D over C										
Single Action in Isolation	52.3%	52.3%	52.3%	51.5%	51.5%	54.9%	55.3%	55.3%	54.9%	54.9%
	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.2)	(3.2)	(3.2)	(3.2)	(3.2)
Single Action with Backdrop	46.8	48.9	48.9	49.4	49.4	55.7	54.0	54.0	56.1	56.1
	(3.2)	(3.3)	(3.3)	(3.3)	(3.3)	(3.2)	(3.2)	(3.2)	(3.2)	(3.2)
Two Contingent Actions with Backdrop	47.5	47.5	47.5	50.4	50.4	54.0	54.4	54.4	54.4	54.4
	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.2)	(3.2)	(3.2)	(3.2)	(3.2)
Complete Contingent Action Plan	45.9	48.5	48.5	48.5	48.5	54.6	53.9	53.9	53.5	53.5
	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)
Pairwise Choices B/t Complete Strategies	51.5	53.8	53.6	54.9	54.6	55.5	54.0	54.0	54.0	54.0
	(2.9)	(2.9)	(2.9)	(2.9)	(2.9)	(2.8)	(2.9)	(2.9)	(2.9)	(3.0)
Pairwise Choices B/t Compound Lotteries	54.2	55.5	53.4	55.1	55.1	56.1	54.9	53.8	54.9	54.6
	(2.9)	(2.8)	(2.9)	(3.0)	(3.0)	(3.0)	(2.9)	(3.0)	(2.9)	(2.9)
Pairwise Choices B/t Reduced Lotteries	61.8	60.3	59.5	60.3	59.3	58.4	58.9	56.8	56.3	55.9
	(2.6)	(2.6)	(2.8)	(2.8)	(2.9)	(2.7)	(2.7)	(2.8)	(2.9)	(2.9)
% Choose F over E										
Single Action in Isolation	70.5	71.7	71.7	73.0	73.0	70.3	72.0	72.0	72.9	72.9
	(3.0)	(2.9)	(2.9)	(2.9)	(2.9)	(3.0)	(2.9)	(2.9)	(2.9)	(2.9)
Single Action with Backdrop	73.0	74.7	74.7	75.9	75.9	70.9	74.7	74.7	75.1	75.1
	(2.9)	(2.8)	(2.8)	(2.8)	(2.8)	(3.0)	(2.8)	(2.8)	(2.8)	(2.8)
Two Contingent Actions with Backdrop	74.3	74.3	74.3	74.7	74.7	71.3	73.0	73.0	73.0	73.0
	(2.8)	(2.8)	(2.8)	(2.8)	(2.8)	(2.9)	(2.9)	(2.9)	(2.9)	(2.9)
Complete Contingent Action Plan	75.5	73.4	73.4	72.1	72.1	75.1	76.1	76.1	77.0	77.0
	(2.8)	(2.9)	(2.9)	(3.0)	(3.0)	(2.9)	(2.8)	(2.8)	(2.8)	(2.8)
Pairwise Choices B/t Complete Strategies	78.5	80.4	83.8	83.5	84.2	79.7	80.7	82.8	81.8	82.4
	(2.1)	(2.1)	(2.0)	(2.0)	(2.0)	(2.3)	(2.2)	(2.1)	(2.2)	(2.2)
Pairwise Choices B/t Compound Lotteries	78.1	78.9	79.4	81.7	82.6	80.8	80.6	80.6	78.9	80.0
	(2.2)	(2.2)	(2.2)	(2.2)	(2.1)	(2.1)	(2.1)	(2.2)	(2.4)	(2.3)

Pairwise Choices B/t Reduced Lotteries	64.6	72.2	70.6	75.4	74.8	71.9	75.3	74.7	76.8	76.4
	(2.5)	(2.3)	(2.4)	(2.3)	(2.4)	(2.3)	(2.2)	(2.3)	(2.3)	(2.3)

Note: Wave 1+2 sample. Data shown were used to generate Figure 7. Percentage of participants who chose the riskier option (D or F) are displayed. Standard errors are in parentheses.

Table C.11: Regression of risky choice on stage of experiment

	(1) Pooled choices	(2) Chose D over C	(3) Chose F over E
Stage	0.00370	0.000506	0.00690
	(0.00106)	(0.00151)	(0.00143)
Wave	0.0198	0.0318	0.00777
	(0.0175)	(0.0265)	(0.0206)
Frames:			
Single Action with Backdrop	0.00460	-0.0156	0.0246
	(0.00698)	(0.0104)	(0.00919)
Two Contingent Actions with Backdrop	-0.00213	-0.0200	0.0154
	(0.00963)	(0.0135)	(0.0149)
Complete Contingent Action Plan	0.0827	0.0614	0.104
	(0.0177)	(0.0235)	(0.0217)
Pairwise Choices b/w Complete Strategies	0.0512	0.00485	0.0977
	(0.0137)	(0.0204)	(0.0188)
Pairwise Choices b/w Compound Lotteries	0.0469	0.0125	0.0814
	(0.0145)	(0.0216)	(0.0194)
Pairwise Choices b/w Reduced Lotteries	0.0326	0.0525	0.0127
	(0.0152)	(0.0211)	(0.0221)
Constant	0.587	0.486	0.688
	(0.0299)	(0.0452)	(0.0374)
#Obs	32051	16033	16018

Note: Wave 1+2 sample. Regression of choice of D or F on the stage of the experiment, controlling for wave and including fixed effects for frames. Standard errors are clustered at the participant level and displayed in parentheses.

Table C.12: Two-sample *t*-test of total inconsistencies in untutored choices, by training

Group	Mean inconsistencies	SE	#Obs
Did not receive additional training	5.966	0.237	292
Received additional training	5.615	0.220	304
Difference	0.351	0.323	

Note: Wave 1 sample. We randomized half the participants to also get a probability training and quiz, alongside the other training batteries. The other half of participants did not get the training and answered the quiz in Part 5 (immediately before the demographic questions. For the null hypothesis that the difference is equal to 0, the *p*-value is 0.2780.

Web Appendix D. Descriptive Analyses: Complete Results From the Wave-1 Sample

Part I of this appendix reports all the main text figures and tables after restricting to the wave 1 sample. Part II reports all the additional tables and figures from Appendix C after restricting to the wave 1 sample.

Part I

Figure D.5.1: Flow chart for the inconsistency reconsideration procedure
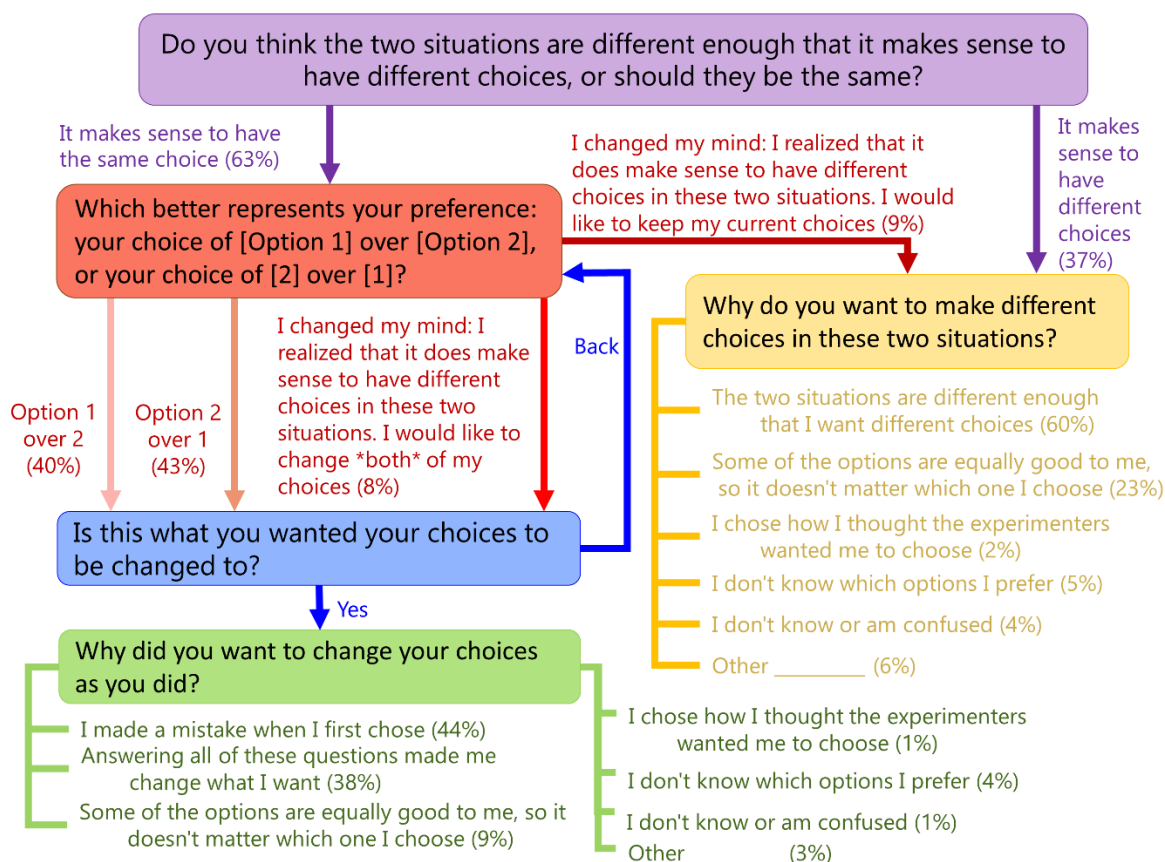
Note: The numbers in parentheses are frequencies of each choice across all instances of inconsistencies (not including placebos) in the Wave 1 sample, with the exception of the responses to "why did you want to change your choices as you did" and "why do you want to change your choices as you did." For those two questions, version 1 of the experiment collected open-ended responses rather than multiple-choice responses. Thus, the percentages for those two questions are only for individuals in version 2.

Figure D.6: Histograms of number of inconsistencies and intransitivities

(A) Inconsistencies
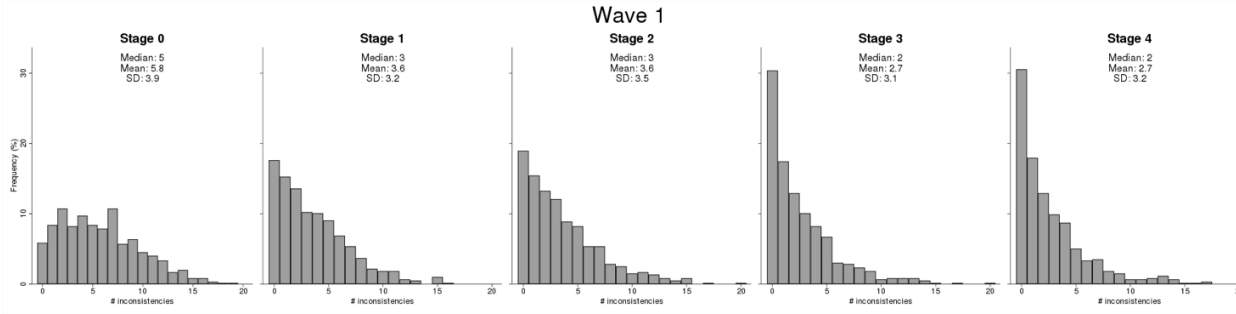
(B) Intransitivities
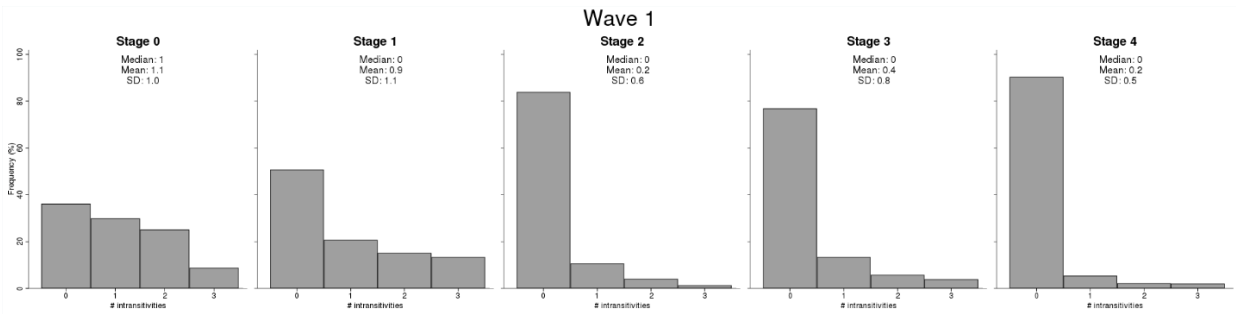
Note: Wave 1 sample.

Figure D.7.1: Percentage of participants who make the risky choice in simple lotteries

 (A) C versus D
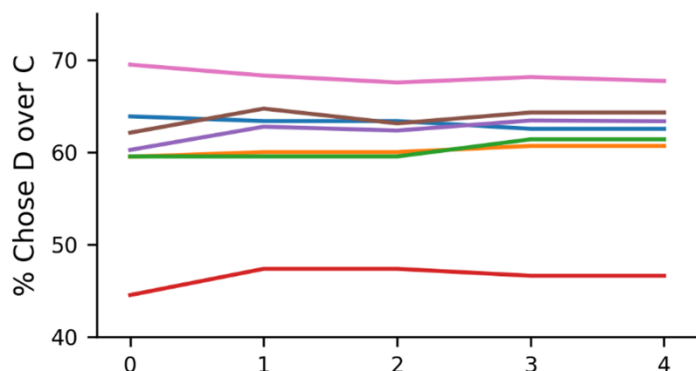
(B) E versus F
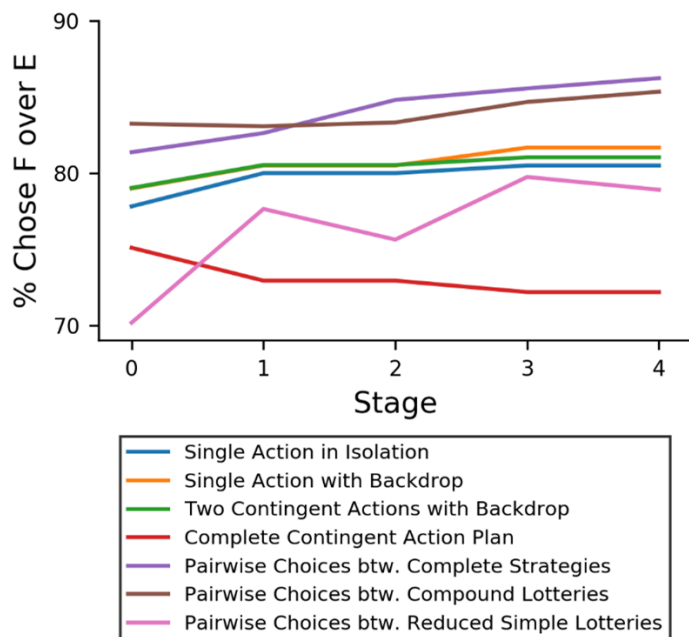
Note: Wave 1 sample. For each of the three pairwise frames, the top panel reports the average from the two questions eliciting BCE vs. BDE and BCF vs. BDF, and bottom panel reports the average from the two questions eliciting BCE vs. BCF and BDE vs. BDF. Standard errors around each plotted point are roughly 1-3 percentage points (not shown to avoid cluttering the figure).

Table D.1: Responses after not revising an inconsistency

Axiom	Different Situation	Indiff	Expt'er Demand	IDK	Confused	Other	#Obs
Irrelevance of Background Counterfactuals	63.9%	14.8%	3.3%	6.6%	8.2%	3.3%	61
Simple Actions = State-Contingent Actions	77.3	10.7	1.3	1.3	8.0	1.3	75
Irrelevance of Counterfactual Choices	56.6	15.1	1.9	15.1	5.7	5.7	53
Fusion + Shift from Nodewise to Pairwise	62.7	18.3	1.4	8.5	5.6	3.5	142
Complete Strategies = Implied Lotteries	57.9	24.9	1.8	6.0	2.9	6.5	385
Reduction of Compound Lotteries	58.6	26.4	1.8	2.5	3.6	7.2	447
Overall	60.3	22.8	1.8	5.1	4.2	5.9	1163

Note: Wave 1 sample. Percentages are averages across all stages in both waves. The full text of the responses to the question "Why do you want to make different choices in these two situations?" after not revising an inconsistency are: "The two situations are different enough that I want different choices", "Some of the options are equally good to me, so it doesn't matter which one I choose", "I chose how I thought the experimenters wanted me to choose", "I don't know which options I prefer", "I don't know or am confused", or "Other". Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table D.2: Responses after revising an inconsistency

Axiom	Made Mistake	Learned	Indiff	Expt'er Demand	IDK	Confused	Other	#Obs
Irrelevance of Background Counterfactuals	46.7%	28.3%	11.7%	3.3%	1.7%	1.7%	6.7%	60
Simple Actions = State-Contingent Actions	36.6	34.2	12.2	0.0	9.8	2.4	4.9	41
Irrelevance of Counterfactual Choices	100.0	0.0	0.0	0.0	0.0	0.0	0.0	1
Fusion + Shift from Nodewise to Pairwise	47.3	23.6	12.7	1.8	9.1	5.5	0.0	55
Complete Strategies = Implied Lotteries	42.8	37.9	9.4	1.6	4.4	1.2	2.8	435
Reduction of Compound Lotteries	44.4	39.9	8.8	1.0	2.6	0.5	2.8	611
Overall	43.8	37.7	9.5	1.3	3.7	1.1	2.9	1203

Note: Wave 1 sample. Percentages are averages across all stages in both waves. The full text of the responses to the question "Why did you want to change your choices as you did?" after not revising an inconsistency are: "I made a mistake when I first chose", "Answering all of these questions made me change what I want", "Some of the options are equally good to me, so it doesn't matter which one I choose", "I chose how I thought the experimenters wanted me to choose", "I don't know which options I prefer", "I don't know or am confused", and "Other". Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table D.3: Responses after not revising an intransitivity

Frame	Indiff	IDK	Real Intransitivity	Too Hard	Other	#Obs
Pairwise Choices between Complete Strategies	2.4%	33.3%	11.9%	2.4%	50.0%	42
Pairwise Choices Between Compound Lotteries	2.3	39.5	7.0	14.0	37.2	43
Pairwise Choices Between Reduced Simple Lotteries	4.2	35.4	14.6	6.3	39.6	48
Total	3.0	36.1	11.3	7.5	42.1	133

Note: Wave 1 sample. Percentages are averages across all stages in both waves. The full text of the responses to the question "Why couldn't you rank these options?" after not revising an intransitivity are: "I couldn't rank the options because they are all equally good to me", "I couldn't rank the options because I don't know which option I prefer", "I feel like Ian Trantivi on the game show. Remember Ian's story from earlier in the survey: he won a prize, and could choose between three piles of stuff, but he prefers the first pile to the second, the second pile to the third, and the third pile to the first", "I should be able to rank the options, but it's extremely hard", and "I couldn't rank the options for another reason". Among the three pairwise frames, when facing an intransitivity, the percentage of the time that participants did not revise was 31.6%, 34.7%, and 34.0%, respectively. Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table D.6: Direction of revising inconsistencies

Axiom	Choose Frame *j*	Choose Frame *j+1*	*p*-value *j = j*+1	No Update	Swap	#Obs
Choice in frame *j* was riskier						
Irrelevance of Background Counterfactuals	**25.0%**	16.2%	0.1091	57.4%	1.5%	136
Simple Actions = State-Contingent Actions	**23.0**	11.5	0.0302	62.3	3.3	122
Irrelevance of Counterfactual Choices	16.0	**26.9**	0.0685	52.9	4.2	119
Fusion + Shift from Nodewise to Pairwise	**22.1**	13.7	0.1089	58.0	6.1	131
Complete Strategies = Implied Lotteries	**29.9**	21.6	0.0075	43.5	5.1	529
Reduction of Compound Lotteries	**36.6**	17.4	<0.0001	40.1	5.9	725
Overall	**30.2**	18.5	<0.0001	46.2	5.1	1762
Choice in frame *j+1* was riskier						
Irrelevance of Background Counterfactuals	7.5	**27.4**	0.0004	57.5	7.5	106
Simple Actions = State-Contingent Actions	13.2	**14.9**	0.7253	66.7	5.3	114
Irrelevance of Counterfactual Choices	**34.2**	17.5	0.0127	43.9	4.4	114
Fusion + Shift from Nodewise to Pairwise	20.3	**24.8**	0.3184	49.5	5.4	222
Complete Strategies = Implied Lotteries	15.8	**37.5**	<0.0001	42.0	4.7	576
Reduction of Compound Lotteries	23.7	**28.1**	0.1443	43.5	4.6	565
Overall	19.6	**29.2**	<0.0001	46.3	4.9	1697
Choices in frames *j* and *j+1* were not risk-ranked						
Irrelevance of Background Counterfactuals	-	**-**	-	-	-	0
Simple Actions = State-Contingent Actions	-	**-**	-	-	-	0
Irrelevance of Counterfactual Choices	21.2	**27.3**	0.6245	48.5	3.0	33
Fusion + Shift from Nodewise to Pairwise	**22.6**	18.9	0.6740	50.9	7.5	53
Complete Strategies = Implied Lotteries	23.7	**26.3**	0.6093	45.3	4.7	190
Reduction of Compound Lotteries	**33.3**	18.4	0.0016	41.7	6.6	228
Overall	**27.8**	22.0	0.0671	44.4	5.8	504

Note: Wave 1 sample. *P*-values are from two-sided tests for differences in proportions. To facilitate reading the table, we have bolded whichever frame-*j* or frame-(*j*+1) number is larger in each row. Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table D.8. Results from structural estimation

A. Pairwise Choices Between Complete Strategies					B. Pairwise Choices Between Compound Lotteries		
	(1)	(2)	(3)		(1)	(2)	(3)
	ln(CRRA)	ln(SD(error))	$\sigma_v^2 + \sigma_{\eta_1}^2$		ln(CRRA)	ln(SD(error))	$\sigma_v^2 + \sigma_{\eta_1}^2$
stage	0.00411	-0.101			0.0326	-0.108	
	(0.0104)	(0.0102)			(0.0120)	(0.0101)	
constant	0.135	0.374	1.989		-0.0369	0.498	2.205
	(0.131)	(0.0837)	(0.332)		(0.151)	(0.0870)	(0.384)

C. Pairwise Choices Between Reduced Simple Lotteries			
	(1)	(2)	(3)
	ln(CRRA)	ln(SD(error))	$\sigma_v^2 + \sigma_{\eta_1}^2$
stage	0.0104	-0.118	
	(0.0121)	(0.0101)	
constant	0.0671	0.569	2.049
	(0.138)	(0.0836)	(0.346)

Note: Wave 1 sample. #Obs is 26,820 choices. Standard errors in parentheses. Column (3) reports estimates of $\sigma_v^2 + \sigma_{\eta_1}^2$ because with only wave 1 data, we cannot separately identify $\sigma_{\eta_1}^2$ (the component uncorrelated with wave-2 responses) and σ_v^2 (the covariance between wave-1 and wave-2 responses).

Part II

Figure D.5.2: Flow chart for the placebo reconsideration procedure
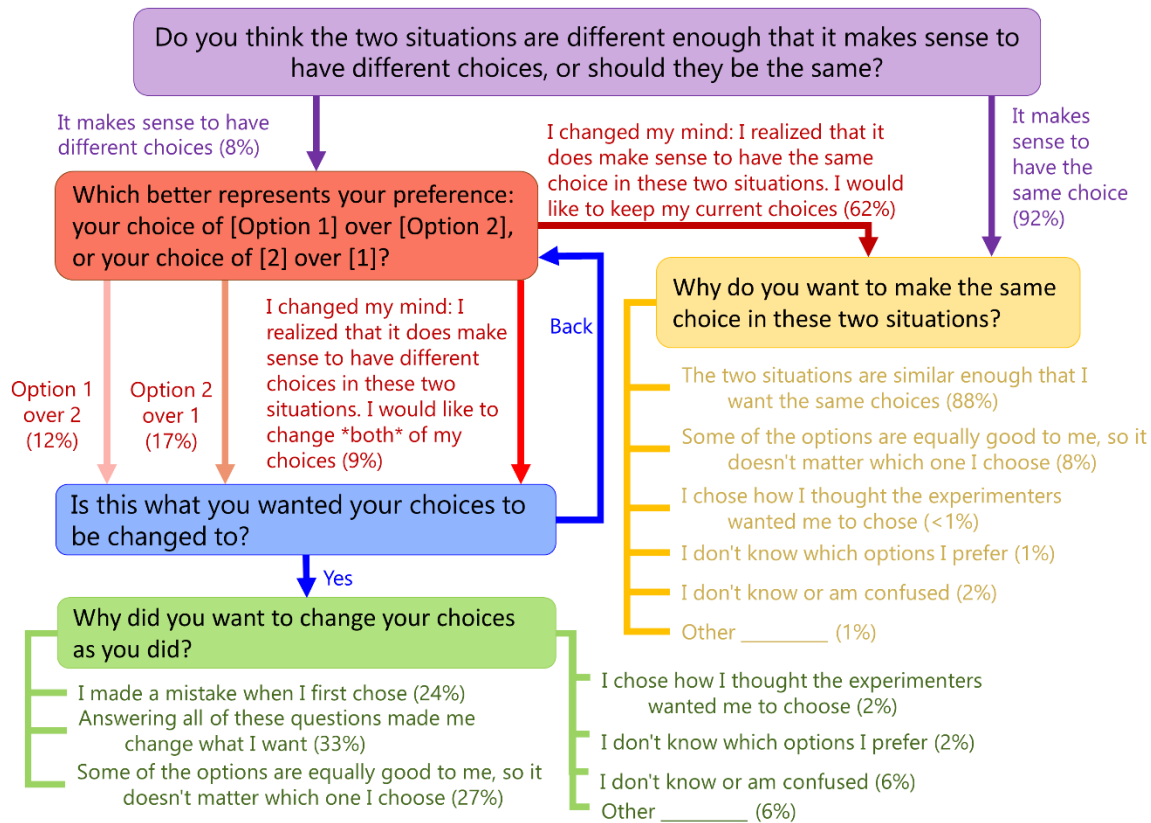
Note: The numbers in parentheses are frequencies of each choice across all instances of placebos in the Wave 1 sample, with the exception of the responses to "why did you want to change your choices as you did" and "why do you want to change your choices as you did." For those two questions, version 1 of the experiment collected open-ended responses rather than multiple-choice responses. Thus, the percentages for those two questions are only for individuals in version 2.

Figure D.7.2: Percentage of participants who make the risky choice in simple lotteries, adjusted by monetary level

(A) C versus D

(B) E versus F

Legend:
- Single Action in Isolation
- Single Action with Backdrop
- Two Contingent Actions with Backdrop
- Complete Contingent Action Plan
- Pairwise Choices btw. Complete Strategies
- Pairwise Choices btw. Compound Lotteries
- Pairwise Choices btw. Reduced Simple Lotteries

Note: Wave 1 sample. For each of the three pairwise frames, the top panel reports the average from the two questions eliciting BCE vs. BDE and BCF vs. BDF, and bottom panel reports the average from the two questions eliciting BCE vs. BCF and BDE vs. BDF. Standard errors around each plotted point are roughly 1-3 percentage points (not shown to avoid cluttering the figure). To control for monetary level, we took the following steps: first, we regressed the participants' choices on indicators for monetary level separately for each frame. Then, we obtained the residuals. Finally, we standardized the residual to have the same mean and standard deviation as the original distribution.

Table D.9: Untutored choices by frame and randomization into the upside-down orientation

Option 1 vs. Option 2	% Chose Option 1		Diff	*P*-value H_0: Diff = 0	#Obs
	Rightside-Up Orientation	Upside-Down Orientation			
Single Action in Isolation					
C vs. D	37.0%	35.4%	1.5%	0.6984	595
E vs. F	23.6	21.0	2.5	0.4566	595
Single Action with Backdrop					
C vs. D	38.8	42.0	-3.2	0.4232	595
E vs. F	19.2	22.6	-3.4	0.3154	595
Two Contingent Actions with Backdrop					
C vs. D	39.1	41.6	-2.5	0.5353	593
E vs. F	19.1	22.6	-3.4	0.3048	596
Complete Contingent Action Plan					
A vs. other options	15.4	16.2	-0.7	0.8078	581
BCE vs. other options	3.3	6.5	-3.2	0.0808	581
BCF vs. other options	23.9	25.6	-1.7	0.6426	581
BDE vs. other options	5.9	9.4	-3.5	0.1154	581
BDF vs. other options	51.5	42.4	9.1	0.0287	581
Pairwise Choices Between Complete Strategies					
A vs. BCE	18.1	27.0	-8.8	0.0104	595
A vs. BCF	16.6	16.0	0.6	0.8385	596
A vs. BDE	23.5	26.6	-3.2	0.3731	596
A vs. BDF	17.0	17.2	-0.2	0.9455	595
BCE vs. BCF	17.0	15.7	1.3	0.6702	596
BCE vs. BDE	40.4	39.5	0.9	0.8166	596
BCE vs. BDF	31.8	34.5	-2.7	0.4838	596
BCF vs. BDE	70.4	65.8	4.6	0.2342	596
BCF vs. BDF	40.1	39.2	0.9	0.8255	596
BDE vs. BDF	20.6	21.3	-0.7	0.8254	596
Pairwise Choices Between Compound Lotteries					
A vs. BCE	21.7	21.9	-0.3	0.9337	596
A vs. BCF	19.9	16.0	3.9	0.2187	596

A vs. BDE	26.4	22.9	3.5	0.3267	596
A vs. BDF	15.9	15.7	0.2	0.9441	596
BCE vs. BCF	14.1	13.8	0.3	0.9059	595
BCE vs. BDE	38.3	41.5	-3.2	0.4215	595
BCE vs. BDF	30.0	31.0	-1.1	0.7776	596
BCF vs. BDE	63.8	68.9	-5.1	0.1897	594
BCF vs. BDF	35.7	36.1	-0.3	0.9374	596
BDE vs. BDF	19.5	19.5	0.0	0.9994	595

Pairwise Choices Between Simple Lotteries

A vs. BCE	23.1	19.2	3.9	0.2421	595
A vs. BCF	25.0	27.3	-2.3	0.5304	595
A vs. BDE	22.7	22.6	0.2	0.9599	596
A vs. BDF	21.3	21.6	-0.3	0.9221	596
BCE vs. BCF	20.2	25.8	-5.6	0.1087	595
BCE vs. BDE	33.6	39.5	-5.9	0.1350	596
BCE vs. BDF	33.6	33.5	0.0	0.9935	596
BCF vs. BDE	40.8	45.0	-4.2	0.3058	595
BCF vs. BDF	22.4	26.0	-3.6	0.3029	596
BDE vs. BDF	37.2	35.7	1.4	0.7147	596

Note: Wave 1 sample. *P*-values are two-sided and from two-sample *t*-tests for differences in proportions between choices made by participants who saw the rightside-up orientation of screens (i.e., choice A is at the top and choices E vs. F are at the bottom of the screen) and choices made by participants who saw the upside-down orientation (i.e., choice A is at the bottom and choices E vs. F are at the top of the screen).

Table D.10: Percentage of participants who make the risky choice in simple lotteries

	Wave 1				
Frame	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4
% Choose D over C					
Single Action in Isolation	63.9%	63.4%	63.4%	62.5%	62.5%
	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)
Single Action with Backdrop	59.5	60.0	60.0	60.7	60.7
	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)
Two Contingent Actions with Backdrop	59.5	59.5	59.5	61.4	61.4
	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)
Complete Contingent Action Plan	44.5	47.4	47.4	46.6	46.6
	(3.1)	(3.1)	(3.1)	(3.1)	(3.1)
Pairwise Choices B/t Complete Strategies	60.2	62.8	62.3	63.4	63.3
	(1.7)	(1.7)	(1.8)	(1.8)	(1.8)
Pairwise Choices B/t Compound Lotteries	62.1	64.7	63.1	64.3	64.3
	(1.7)	(1.7)	(1.8)	(1.8)	(1.8)
Pairwise Choices B/t Reduced Lotteries	69.5	68.3	67.5	68.1	67.7
	(1.5)	(1.6)	(1.7)	(1.7)	(1.7)
% Choose F over E					
Single Action in Isolation	77.8	80.0	80.0	80.5	80.5
	(1.7)	(1.6)	(1.6)	(1.6)	(1.6)
Single Action with Backdrop	79.0	80.5	80.5	81.7	81.7
	(1.7)	(1.6)	(1.6)	(1.6)	(1.6)
Two Contingent Actions with Backdrop	79.0	80.5	80.5	81.0	81.0
	(1.7)	(1.6)	(1.6)	(1.6)	(1.6)
Complete Contingent Action Plan	75.1	72.9	72.9	72.2	72.2
	(2.7)	(2.7)	(2.7)	(2.8)	(2.8)
Pairwise Choices B/t Complete Strategies	81.4	82.6	84.8	85.6	86.2
	(1.3)	(1.3)	(1.2)	(1.2)	(1.2)
Pairwise Choices B/t Compound Lotteries	83.2	83.1	83.3	84.7	85.4
	(1.3)	(1.2)	(1.3)	(1.2)	(1.2)
Pairwise Choices B/t Reduced Lotteries	70.2	77.6	75.6	79.7	78.9
	(1.5)	(1.3)	(1.4)	(1.3)	(1.4)

Note: Wave 1 sample. Data shown were used to generate Figure D.7.1. Percentage of participants who chose the riskier option (D or F) are displayed. Standard errors are in parentheses.

Table D.11: Regression of risky choice on stage of experiment

	(1) Pooled choices	(2) Chose D over C	(3) Chose F over E
Stage	0.00479	0.00174	0.00784
	(0.00102)	(0.00143)	(0.00137)
Frames:			
Single Action with Backdrop	-0.0103	-0.0296	0.00908
	(0.00653)	(0.00972)	(0.00810)
Two Contingent Actions with Backdrop	-0.0107	-0.0286	0.00672
	(0.00854)	(0.0128)	(0.0121)
Complete Contingent Action Plan	0.0268	0.0155	0.0381
	(0.0125)	(0.0175)	(0.0164)
Pairwise Choices B/t Complete Strategies	0.0183	-0.00710	0.0436
	(0.0109)	(0.0170)	(0.0138)
Pairwise Choices B/t Compound Lotteries	0.0236	0.00571	0.0417
	(0.0115)	(0.0177)	(0.0153)
Pairwise Choices B/t Reduced Lotteries	0.00872	0.0510	-0.0334
	(0.0118)	(0.0173)	(0.0160)
Constant	0.700	0.626	0.774
	(0.0137)	(0.0190)	(0.0160)
#Obs	40751	20373	20378

Note: Wave 1 sample. Regression of choice of D or F on the stage of the experiment. Frame fixed effects were included. Standard errors are clustered at the participant-level and displayed in parentheses.

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Web Appendix E. Details of CRRA Preference Estimation and Additional and Robustness Analyses

This section contains details of estimating CRRA preferences, as well as the results of several additional and robustness checks.

We used Stata version 16.1 to estimate the parameters in columns (1) and (2) of each table with maximum likelihood, using a Stata implementation of adaptive quadrature followed by the Newton-Raphson method (Rabe-Hesketh, Skrondal, and Pickles 2004; Rabe-Hesketh, Skrondal, and Pickles 2005). We specified a binomial distribution family for conditional densities and a scaled probit link function. For each unique person, we included two random effects and used adaptive quadrature with 40 integration points for each random effect. The model for estimating ln(CRRA) was constrained to include a constant of -1. Wave dummies were used to multiply the latent variables.

Columns (3)-(5) and the difference between $\sigma_{\eta_1}^2$ (columns 4) and $\sigma_{\eta_2}^2$ (columns 5) were computed from the maximum likelihood results using matrix algebra.

Table E.8a: Fastest quintile of participants dropped.

A. Pairwise Choices Between Complete Strategies

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.235	-0.520			
	(0.596)	(0.420)			
stage	-0.0126	-0.0910			
	(0.0257)	(0.0167)			
wave2*stage	0.0102	0.0468			
	(0.0307)	(0.0234)			
constant	-0.414	0.841	1.961	2.619	1.386
	(0.505)	(0.326)	(0.938)	(2.443)	(1.486)

B. Pairwise Choices Between Compound Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.138	-0.494			
	(0.581)	(0.391)			
stage	0.0241	-0.104			
	(0.0267)	(0.0165)			
wave2*stage	-0.0137	0.0552			
	(0.0323)	(0.0235)			
constant	-0.458	0.878	2.345	1.798	1.345
	(0.465)	(0.290)	(1.021)	(1.855)	(1.551)

C. Pairwise Choices Between Reduced Simple Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	-0.0871	-0.289			
	(0.529)	(0.385)			
stage	-0.00241	-0.113			
	(0.0249)	(0.0172)			
wave2*stage	-0.00792	0.0434			
	(0.0326)	(0.0233)			
constant	-0.221	0.868	2.163	1.023	2.205
	(0.359)	(0.260)	(0.941)	(1.268)	(2.040)

Note: Wave 1+2 sample, with fastest quintile of participants dropped. #Obs is 17,010 choices. Standard errors in parentheses. In panels A, B, and C, respectively, the difference between $\sigma_{\eta_1}^2$ (columns 4) and $\sigma_{\eta_2}^2$ (columns 5) is -1.233 (SE = 3.543), -0.453 (SE = 3.143), and 1.182 (SE = 3.060).

Table E.8b: Heterogeneity by sex and psychological characteristics.

A. Pairwise Choices Between Complete Strategies

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	-0.418	-0.130			
	(0.799)	(0.406)			
stage	-0.0139	-0.0965			
	(0.0261)	(0.0153)			
wave2*stage	0.0203	0.0597			
	(0.0368)	(0.0211)			
male	-0.221	-0.109			
	(0.386)	(0.0952)			
cognition	-0.836	-0.361			
	(0.397)	(0.0886)			
extraversion	0.777	-0.0820			
	(0.401)	(0.0893)			
agreeableness	0.354	-0.0456			
	(0.391)	(0.0871)			
conscientiousness	-0.0765	0.137			
	(0.428)	(0.0940)			
emotional stability	-0.536	0.0149			
	(0.383)	(0.0937)			
open to experience	-0.210	-0.174			
	(0.353)	(0.0904)			
constant	-0.305	1.267	4.204	1.418	6.589
	(0.704)	(0.317)	(2.369)	(2.361)	(6.382)

B. Pairwise Choices Between Compound Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.205	-0.487			
	(0.585)	(0.302)			
stage	0.0269	-0.103			
	(0.0317)	(0.0152)			
wave2*stage	-0.00278	0.0627			
	(0.0382)	(0.0212)			
male	0.0897	-0.160			
	(0.377)	(0.0935)			
cognition	-0.940	-0.302			
	(0.402)	(0.0880)			
extraversion	0.820	-0.0153			
	(0.402)	(0.0881)			
agreeableness	0.250	0.0929			
	(0.352)	(0.0847)			
conscientiousness	0.302	0.0737			
	(0.432)	(0.0896)			
emotional stability	-0.601	0.0678			
	(0.392)	(0.0896)			
open to experience	-0.284	-0.0875			
	(0.359)	(0.0870)			
constant	-0.733	1.279	4.200	2.803	2.573
	(0.762)	(0.322)	(2.125)	(2.785)	(2.276)

C. Pairwise Choices Between Reduced Simple Lotteries

	(1)	(2)	(3)	(4)	(5)

	ln(CRRA)	ln(SD(error))	σ_v^2	$\sigma_{\eta_1}^2$	$\sigma_{\eta_2}^2$
wave2	0.228	-0.531			
	(0.439)	(0.252)			
stage	-0.0390	-0.109			
	(0.0339)	(0.0153)			
wave2*stage	0.0253	0.0516			
	(0.0395)	(0 0208)			
male	0.0137	-0.304			
	(0.339)	(0.0915)			
cognition	-0.895	-0.165			
	(0.370)	(0.0859)			
extraversion	0.793	-0.0903			
	(0.371)	(0.0846)			
agreeableness	0.190	0.0594			
	(0.319)	(0.0833)			
conscientiousness	0.270	0.121			
	(0.357)	(0.0864)			
emotional stability	-0.397	0.0175			
	(0.348)	(0.0883)			
open to experience	-0.196	-0.133			
	(0.325)	(0.0857)			
constant	-0.533	1.429	3.552	2.708	2.084
	(0.596)	(0.293)	(1.698)	(2.231)	(1.604)

Note: Wave 1+2 sample. #Obs is 21,330 choices. Standard errors in parentheses. The variables *cognition, extraversion, agreeableness, conscientiousness, emotional stability,* and *open to experience* are dummy variables that are equal to 1 if the participant scored above median in the respective measures of psychological characteristics and 0 otherwise. In panels A, B, and C, respectively, the difference between $\sigma_{\eta_1}^2$ (columns 4) and $\sigma_{\eta_2}^2$ (columns 5) is 5.170 (SE = 8.044), -0.230 (SE = 4.321), and -0.625 (SE = 3.167).

Table E.8c: Heterogeneity by rightside-up vs. upside-down randomization.

A. Pairwise Choices Between Complete Strategies

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	1.258	-0.879			
	(1.266)	(0.565)			
stage	0.0212	-0.0748			
	(0.0539)	(0.0227)			
wave2*stage	-0.0266	0.0549			
	(0.0591)	(0.0306)			
upside down	-0.00356	0.171			
	(0.495)	(0.122)			
upside down*wave2	-0.566	0.131			
	(0.586)	(0.174)			
upside down*stage	-0.0556	-0.0345			
	(0.0786)	(0.0304)			
upside down*wave2*stage	0.0808	0.00168			
	(0.0876)	(0.0419)			
constant	-1.402	1.236	4.892	8.403	0.627
	(1.210)	(0.476)	(2.899)	(10.426)	(3.049)

B. Pairwise Choices Between Compound Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.430	-0.619			
	(0.826)	(0.461)			
stage	0.0620	-0.0943			
	(0.0488)	(0.0219)			
wave2*stage	-0.0292	0.0675			
	(0.0566)	(0.0298)			
upside down	-0.280	0.0264			
	(0.383)	(0.118)			
upside down*wave2	-0.139	0.105			
	(0.486)	(0.169)			
upside down*stage	-0.0550	-0.0121			
	(0.0629)	(0.0298)			
upside down*wave2*stage	0.0386	-0.0149			
	(0.0745)	(0.0418)			
constant	-0.809	1.109	4.425	3.356	1.678
	(0.688)	(0.346)	(2.123)	(4.033)	(2.842)

C. Pairwise Choices Between Reduced Simple Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.250	-0.495			
	(0.734)	(0.440)			
stage	0.0254	-0.109			
	(0.0473)	(0.0232)			
wave2*stage	-0.0283	0.0571			
	(0.0565)	(0.0299)			
upside down	-0.0163	-0.0434			

	(0.338)	(0.117)			
upside down*wave2	-0.206	0.0803			
	(0.453)	(0.165)			
upside down*stage	-0.0811	-0.00193			
	(0.0657)	(0.0306)			
upside down*wave2*stage	0.0653	-0.00877			
	(0.0787)	(0.0413)			
constant	-0.601	1.191	3.853	2.239	2.434
	(0.566)	(0.315)	(1.787)	(2.802)	(2.969)

Note: Wave 1+2 sample. #Obs is 21,330 choices. Standard errors in parentheses. The variable *upside down* is a dummy variable that is 1 if the decision trees were depicted upside down and 0 otherwise. In panels A, B, and C, respectively, the difference between $\sigma_{\eta_1}^2$ (columns 4) and $\sigma_{\eta_2}^2$ (columns 5) is -7.776 (SE = 13.103), -1.678 (SE = 6.483), and 0.195 (SE = 5.367). Furthermore, we ran likelihood ratio tests and found that adding variables related to the orientation of decision trees (*upside down*, *upside down*wave*, *upside down*stage*, *upside down*wave2*stage*) does not significantly improve the goodness-of-fit of the model in panel A ($p > 0.9999$), panel B ($p > 0.9999$), or panel C ($p > 0.9999$).

Table E.8d: Heterogeneity by randomization to receive text-based, binary hypothetical risky choices during part 1 or part 5 of the experiment.

A. Pairwise Choices Between Complete Strategies

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.784	-0.745			
	(1.066)	(0.560)			
stage	-0.0627	-0.0994			
	(0.0549)	(0.0213)			
wave2*stage	0.0624	0.0563			
	(0.0607)	(0.0295)			
calibration	-0.727	0.159			
	(0.586)	(0.121)			
calibration*wave2	0.196	-0.0486			
	(0.656)	(0.173)			
calibration*stage	0.108	0.00452			
	(0.0882)	(0.0302)			
calibration*wave2*stage	-0.0979	0.00858			
	(0.0964)	(0.0418)			
constant	-0.986	1.231	5.014	7.631	0.921
	(0.990)	(0.465)	(2.939)	(9.496)	(3.201)

B. Pairwise Choices Between Compound Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.480	-0.637			
	(0.801)	(0.467)			
stage	0.00807	-0.117			
	(0.0388)	(0.0214)			
wave2*stage	0.0168	0.0933			
	(0.0472)	(0.0299)			
calibration	-0.346	0.0986			
	(0.387)	(0.117)			
calibration*wave2	-0.346	0.203			
	(0.514)	(0.169)			
calibration*stage	0.0444	0.0276			
	(0.0617)	(0.0297)			
calibration*wave2*stage	-0.0434	-0.0572			
	(0.0744)	(0.0418)			
constant	-0.793	1.073	4.686	3.082	1.965
	(0.671)	(0.344)	(2.268)	(3.950)	(3.143)

C. Pairwise Choices Between Reduced Simple Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.333	-0.459			
	(0.680)	(0.440)			
stage	-0.0215	-0.118			
	(0.0411)	(0.0217)			
wave2*stage	0.0103	0.0554			
	(0.0505)	(0.0288)			

calibration	-0.130	0.0840			
	(0.336)	(0.116)			
calibration*wave2	-0.453	0.0653			
	(0.470)	(0.163)			
calibration*stage	0.000828	0.0119			
	(0.0599)	(0.0303)			
calibration*wave2*stage	-0.00370	-0.00212			
	(0.0748)	(0.0411)			
constant	-0.541	1.121	3.949	2.106	2.611
	(0.537)	(0.312)	(1.841)	(2.754)	(3.117)

Note: Wave 1+2 sample. #Obs is 21,330 choices. Standard errors in parentheses. The variable *calibration* is a dummy variable that is 1 if the text-based, binary hypothetical risky choices ("calibration questions") were asked in part 5 of the experiment and 0 if in part 1. In panels A, B, and C, respectively, the difference between $\sigma^2_{\eta_1}$ (columns 4) and $\sigma^2_{\eta_2}$ (columns 5) is -6.710 (SE = 12.263), -1.116 (SE = 6.687), and 0.504 (SE = 5.471). Furthermore, we ran likelihood ratio tests and found that adding variables related to calibration questions (*calibration*, *calibration*wave2*, *calibration*stage*, *calibration*wave2*stage*) does not improve the goodness-of-fit of the model in panel A ($p > 0.9999$), panel B ($p > 0.9999$), or panel C ($p > 0.9999$).

Table E.8e: Heterogeneity by randomization to cut-in-half monetary levels.

A. Pairwise Choices Between Complete Strategies

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.829	-0.739			
	(1.173)	(0.548)			
stage	0.0149	-0.110			
	(0.0511)	(0.0213)			
wave2*stage	0.0134	0.0816			
	(0.0593)	(0.0286)			
cut in half	-0.0815	-0.201			
	(0.4718)	(0.121)			
cut in half*wave2	-0.0739	0.00723			
	(0.576)	(0.176)			
cut in half*stage	-0.0576	0.0296			
	(0.0760)	(0.0302)			
cut in half*wave2*stage	0.0119	-0.0476			
	(0.0867)	(0.0421)			
constant	-1.246	1.389	4.837	7.218	1.260
	(1.088)	(0.452)	(2.833)	(8.900)	(3.270)

B. Pairwise Choices Between Compound Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.610	-0.504			
	(0.882)	(0.463)			
stage	0.0684	-0.127			
	(0.0486)	(0.0212)			
wave2*stage	-0.0400	0.0856			
	(0.0580)	(0.0289)			
cut in half	0.248	-0.275			
	(0.370)	(0.118)			
cut in half*wave2	-0.780	0.0504			
	(0.533)	(0.173)			
cut in half*stage	-0.0755	0.0501			
	(0.0638)	(0.0297)			
cut in half*wave2*stage	0.0669	-0.0462			
	(0.0768)	(0.0420)			
constant	-1.050	1.239	4.616	2.805	2.426
	(0.746)	(0.336)	(2.266)	(3.741)	(3.471)

C. Pairwise Choices Between Reduced Simple Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.483	-0.303			
	(0.701)	(0.442)			
stage	-0.0376	-0.0998			
	(0.0428)	(0.0215)			
wave2*stage	0.0215	0.0412			
	(0.0541)	(0.0286)			
cut in half	0.163	-0.00642			

	(0.334)	(0.116)			
cut in half*wave2	-0.941	-0.132			
	(0.548)	(0.166)			
cut in half*stage	0.0363	-0.0232			
	(0.0608)	(0.0303)			
cut in half*wave2*stage	-0.0295	0.0248			
	(0.0768)	(0.0412)			
constant	-0.678	1.163	4.132	1.890	3.082
	(0.572)	(0.306)	(1.968)	(2.733)	(3.607)

Note: Wave 1+2 sample. #Obs is 21,330 choices. Standard errors in parentheses. The variable *cut in half* is a dummy variable that is 1 if the monetary values were halved and 0 if they were not. In panels A, B, and C, respectively, the difference between $\sigma_{\eta_1}^2$ (columns 4) and $\sigma_{\eta_2}^2$ (columns 5) is -5.959 (SE = 11.641), -0.380 (SE = 6.753), and 1.192 (SE = 5.926). Furthermore, we ran likelihood ratio tests and found that adding variables related to monetary level (*cut in half*, *cut in half*wave2*, *cut in half*stage*, *cut in half*wave2*stage*) does not improve the goodness-of-fit of the model in panel A ($p > 0.9999$), panel B ($p > 0.9999$), or panel C ($p > 0.9999$).

Table E.8f: Heterogeneity by randomization to receive probability training during part 1 of the experiment.

A. Pairwise Choices Between Complete Strategies

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.474	-0.783			
	(1.168)	(0.550)			
stage	0.0197	-0.0669			
	(0.0530)	(0.0219)			
wave2*stage	-0.0250	0.0301			
	(0.0592)	(0.0296)			
training	-0.314	0.0227			
	(0.503)	(0.121)			
training*wave2	0.878	0.000798			
	(0.610)	(0.175)			
training*stage	-0.0556	-0.0507			
	(0.0766)	(0.0303)			
training*wave2*stage	0.0777	0.0527			
	(0.0857)	(0.0419)			
constant	-1.153	1.288	4.697	7.754	0.804
	(1.056)	(0.460)	(2.725)	(9.420)	(2.934)

B. Pairwise Choices Between Compound Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	-0.0296	-0.724			
	(0.873)	(0.458)			
stage	0.0575	-0.114			
	(0.0478)	(0.0220)			
wave2*stage	-0.0418	0.112			
	(0.0554)	(0.0302)			
training	-0.239	-0.151			
	(0.373)	(0.118)			
training*wave2	-0.769	0.364			
	(0.511)	(0.171)			
training*stage	-0.0523	0.0228			
	(0.0615)	(0.0298)			
training*wave2*stage	0.0584	-0.103			
	(0.0735)	(0.0420)			
constant	-0.792	1.186	4.265	3.146	1.863
	(0.667)	(0.339)	(2.035)	(3.777)	(2.850)

C. Pairwise Choices Between Reduced Simple Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	-0.205	-0.437			
	(0.741)	(0.430)			
stage	-0.0163	-0.104			
	(0.0410)	(0.0228)			
wave2*stage	0.00303	0.0641			
	(0.0510)	(0.0294)			
training	-0.124	0.0356			

	(0.327)	(0.117)			
training*wave2	0.655	0.0473			
	(0.480)	(0.166)			
training*stage	-0.00743	-0.0118			
	(0.0584)	(0.0306)			
training*wave2*stage	0.00800	-0.0273			
	(0.0727)	(0.0414)			
constant	-0.497	1.117	3.677	2.040	2.559
	(0.514)	(0.304)	(1.683)	(2.555)	(2.927)

Note: Wave 1+2 sample. #Obs is 21,330 choices. Standard errors in parentheses. The variable *training* is a dummy variable that is 1 if the participant did not receive the probability training in part 1 (and took the probability quiz in part 5) and 0 if the participant received both probability training and quiz in part 1. In panels A, B, and C, respectively, the difference between $\sigma_{\eta_1}^2$ (columns 4) and $\sigma_{\eta_2}^2$ (columns 5) is -6.950 (SE = 11.954), -1.283 (SE = 6.214), and 0.518 (SE = 5.087). Furthermore, we ran likelihood ratio tests and found that adding variables related to training (*training*, *training*wave2*, *training*stage*, *training*wave2*stage*) does not improve the goodness-of-fit of the model in panel A ($p > 0.9999$), panel B ($p > 0.9999$), or panel C ($p > 0.9999$).

Table E.8g: Heterogeneity by randomization of the order in which the frames were presented.

A. Pairwise Choices Between Complete Strategies	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$	B. Pairwise Choices Between Compound Lotteries	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	1.375	-0.640					0.880	-0.397			
	(1.432)	(0.570)					(1.223)	(0.503)			
stage	-0.0976	-0.0823					0.0792	-0.109			
	(0.0841)	(0.0260)					(0.0693)	(0.0267)			
wave2*stage	0.0802	0.0481					-0.0349	0.0462			
	(0.0918)	(0.0357)					(0.0828)	(0.0369)			
alpha	0.989	0.0617					1.082	-0.135			
	(0.757)	(0.149)					(0.626)	(0.149)			
alpha*wave2	-1.578	-0.197					-1.479	-0.233			
	(0.872)	(0.216)					(0.770)	(0.217)			
alpha*stage	0.111	-0.00912					-0.0652	0.00606			
	(0.111)	(0.0384)					(0.0857)	(0.0384)			
alpha*wave2*stage	-0.0597	-0.00619					0.0340	0.0214			
	(0.123)	(0.0520)					(0.103)	(0.0529)			
theta	0.403	-0.115					0.872	-0.190			
	(0.610)	(0.146)					(0.569)	(0.140)			
theta*wave2	-0.357	-0.0164					-0.495	0.0178			
	(0.724)	(0.214)					(0.715)	(0.207)			
theta*stage	0.128	-0.0192					-0.0659	0.0105			
	(0.107)	(0.0362)					(0.0833)	(0.0358)			
theta*wave2*stage	-0.106	0.0266					0.0469	0.0289			
	(0.118)	(0.0506)					(0.102)	(0.0507)			
constant	-1.752	1.331	5.284	7.348	1.304		-1.696	1.278	5.230	3.078	2.788
	(1.360)	(0.468)	(3.152)	(9.380)	(3.615)		(1.039)	(0.365)	(2.725)	(4.421)	(4.225)

C. Pairwise Choices Between Reduced Simple Lotteries

	(1)	(2)	(3)	(4)	(5)

	ln(CRRA)	ln(SD(error))	σ_v^2	$\sigma_{\eta_1}^2$	$\sigma_{\eta_2}^2$
wave2	0.775	-0.592			
	(0.963)	(0.465)			
stage	-0.0241	-0.123			
	(0.0677)	(0.0271)			
wave2*stage	0.0138	0.0507			
	(0.0786)	(0.0360)			
alpha	0.934	-0.395			
	(0.531)	(0.147)			
alpha*wave2	-1.415	0.299			
	(0.689)	(0.207)			
alpha*stage	0.0170	0.0330			
	(0.0825)	(0.0384)			
alpha*wave2*stage	-0.00821	0.00142			
	(0.101)	(0.0511)			
theta	0.847	-0.227			
	(0.516)	(0.140)			
theta*wave2	-0.563	0.318			
	(0.656)	(0.203)			
theta*stage	0.00181	0.00599			
	(0.0836)	(0.0370)			
theta*wave2*stage	-0.0188	0.000490			
	(0.102)	(0.0506)			
constant	-1.285	1.401	4.292	2.143	3.010
	(0.810)	(0.329)	(2.092)	(3.026)	(3.694)

Note: Wave 1+2 sample. #Obs is 21,330 choices. Standard errors in parentheses. There were three orders of frames: 1 up to 7, 7 down to 1, or a random order. The variable *alpha* is a dummy variable that is 1 if the order of the frames was 1 up to 7, and 0 otherwise. The variable *theta* is a dummy variable that is 1 if the order of the frames was 7 down to 1, and 0 otherwise. panels A, B, and C, respectively, the difference between $\sigma_{\eta_1}^2$ (columns 4) and $\sigma_{\eta_2}^2$ (columns 5) is -6.044 (SE = 12.436), -0.290 (SE = 8.097), and 0.867 (SE = 6.264). Furthermore, we ran likelihood ratio tests and found that adding variables related to the order in which the frames were presented (*alpha*, *alpha*wave2*, *alpha*stage*, *alpha*wave2*stage*, *theta*, *theta*wave2*, *theta*stage*, *theta*wave2*stage*) does not improve the goodness-of-fit of the model in panel A ($p > 0.9999$), panel B ($p > 0.9999$), or panel C ($p > 0.9999$).

Table E.8h: Restricted to choices of C vs. D or E vs. F.

A. Pairwise Choices Between Complete Strategies

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	-0.0631	-0.316			
	(1.869)	(0.766)			
stage	-0.0616	-0.0837			
	(0.0710)	(0.0257)			
wave2*stage	0.0586	0.0424			
	(0.0863)	(0.0356)			
constant	-1.322	1.426	6.716	7.258	8.552
	(1.319)	(0.542)	(5.519)	(12.117)	(13.803)

B. Pairwise Choices Between Compound Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	0.463	-0.577			
	(1.556)	(0.666)			
stage	0.0125	-0.104			
	(0.0620)	(0.0251)			
wave2*stage	0.0415	0.0497			
	(0.0758)	(0.0349)			
constant	-1.419	1.468	6.439	8.327	2.940
	(1.340)	(0.531)	(4.558)	(12.547)	(6.185)

C. Pairwise Choices Between Reduced Simple Lotteries

	(1) ln(CRRA)	(2) ln(SD(error))	(3) σ_v^2	(4) $\sigma_{\eta_1}^2$	(5) $\sigma_{\eta_2}^2$
wave2	-0.00249	-0.311			
	(0.956)	(0.530)			
stage	0.0239	-0.136			
	(0.0535)	(0.0268)			
wave2*stage	0.00988	0.0442			
	(0.0687)	(0.0359)			
constant	-0.710	1.384	3.759	2.890	4.195
	(0.682)	(0.372)	(2.160)	(3.764)	(4.939)

Note: Wave 1+2 sample, restricted to subsamples involving choices of C vs. D or E vs. F. #Obs is 17,010 choices. Standard errors in parentheses. In panels A, B, and C, respectively, the difference between $\sigma_{\eta_1}^2$ (columns 4) and $\sigma_{\eta_2}^2$ (columns 5) is 1.293 (SE = 22.736), -5.387 (SE = 17.474), and 1.305 (SE = 7.814).

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Web Appendix F. Formal Analysis of the Axioms in the Experiment

In this appendix, we formalize the axioms we used in the experiment, and we prove that they (together with completeness and continuity, which we also assume) are jointly equivalent to expected-utility maximization. Most of the work in the formalization is in writing down notation because we need to distinguish between a number of different ways of framing the decision problem, including node-wise versus pairwise choices, choices made with versus without the rest of the decision tree shown, and simple versus compound lotteries. Wherever possible, we draw on notation and definitions from the decision theory literature, as highlighted below. Although our experiment is conducted in the context of a particular decision tree (Figure 2), the formalization of the axioms and proof of expected utility in this appendix are much more general.

Our framework and results draw most heavily on Kreps and Porteus (1978), a classic paper on dynamic choice under uncertainty. Relative to Kreps and Porteus, we extend the framework to distinguish between simple and compound lotteries (as in Segal 1990) and other framing differences (as in Salant and Rubinstein 2008; Bernheim and Rangel 2009), and we modify notation a bit to facilitate these extensions.

Our axiomatization is also related to previous work linking the Independence Axiom to axioms of dynamic choice. At the end of this appendix, we relate our axiomatization to one particular, well-known such axiomatization (Karni and Schmeidler 1991, as extended by Volij 1994).

Here are the elements of our framework, together with how those elements correspond to the decisions in our experiment:

- **Time** is a finite and discrete sequence of periods during which decisions may be made: $t = 0, 1, \ldots, T$. In the experiment, there are two time periods: period 0 is age 35, and period 1 is age 50. (Although Figure 2 depicts the payoffs as occurring at age 65 and onward, we do not need to be so specific for modeling purposes; the payoffs are modeled as occurring after the period-1 choices.)

- A **payoff** is a real number z_t. The set of possible payoffs in period t is denoted $Z_t \subset \mathbb{R}$. Payoffs occur after an action is taken in period t (actions are defined below). In the master decision tree shown in Figure 2, $Z_0 = \emptyset$ because all of the payoffs are realized after age 50 (not at age 35), and $Z_1 = \{52000, 72000, 100000, 108000, 150000, 225000\}$.

Kreps and Porteus implicitly assume the Reduction of Compound Lotteries Axiom within a period, and as a result, they consider only **simple lotteries** $\Delta(Z_t)$. In the spirit of Segal (1990), we explicitly distinguish between simple lotteries and **compound lotteries**, which we denote by $\bigcup_{m=2}^{M'} \Delta^m(Z_t)$, where $M' = MT(T-1)$ and M is a finite natural number. In our experiment, Figure 1B depicts a simple lottery, while Figure 1A depicts a compound lottery.

- Decisions are made at **decision nodes**. The set of decision nodes in period t is denoted N_t. (The nodes are linked to each other in a well-defined decision tree, defined below.)

- In each period, the individual chooses an **action** d_t. In period T, the action is a simple or compound lottery over payoffs: $D_T \subset \bigcup_{m=1}^{M} \Delta^m(Z_T)$. A **decision** is a set of possible actions available at a node. The decision at time t at node $n \in N_t$ is denoted $x_{t,n} \in X_t \subset 2^{D_t}$. In periods $t < T$, the action may involve both a choice over simple or compound payoff lotteries and a choice over simple or compound lotteries about which decision to face in the next period: $D_t \subset \bigcup_{m=1}^{M} \Delta^m(Z_t) \times \bigcup_{m=1}^{M} \Delta^m(X_{t+1})$. For example, in Figure 2, there is a single node at time 0, and the decision is {the degenerate lottery yielding 100000 in period 1, a 50-50 lottery over different decisions in period 1}. For expositional purposes, we label the first of these A and the second B. If B is chosen, then the individual ends up at either of two nodes at time 1. At each, the decision is between two simple lotteries (C vs. D at one node and E vs. F at the other).

- A **decision tree**, which we denote by $\Gamma = (N_t)_t$, describes for each period t a set of nodes $N_t \subset X_t$. Each node $n \in N_t$ is in fact a decision, and we will treat nodes as decisions throughout (and abuse notation accordingly). A decision tree must originate at a single node: $|N_0| = 1$. In addition, for each node $n \in N_t$ at period $t > 0$, then there must be a node $m \in N_{t-1}$ in the previous period that allows for an action that leads to n with positive probability: for any $n \in N_t$ in period $t > 0$, there exists $m \in N_{t-1}$ with $d \in m$ such that $d(n) > 0$.

- The **history** h at period t describes the set of decisions faced and actions taken up to that period (or equivalently, the sequence of nodes and the actions linking the nodes). The set of possible histories at period 0 is just the set of possible decisions faced in period 0, $H_0 := X_0$ (this set will contain more than one element if more than one decision tree is possible). In subsequent periods $t = 1, 2, \ldots, T$, the set of possible histories is defined recursively as $H_t := H_{t-1} \times (D_{t-1} \times X_t)$. Note that both decisions and actions are included in the history because it is possible (although not true in any of the decision trees in our experiment) that more than one sequence of actions in earlier periods could lead to the same decision in period t. We define the set of possible histories at "period $T + 1$" in order to capture the action chosen in period T, $H_{T+1} := H_T \times D_T$. The set of all histories is denoted $H = \bigcup_{s=0}^{T+1} H_s$.

Because a history is just a sequence of decisions and actions, it can describe a sequence that is not feasible in some particular decision tree (for this reason, the decision tree is not specified in many of the axioms below; the axioms impose restrictions on behavior across possible decision trees). For a given decision tree Γ, we will denote by h_0 the initial history, which is precisely the initial decision faced by the decision maker in decision tree Γ. Conditional on a particular decision tree, a history defines a "subtree," the decision tree that begins from that point.

In some cases, after an action is taken, more than one subsequent node has positive probability. For example, in Figure 2, after choosing B, there is a 50% chance of facing the C vs. D decision and a 50% chance of facing the E vs. F decision. We describe the history at that "chance node" (which is not technically a node according to our definition) as including the decision faced in period 0 (A vs. B) and the action taken in period 0 but not the decision faced in period 1.

- A **complete contingent action plan** is a function $p: N_t \to D_t$ that prescribes, for every period t and every node $n \in N_t$, a feasible decision $p(n) \in n$. We denote the set of possible complete contingent action plans in decision tree Γ by $\mathcal{P}(\Gamma)$, and we denote the set of possible complete contingent action plans in decision tree Γ starting at history $h \in H_t$ by $\mathcal{P}_h(\Gamma)$. (Kreps and Porteus do not define complete contingent action plans, but we will need them to formalize our frames and axioms.)

- The **temporal compound lottery** associated with complete contingent action plan p for the decision tree $\Gamma = (N_t)_t$, denoted $\Gamma^*(p)$, is a decision tree $(M_t)_t$ such that for all periods t and all nodes $m \in M_t$, there exists $n \in N_t$ such that $m = \{p(n)\}$. In words, the temporal compound lottery $\Gamma^*(p)$ is the probability tree (a trivial decision tree) derived by taking the original decision tree Γ and retaining only the single action at each node chosen by the complete contingent action plan p. (Kreps and Porteus call $\Gamma^*(p)$ a "temporal lottery," but we include the word "compound" because, unlike Kreps and Porteus, our setup does not presuppose the Reduction of Compound Lotteries Axiom.) We denote the set of all temporal compound lotteries for decision tree Γ by $\mathcal{g}(\Gamma) = \Gamma^*\big(\mathcal{P}(\Gamma)\big)$.

- Denote by $\mathcal{g}(\Gamma, t)$ the set of temporal compound lotteries for decision tree Γ whose uncertainty is completely realized by period t. That is, after period t all actions are degenerate probability distributions. The **temporal compound lottery resolving in period t** associated with complete contingent action plan p for the decision tree $\Gamma = (N_t)_t$ with $\Gamma^*(p) \in \mathcal{g}(\Gamma, t)$, which we denote by $\Gamma^t(p)$, is a decision tree $(M_t)_t$ such that (i) for all t, $|M_t| = 1$, (ii) for all $s \neq t$ and all $m \in M_s$, $|m| = 1$, and (iii) $m \in M_t$ is a compound lottery with the same uncertainty resolution and payoffs as $\Gamma^*(p)$. In words, the temporal compound lottery resolving in period t, $\Gamma^t(p)$, is derived by taking a temporal compound lottery that has all of its uncertainty realized in period t or earlier and putting all the uncertainty (and its resolution) in period t. Before and after period t, the temporal compound lottery resolving in period t is a degenerate probability tree, where each node has just one possible action, which leads to the next node. (Kreps and Porteus define a concept with a similar name, a "temporal lottery resolving in period t." We define their concept below (an element of the set $\mathcal{g}_t(\Gamma, h)$, also defined below) without naming it, prior to stating Axiom KP5.1.)

- The **temporal simple lottery resolving in period t** associated with complete contingent action plan p for the decision tree $\Gamma = (N_t)_t$ with $\Gamma^*(p) \in \mathcal{g}(\Gamma, t)$, denoted $\Gamma^t_{simple}(p)$, is the temporal compound lottery resolving in period t with the compound lottery replaced by its reduced simple lottery. (Since Kreps and Porteus implicitly assume the Reduction of Compound Lotteries Axiom in their setup, they do not define temporal simple lotteries separately from temporal compound lotteries.)

We need to go beyond Kreps and Porteus's framework in order to capture frames where the individual is restricted to thinking about some part of the decision tree (as in Figures 3A and 3C) or where the individual is making pairwise choices between complete contingent action plans (as in Figures 2 and 3D) rather than making nodewise decisions. As far as we know, there is no existing decision-theoretic framework for describing these frames. Therefore, following

Salant and Rubinstein (2008) and Bernheim and Rangel (2009), we adopt the modeling trick of simply using a number ϕ to index what we call **context frames**:

No context ($\phi = 0$): The individual chooses an action while restricted to thinking about the current decision and its future consequences, without any knowledge of the history up to the current decision (or paths foregone). The frame "Single Action in Isolation" is the only $\phi = 0$ frame in the experiment.

Full context, nodewise decisions ($\phi = 1$): The individual is aware of the entire decision tree and chooses an action at each node. The $\phi = 1$ frames in the experiment are "Single Action with Backdrop," "Two Contingent Actions with Backdrop," and "Complete Contingent Action Plan."

Full context, pairwise decisions ($\phi = 2$): The individual is aware of the entire decision tree and makes pairwise decisions between complete contingent action plans. The $\phi = 2$ frames in the experiment are "Pairwise Choices Between Complete Strategies," "Pairwise Choices Between Compound Lotteries," and "Pairwise Choices Between Reduced Simple Lotteries."

To allow for the possibility that the individual violates the axioms we study in the experiment, we define the individual's **preference relation** $\succcurlyeq_h^\phi$ as a function of both the history $h \in H_t$ (as in Kreps and Porteus) at some period t and also the context frame ϕ. The relations $\succ_h^\phi$ and $\sim_h^\phi$ are derived from $\succcurlyeq_h^\phi$ in the usual way. These preference relations are meant to capture revealed preferences; for example, the choices made in our experiment.

In the experiment, the **nodewise frames** require choices of an action at one or more nodes, whereas **pairwise frames** require a choice between two complete contingent action plans. Correspondingly, we allow for preference relations that rank actions (context frames 0 and 1) *and* preference relations that rank complete contingent action plans (context frames 1 and 2); our framework does not require that these two types of preference relations agree. Since it will be clear from context which preference relation is being described, we use the same notation $\succcurlyeq_h^\phi$ for both.

Although actions are defined above as probability distributions over payoffs and subsequent decisions, we will omit writing out the probability distribution when the action yields some subsequent decision and/or payoff with certainty. For example, in the statement of Axiom KP3.1 below, "$(z, x) \succcurlyeq_h^1 (z, x')$" means that the action yielding payoff z and subsequent decision x with certainty is preferred to the action yielding payoff z and subsequent decision x' with certainty.

Axiom 0 is a preliminary assumption.

Axiom 0 (Completeness, Transitivity, and Continuity): For both preference relations over actions and over complete contingent action plans, and for all $t, h \in H_t$, and ϕ the preference relation $\succcurlyeq_h^\phi$ is complete, transitive, and continuous.

While we test transitivity directly in our experiment, we assume completeness and continuity.

Axiom 1 states that the individual has the same preferences in the frame "Single Action in Isolation" (Figure 3A) as in the frame "Single Action with Backdrop" (Figure 3B). Since the

former is the context frame $\phi = 0$ and the latter is $\phi = 1$, the axiom simply says that preferences over actions are same across these two context frames.

Axiom 1 (Irrelevance of Background Counterfactuals): Let $h \in H_t$ with $d, d' \in D_t$. Then $d \succcurlyeq_h^0 d'$ if and only if $d \succcurlyeq_h^1 d'$.

Axiom 2 states that the individual has the same preferences over actions in the frame "Single Action with Backdrop" (Figure 3B) as in the frame "Two Contingent Actions with Backdrop" (Figure 3C). To formalize the latter frame in our framework, we think of the individual as making the C vs. D decision at the "chance node," where it is still uncertain whether the individual will face the C vs. D decision or the E vs. F decision.

Axiom 2 (Simple Actions = State-Contingent Actions): Let $h = (h_{t-1}, d_{t-1}, x_t) \in H_t$ such that $d_{t-1}(x_t) \in (0,1)$, and $d, d' \in x_t$. Then $d \succcurlyeq_h^1 d'$ if and only if $d \succcurlyeq_{(h_{t-1}, d_{t-1})}^1 d'$.

In Axiom 2, the history h occurs at the decision x_t where the individual is choosing between d and d', while the history (h_{t-1}, d_{t-1}) refers to the "chance node" at which x_t is just one of the possible decisions the individual may face.

Axiom 3 states that the individual has the same preferences in the frame "Two Contingent Actions with Backdrop" (Figure 3C) as in the frame "Complete Contingent Action Plan" (Figure 1). As described above, the former frame is modeled as the individual making the C vs. D decision before knowing if she will face the C vs. D or the E vs. F decision. We model the latter frame as the individual choosing a complete contingent action plan.

Axiom 3 (Irrelevance of Counterfactual Choices): Let $h \in H_t$, $h' = (h, d_t, x_{t+1}) \in H_{t+1}$, and $d, d' \in x_{t+1}$. Then $d \succcurlyeq_{(h, d_t)}^1 d'$ if and only if $p \succcurlyeq_h^1 p'$ for any $p, p' \in \mathcal{P}_h(\Gamma)$ with $p = p'$ except $p(h') = d$ and $p'(h') = d'$.

To apply the axiom to the frames in our experiment, we impose $t = 0$ so that the complete contingent action plans p and p' are chosen in period 0, while the choice between actions d and d' is made at the "chance node" before the period-1 decision is known (as in the discussion of Axiom 2 above).

As we highlight in the paper (and in the name "Irrelevance of Counterfactual Choices"), Axiom 3 rules out anticipated regret and counterfactual reference points as influences on choices. In our experiment, when an individual chooses a complete contingent action plan (in the frame "Complete Contingent Action Plan"), the individual's choice for C vs. D and E vs. F is in the context of having foregone the payoff from A. When the individual makes the C vs. D and E vs. F choices separately (in the frame "Two Contingent Actions with Backdrop"), it is less salient that the individual must have foregone the payoff from A to end up at those nodes. The axiom says that the choices in the two frames must agree.

Axiom 4 states that the individual has the same preferences in the frame "Complete Contingent Action Plan" (Figure 1) as in the frame "Pairwise Choices Between Complete Strategies" (Figure 3D).

Axiom 4 (Shift from Nodewise to Pairwise Choices): Let $h \in H_t$ with $p, p' \in \mathcal{P}_h(\Gamma)$. Then $p \succcurlyeq_h^1 p'$ if and only if $p \succcurlyeq_h^2 p'$.

This axiom simply says that individuals have the same preferences over complete contingent action plans when choosing the actions nodewise as when making pairwise choices between complete contingent action plans.

Axiom 5, which we call in the paper "Complete Strategies = Implied Lotteries," has two subcomponents, which we separately write out here as Axioms 5A and 5B. These two are conceptually distinct. We combined them in the experiment because the experiment was already quite long and because, when looking at drafts of decision screens where they were separated, we worried that in reconsiderations involving just Axiom 5B, the differences in the timing of the resolution of uncertainty may have been too subtle for experimental participants to notice. As a result, the frame "Pairwise Choices Between Complete Strategies" (Figure 3E) differs from the frame "Pairwise Choices Between Compound Lotteries" (Figure 1A) in two ways: the latter replaces all decision nodes with the choice made according to some complete contingent action plan, and it pushes all the uncertainty from age 35 to age 50. The first of these changes does not matter according to Axiom 5A, and the second change does not matter according to Axiom 5B.

Axiom 5A (Complete Strategies = Implied Temporal Compound Lotteries): Let $h \in H_t$ with $p, p' \in \mathcal{P}_h(\Gamma)$. Then $p \succcurlyeq_h^2 p'$ if and only if $\Gamma^*(p) \succcurlyeq_h^2 \Gamma^*(p')$.

Axiom 5A says that an individual's pairwise choices over complete contingent action plans coincide with their pairwise choices over the temporal compound lotteries derived from those plans.

Axiom 5B (Indifference to the Timing of the Resolution of Uncertainty in Pairwise Choices): Let $h \in H_t$ with $p, p' \in \mathcal{P}_h(\Gamma)$ and $\Gamma^*(p), \Gamma^*(p') \in \mathcal{g}(\Gamma, s)$ for some $s \geq t$. Then $\Gamma^*(p) \succcurlyeq_h^2 \Gamma^*(p')$ if and only if $\Gamma^s(p) \succcurlyeq_h^2 \Gamma^s(p')$.

Axiom 5B says that an individual's pairwise choices over the temporal compound lotteries do not depend on whether the uncertainty occurs (and is realized) at different periods in the probability tree or all in a future period $s \geq t$ after all of the uncertainty would have otherwise been realized. (Axiom 5B is related to an axiom studied by Kreps and Porteus, KP5.1, which we discuss and compare to Axiom 5B below.)

Axiom 6 is a Reduction of Compound Lotteries Axiom in which all decisions are made in the current period, but all uncertainty and payoffs are realized in a future period $s \geq t$.

Axiom 6 (Reduction of Compound Lotteries): Let $h \in H_t$ with $p, p' \in \mathcal{P}_h(\Gamma)$ and $\Gamma^*(p), \Gamma^*(p') \in \mathcal{g}(\Gamma, s)$ for some $s \geq t$. Then $\Gamma^s(p) \succcurlyeq_h^2 \Gamma^s(p')$ if and only if $\Gamma^s_{simple}(p) \succcurlyeq_h^2 \Gamma^s_{simple}(p')$.

In the remainder of this appendix, we will show that Axioms 0-6 are necessary and sufficient for an individual's preferences to be represented by a von Neumann-Morgenstern utility function that is the same in each context frame $\phi \in \{0,1,2\}$. Clearly, if an individual's preferences can be represented by a von Neumann-Morgenstern utility function that is the same in each context frame, then Axioms 0-6 are satisfied. We therefore focus on proving sufficiency of Axioms 0-6.

To prove sufficiency, we will use a result from Kreps and Porteus, which relies on three axioms we re-state here using our notation.

Axiom KP2.3 (Substitution): For all t, $h \in H_t$, and $d, d' \in D_t$ such that $d \succcurlyeq_h^1 d'$, $\alpha d + (1 - \alpha)d'' \succcurlyeq_h^1 \alpha d' + (1 - \alpha)d''$ for all $\alpha \in (0,1)$ and $d'' \in D_t$.

This first axiom, their "Substitution Axiom," is a version of the Independence Axiom defined for decision trees (as opposed to single, static decisions as in the traditional formulation) that holds separately for each time period and history.

The second of their axioms, their Axiom 3.1, states that if a payoff today and a decision tomorrow are preferred to the same payoff today and an alternative decision tomorrow, then once the payoff is realized, the preference order over decisions is maintained.

Axiom KP3.1 (Temporal Consistency): For all t, $h \in H_t$, $z \in Z_t$, and $x, x' \in X_{t+1}$, $(z, x) \succcurlyeq_h^1 (z, x')$ if and only if for all $d' \in x'$, there exists $d \in x$ such that $d \succcurlyeq_{(h, x \cup x')}^1 d'$.

In our statement of the axiom, $(h, x \cup x')$ refers to a history where the payoff (z) has occurred but either decision x or x' may still occur.

The third of their axioms, their Axiom 5.1, is an axiom about indifference to the timing of the resolution of uncertainty. It states that if two lotteries have the same distribution of payoffs, then it does not matter to the individual when the uncertainty is realized. To be specific, suppose there are no payoffs or resolutions of any uncertainty before period t, and the individual may receive either of two temporal compound lotteries whose uncertainty is realized beginning in period t. Then the individual is indifferent to being told in period t versus in period $t - 1$ which of the two lotteries they receive. To state the axiom formally, define $\mathcal{g}_t(\Gamma, h)$ to be the set of all temporal compound lotteries derived from complete contingent action plans in decision tree Γ such that no uncertainty is resolved before period t with identical histories up to $h \in H_t$. Also, for $t \geq 1$ and $k \leq t$, $h = (h_k, h_{k \to t}) \in H_t$, $q, q' \in \mathcal{g}_t(\Gamma, h)$, and $\alpha \in [0,1]$, define $(k, \alpha; q, q') \in \mathcal{g}_t(\Gamma, h_k)$ to be the temporal compound lottery formed by α-mixing q and q' in period k.

Axiom KP5.1 (Indifference to the Timing of the Resolution of Uncertainty in Nodewise Choices): For all $t \geq 1$, $h \in H_t$, $\alpha \in [0,1]$ and $q, q' \in \mathcal{g}_t(\Gamma, h)$, $(t, \alpha; q, q') \sim_{h_0}^1 (t - 1, \alpha; q, q')$.

To aid in understanding the axiom, Figure A1 illustrates the two objects, $(t, \alpha; q, q')$ and $(t - 1, \alpha; q, q')$, for a simple example where $T = 2$, $t = 1$, $\alpha = 0.3$, and q and q' are 50-50 gambles with different payoffs. Panels (a) and (b) show q and q', and panels (c) and (d) show $(t, \alpha; q, q')$ and $(t - 1, \alpha; q, q')$.

This axiom differs from our Axiom 5B in two main ways. First, we interpret Axiom KP5.1 to be an assumption about what we call nodewise choices (context frame $\phi = 1$), whereas Axiom 5B is an assumption about pairwise choices (context frame $\phi = 2$). Second, Axiom KP5.1 is a restriction on choices between realizing uncertainty in any period t versus in period $t - 1$, whereas Axiom 5B is a restriction on choices between realizing uncertainty in any combination of periods versus all in a future period $s \geq t$ after all of the uncertainty would have otherwise been realized. However, when put together with some of the other axioms, satisfying

either axiom implies that the individual is indifferent between realizing uncertainty in any two periods.

The key result from Kreps and Porteus, their Corollary 3, is the following (again, stated in our notation):

Theorem 1 (KP Corollary 3). Axioms 0, 6, KP2.3, KP3.1, and KP5.1 are necessary and sufficient for the individual's choices in context frame $\phi = 1$ to be represented by a von Neumann-Morgenstern utility function.

Our statement of the result differs slightly from that in Kreps and Porteus for three reasons. First, Kreps and Porteus define two axioms (their axioms 2.1 and 2.2) which jointly have the same content as our Axiom 0. Second, their framework assumes that lotteries within any period are simple lotteries (i.e., they implicitly assume the Reduction of Compound Lotteries Axiom within each period), while our framework explicitly allows for compound lotteries. For that reason, our statement of the result assumes Axiom 6 so that all compound lotteries can be replaced by their reduced simple lotteries. Third, their setup does not distinguish between the context frames $\phi \in \{0,1,2\}$, while ours does, and we interpret axioms KP3.1 and KP5.1 as applying to context frame $\phi = 1$. Thus, we state their conclusion as also applying to context frame $\phi = 1$.

Given this result, our key result is:

Theorem 2. Suppose Axioms 0 and 2-6 hold. Then Axioms KP2.3, KP3.1, and KP5.1 are also satisfied.

Proof. We first show that Axiom KP5.1 holds. Fix $t \geq 1$, $h = (h_{t-1}, h_{t-1 \to t}) \in H_t$, $\alpha \in [0,1]$ and $q, q' \in \mathcal{g}_t(\Gamma, h)$. Define $q_t \equiv (t, \alpha; q, q') \in \mathcal{g}_t(\Gamma, h) \subset \mathcal{g}_{t-1}(\Gamma, h_{t-1})$ and $q_{t-1} \equiv (t - 1, \alpha; q, q') \in \mathcal{g}_{t-1}(\Gamma, h_{t-1})$, two α-mixtures of q and q' that differ only in whether the individual is told which of the two lotteries they receive. Note that $q_t, q_{t-1} \in \mathcal{g}(\Gamma, T)$. Since q_t and q_{t-1} differ only in the timing of the resolution of uncertainty, and since $\Gamma^T(q_t)$ and $\Gamma^T(q_{t-1})$ push this timing to period T, $\Gamma^T(q_t) = \Gamma^T(q_{t-1})$. That is, it must be that $\Gamma^T(q_t) \sim_h^2 \Gamma^T(q_{t-1})$ for all $h \in H$. In particular, indifference holds for h_0. Applying Axioms 5B, 5A, and 4,

$$\Gamma^T(q_t) \sim_{h_0}^2 \Gamma^T(q_{t-1}) \overset{A5B}{\Longleftrightarrow} \Gamma^T(q_t) \sim_{h_0}^1 \Gamma^T(q_{t-1}) \overset{A5A}{\Longleftrightarrow} q_t \sim_{h_0}^2 q_{t-1} \overset{A4}{\Leftrightarrow} q_t \sim_{h_0}^1 q_{t-1}.$$

Thus Axiom KP5.1 holds.

We next show that Axiom KP3.1 holds. Fix $t \geq 1$, $h = (h_-, n) \in H_t$, and a node n in period t that gives payoff z and two different decisions, x and y: $n = \{(x, z), (y, z)\}$. From Axiom 0, the preferences $\succcurlyeq_h^1$ are complete and continuous, so there is a preference-maximizing element of y. Let $p, p' \in \mathcal{P}_h(\Gamma)$ such that $p(n) = (x, z)$, $p'(n) = (y, z)$, $p(n') = p'(n')$ for all $n' \neq n$, and conditional on facing the decision y, both p and p' select the preference-maximizing element of y. Applying Axioms 3-5A,

$$(x, z) \succcurlyeq_h^1 (y, z) \overset{A3}{\Leftrightarrow} p \succcurlyeq_{h_-}^1 p' \overset{A4}{\Leftrightarrow} p \succcurlyeq_{h_-}^2 p' \overset{A5A}{\Longleftrightarrow} \Gamma^*(p) \succcurlyeq_h^2 \Gamma^*(p').$$

Define Γ' to be identical to Γ except that instead of giving a choice between x and y at node n, the choice is pushed back to the following period: $n = \{(x \cup y, z)\}$. Define $q \in \mathcal{P}_h(\Gamma')$ to be the same as p except that it makes the degenerate choice of $(x \cup y, z)$ at node n and then chooses x in the following period: at node m,

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$$q(m) = \begin{cases} (x \cup y, z) & \text{if } m = n \\ p(x) & \text{if } m = x \cup y. \\ p(m) & \text{otherwise} \end{cases}$$

Define $q' \in \mathcal{P}_h(\Gamma')$ analogously for p'. By construction, $\Gamma'^*(q) = \Gamma^*(p)$ and $\Gamma'^*(q') = \Gamma^*(p')$, so $\Gamma^*(p) \succcurlyeq_h^2 \Gamma^*(p') \iff \Gamma'^*(q) \succcurlyeq_h^2 \Gamma'^*(q')$. Applying Axioms 3-5A again,

$$\Gamma'^*(q) \succcurlyeq_h^2 \Gamma'^*(q') \overset{A5A}{\iff} q \succcurlyeq_h^2 q' \overset{A4}{\iff} q \succcurlyeq_h^1 q' \overset{A3}{\iff} p(x) \succcurlyeq_{(h, x \cup x')}^1 p'(y).$$

Putting all of this together, we have shown that $(x, z) \succcurlyeq_h^1 (y, z) \iff p(x) \succcurlyeq_{(h, x \cup x')}^1 p'(y)$. By construction, $p(x) \in x$ and p' selects the maximal element of y, so for every $d' \in y$, $p(x) \succcurlyeq_{(h, x \cup x')}^1 p'(y) \succcurlyeq_{(h, x \cup x')}^1 d'$. Hence Axiom KP3.1 holds.

Finally, we show that Axiom KP2.3 is satisfied. Fix $t \geq 1$, $h \in H_{t-1}$, $h' = (h, d_{t-1}, x_t) \in H_t$, and $d, d' \in x_t$ such that $d \succcurlyeq_{h'}^1 d'$. Let $\alpha \in (0, 1)$ and $d'' \in D_t$. Define Γ^1 to be identical to Γ except at history h there is a unique action available, denoted d^1, that leads to x_t with probability α and $\{d''\}$ with probability $1 - \alpha$. Since at x_t the reduced simple lotteries implied by any complete contingent action plans are identical, it follows from Axioms 2-6 that $d \succcurlyeq_{(h, d^1, x_t)}^1 d'$. Applying Axioms 2 and 3,

$$d \succcurlyeq_{h'}^1 d' \overset{A2}{\iff} d \succcurlyeq_{(h, d^1)}^1 d' \overset{A3}{\iff} p \succcurlyeq_h^1 p'$$

for all $p, p' \in \mathcal{P}_h(\Gamma^1)$ with $p = p'$ except $p(x_t) = d$ and $p'(x_t) = d'$. Applying Axioms 4-6, $\Gamma_{simple}^{1T}(p) \succcurlyeq_h^2 \Gamma_{simple}^{1T}(p')$.

Now define Γ^2 to be identical to Γ except that at history h', x_t is replaced by $x' \equiv \{\alpha d + (1 - \alpha)d'', \alpha d' + (1 - \alpha)d''\}$. Define $q, q' \in \mathcal{P}_h(\Gamma^2)$ by $q(x') = \alpha d + (1 - \alpha)d''$ and $q'(x') = \alpha d' + (1 - \alpha)d''$ and $q = p$ at all other decisions. By construction, $\Gamma_{simple}^{1T}(p) = \Gamma_{simple}^{2T}(q)$ and $\Gamma_{simple}^{1T}(p') = \Gamma_{simple}^{2T}(q')$. Thus $\Gamma_{simple}^{2T}(q) \succcurlyeq_h^2 \Gamma_{simple}^{2T}(q')$. Applying Axioms 2-6 in reverse we have $\alpha d + (1 - \alpha)d'' \succcurlyeq_{h'}^1 \alpha d' + (1 - \alpha)d''$. Thus Axiom KP2.3 is satisfied. ∎

Given Theorem 2, we need Axioms 1 and 4 in order to extend the expected-utility representation to context frames $\phi = 0$ and $\phi = 2$.
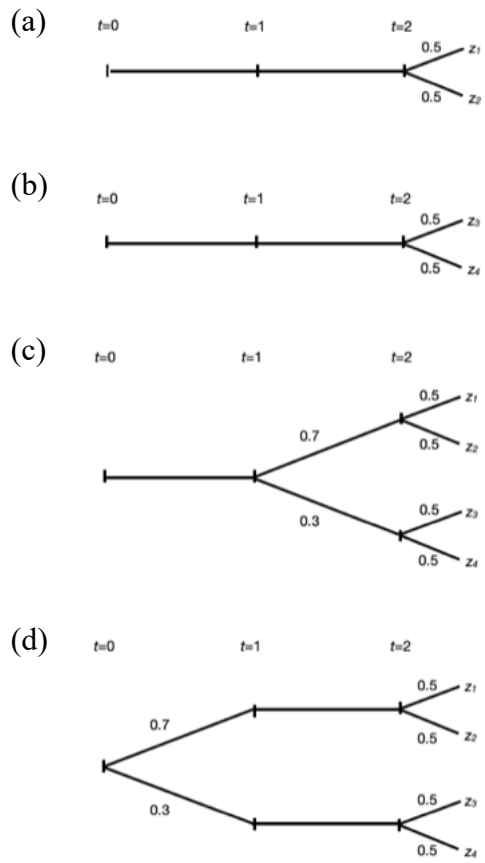
Corollary 1. Axioms 0-6 hold if and only if the individual's preference is represented by a single von Neumann-Morgenstern utility function that is the same in each context frame $\phi \in \{0, 1, 2\}$.

Proof. Theorems 2 and 1 together imply that the individual's choices in context frame $\phi = 1$ can be represented by a von Neumann-Morgenstern utility function. Axioms 1 and 4 then imply that the same von Neumann-Morgenstern utility function represents the individual's choices in context frames $\phi = 0$ and $\phi = 2$. ∎

We end this appendix by relating our axiomatization to a well-known previous axiomatization linking the Independence Axiom to axioms of dynamic choice. Specifically, Karni and Schmeidler (1991) and Volij (1994), taken together, showed that if any two of

consequentialism (roughly: choices do not depend on the past), dynamic consistency (roughly: currently optimal behavior equals planned behavior), and Reduction of Compound Lotteries is assumed, then the third is equivalent to the Independence Axiom. Their setup is in terms of compound lotteries rather than decision trees, so theirs has no notion of making a choice at a "chance node." As a result, our Axioms 2 and 3 are implicit in their setup. They assume a version of our Axiom 0. Naturally, their Reduction of Compound Lotteries Axiom corresponds to our Axiom 6. Although there is no exact correspondence, their other axioms roughly correspond to our other axioms (although some of the content of our other axioms is implicit in their setup): their dynamic consistency axiom captures a related intuition as our Axiom 4 (Shift from Nodewise to Pairwise Choices) but also captures some of our Axioms 5A (Complete Strategies = Implied Temporal Compound Lotteries) and 5B (Indifference to the Timing of the Resolution of Uncertainty in Pairwise Choices); and their consequentialism axiom captures both our Axioms 1 (Irrelevance of Background Counterfactuals) and 3 (Irrelevance of Counterfactual Choices).

Figure A1. Illustration of Axiom KP5.1

(a)

$t=0$ $\qquad$ $t=1$ $\qquad$ $t=2$

0.5 z_1

0.5 z_2

(b)

$t=0$ $\qquad$ $t=1$ $\qquad$ $t=2$

0.5 z_3

0.5 z_4

(c)

$t=0$ $\qquad$ $t=1$ $\qquad$ $t=2$

0.7

0.5 z_1

0.5 z_2

0.3

0.5 z_3

0.5 z_4

(d)

$t=0$ $\qquad$ $t=1$ $\qquad$ $t=2$

0.7

0.5 z_1

0.5 z_2

0.3

0.5 z_3

0.5 z_4

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Web Appendix G. Analysis of Reference-Dependent Preferences

      In this appendix, we begin by presenting a theoretical analysis of what violations of the Irrelevance of Counterfactual Choices axiom (relating frames 3 and 4) would be predicted by a plausible model of reference-dependent preferences. We then analyze empirically whether our data are consistent with the direction in which the model predicts violations of the axiom. We conclude that our data do not support such preferences as the primary driver of violations of the axiom, or if they do play a role, then their effect is counteracted by some other factors are also leading to violations of the axiom in the opposite direction.

      The model we study is a simple, static formulation of reference-dependent preferences over lotteries over consumption levels. We denote a lottery by the nondegenerate random variable $\tilde{c}$. We consider a reference-dependent expected utility function $E[v(\tilde{c}, r)]$, where for any realization of consumption level c,

$$v(c, r) = \begin{cases} u(c) + \eta\big(u(c) - u(r)\big) & \text{if } c \geq r \\ u(c) + \eta\lambda\big(u(c) - u(r)\big) & \text{if } c < r, \end{cases}$$

$u(\cdot)$ is a strictly increasing, concave, smooth, Bernoulli utility function; r is a non-stochastic reference level of consumption; $\eta > 0$ is the weight on the gain-loss utility; and $\lambda > 1$ is the coefficient of loss aversion. We assume $\eta\lambda < 1$.

      Our formulation of reference-dependent utility follows Kőszegi and Rabin (2006) in assuming that the magnitude of the gain-loss utility, $u(c) - u(r)$, is calculated using the "consumption utility" function $u(\cdot)$. Also like Köszegi and Rabin, we do not assume non-linear probability weighting (recall that in our experiment, the relevant lottery is 50-50). Unlike Köszegi and Rabin, we treat the reference point as deterministic and exogenous, and our proposition below is a comparative-static result about the reference point.

      We prove the following result:

Proposition: *Suppose that an individual prefers lottery $\tilde{c}$ over some safe outcome c_0 when the reference consumption level is the safe outcome $r_0 \equiv c_0$:*

  (1) $$E[v(\tilde{c}, r_0)] \geq v(c_0, r_0).$$

Then the individual prefers lottery $\tilde{c}$ over safe outcome c_0 for <u>any</u> reference level r:

  (2) $$E[v(\tilde{c}, r)] \geq v(c_0, r).$$

Moreover, if equation (1) holds with equality, then equation (2) holds with equality only for $r = r_0$.

To understand the claim in the proposition, focus first on the case in which the individual is indifferent between the safe outcome c_0 for sure and the lottery $\tilde{c}$. The proposition says that if the individual is indifferent when the reference consumption level is the safe outcome, then with any other reference consumption level, the individual would strictly prefer the lottery $\tilde{c}$. The proposition also says that if the individual strictly prefers the lottery with reference consumption level c_0, then the individual at least weakly prefers the lottery with any other reference consumption level.

We next prove this proposition, and then we turn to interpreting the proposition in light of our experiment and to empirically analyzing of whether our experimental data are consistent with the proposition.

Proof: To simplify notation, we begin with a change of variables: $x \equiv u(c)$, $m \equiv u(r)$, $\theta \equiv 1 + \eta(1 - \lambda)$ and $f(x, m)$ is defined as $v(c, r) - \eta\lambda(u(c) - u(r))$. Thus, the reference-dependent utility function can now be written as $E[f(\tilde{x}, m)]$, where

$$f(x, m) = \begin{cases} m + \theta(x - m) & \text{if } x \geq m \\ m & \text{if } x < m, \end{cases}$$

and $\theta \in (0,1)$.

With this change of variables, the proposition can now be stated as: if $E[f(\tilde{x}, m_0)] \geq f(m_0, m_0)$, then $E[f(\tilde{x}, m)] \geq f(m_0, m)$ for all m; and if the first inequality holds with equality, then the second inequality holds with equality only for $m = m_0$. For simplifications below, note that $f(m_0, m_0) = m_0$.

We will prove the first claim in the proposition by showing that

$$E\{[f(\tilde{x}, m) - f(\tilde{x}, m_0)] - [f(m_0, m) - m_0]\} \geq 0.$$

We show that this is true by computing

$$\phi(x, m, m_0) \equiv [f(x, m) - f(x, m_0)] - [f(m_0, m) - m_0] \geq 0$$

for all six orderings of m_0, m, and x:

(a) If $x \geq m \geq m_0$, then $\phi(x, m, m_0) = (1 - \theta)(m - m_0) \geq 0$.

(b) If $x \geq m_0 \geq m$, then $\phi(x, m, m_0) = 0$.

(c) If $m \geq x \geq m_0$, then $\phi(x, m, m_0) = (1 - \theta)(x - m_0) \geq 0$.

(d) If $m_0 \geq x \geq m$, then $\phi(x, m, m_0) = (1 - \theta)(m_0 - x) \geq 0$.

(e) If $m \geq m_0 \geq x$, then $\phi(x, m, m_0) = 0$.

(f) If $m_0 \geq m \geq x$, then $\phi(x, m, m_0) = (1 - \theta)(m_0 - m) \geq 0$.

Turning to the second claim in the proposition, first note that in order to be nondegenerate and initially indifferent to m_0, $\tilde{x}$ must have mass at locations strictly on both sides of m_0. Moreover, in order for $\tilde{x}$ to be indifferent to m_0, all the relevant ϕ inequalities in (a)-(f) (which involve x's on both sides of m_0) must hold with equality. This requires that $m_0 = m$. ∎

     Interpreting the proposition in terms of our experiment, we are considering a participant's preferences about two lotteries: the safe option C vs. the risky option D, and the safe option E vs. the risky option F. We are supposing that in the frame Two Contingent Actions with Backdrop (frame 3), the participant's reference point r_0 for the C vs. D choice is the payoff from C, and for the E vs. F choice, the participant's reference point r_0 is the payoff from E. In the frame Complete Contingent Action Plan (frame 4), we are supposing that when a participant chooses B over A, foregoing the payoff from A shifts the reference point for both the C vs. D and E vs. F choices to some other reference point $r \neq r_0$. The proposition states that, regardless of what this other reference point is, the participant's willingness to choose the risky options D and F should be greater in frame 4 than in frame 3.
     To empirically assess this prediction, we analyze the data shown below in Table G.1. It is a contingency table, where each row corresponds to a frame-3 and frame-4 pair of C vs. D choices, and each column corresponds to a frame-3 and frame-4 pair of E vs. F choices. Since we are interested in examining differences between frame-3 and frame-4 choices, we combine cases where the choice did not differ across frames: (C, C) and (D, D) for the row decision and (E, E) and (D, D) for the column decision. Thus, there are three rows and three columns, corresponding to a participant making: (i) a riskier choice in frame 3, (ii) equally risky choices in the two frames, and (iii) a riskier choice in frame 4. The entries in the table are frequencies of participants having that specific combination of reconsidered choices (i.e., wave-2, stage-4 choices). We also show the row and column totals, which we focus on in our analysis of the data. As in our baseline specifications throughout the paper, our main analysis is based on the wave 1+2 sample (so the entries represent the choices at the end of wave 2).

Table G.1. Safe vs. Risky Reconsidered Choices, Wave 1+2 Sample

Choices in (frame 3, frame 4):	(F, E)	(E, E) or (F, F)	(E, F)	Row Totals
(D, C)	0.4%	6.1%	0.9%	7.4%
(C, C) or (D, D)	3.5	77.8	5.2	86.5
(C, D)	0.4	3.9	1.7	6.1
Column Totals	4.3	87.8	7.8	100.0

Note: #Obs = 230 participants. Entries are wave-2, stage-4 choices. Participants that were missing these choices in frame-3 or frame-4 decisions were dropped. Percentages are rounded to the nearest 0.1% and therefore sometimes do not exactly add up to row or column totals.

     Under the hypothesis that everyone has reference-dependent preferences like those assumed in the proposition above and no response error in the reconsidered choices, we would expect zero participants in the (D, C) row and in the (F, E) column. Using two separate one-sample tests of proportions, the p-values for the null hypotheses $freq(D, C) = 0$ and $freq(F, E) = 0$ are <0.0001 and 0.0014, respectively. We conclude that this hypothesis is not supported in our data.

A more plausible hypothesis is that people have heterogeneous preferences but that reference-dependent preferences like those assumed in the proposition above are dominant on average, and there is also some response error even in the reconsidered choices. In that case, while we would expect a positive percentage of participants in the (D, C) row and in the (F, E) column, we would expect that (C, D) is more frequent than (D, C) and that (E, F) is more frequent than (F, E). From the row totals, it is clear that (C, D) is actually *less* frequent than (D, C). For the D vs. E choice, the *p*-value from a two-sample test of proportions for the null hypothesis $freq(E,F) = freq(F,E)$ is 0.1193. We conclude that the hypothesis that reference-dependent preferences like those we consider here play a dominant role in the experiment has little support.

Tables G.2 and G.3 show the same contingency table except now for two other samples: the wave 1 version 1 sample and the wave 1 version 2 sample. In both, the choices shown are the reconsidered (stage-4) choices at the end of wave 1. In both of these samples, the proportions go in the opposite direction as predicted by the proposition: (C, D) is less frequent than (D, C) *and* (E, F) is less frequent than (F, E).

Overall then, we conclude that our data are not consistent with the differences in risky choices across frames 3 and 4 predicted by the proposition above. Therefore, in our experiment, the reference-dependent preferences we consider here are not a primary driver of the violations of the Irrelevance of Counterfactual Choices axiom.

Table G.2. Safe vs. Risky Reconsidered Choices, Wave 1 Version 1 Sample

Choices in (frame 3, frame 4):	(F, E)	(E, E) or (F, F)	(E, F)	Row Totals
(D, C)	1.9%	4.9%	1.9%	8.6%
(C, C) or (D, D)	6.0	74.4	4.5	85.0
(C, D)	1.1	4.5	0.8	6.4
Column Totals	9.0	83.8	7.1	100.0

Note: #Obs = 266 participants. Entries are wave-1, stage-4 choices. Participants that were missing these choices in frame-3 or frame-4 decisions were dropped. Percentages are rounded to the nearest 0.1% and therefore sometimes do not exactly add up to row or column totals.

Table G.3. Safe vs. Risky Reconsidered Choices, Wave 1 Version 2 Sample

Choices in (frame 3, frame 4):	(F, E)	(E, E) or (F, F)	(E, F)	Row Totals
(D, C)	1.0%	6.2%	0.7%	7.9%
(C, C) or (D, D)	4.8	78.8	2.1	85.6
(C, D)	0.3	5.8	0.3	6.5
Column Totals	6.2	90.8	3.1	100.0

Note: #Obs = 292 participants. Entries are wave-1, stage-4 choices. Participants that were missing these choices in frame-3 or frame-4 decisions were dropped. Percentages are rounded to the nearest 0.1% and therefore sometimes do not exactly add up to row or column totals.

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