

Table S1. Summary of psychological experiments testing predictions of the DTM. Ps: participants. C: Caution prediction. D: Desperation prediction.

| Study                        | Sample                          | Task                                  | Implementation of threshold  | Outcome variable   | Key manipulation/comparison   | Result   |
|------------------------------|---------------------------------|---------------------------------------|--|--|---|--|
| Pietras & Hackenberg, 2001   | 3 US adults                     | Pressing buttons to accumulate points | Minimum number of points required in each block of trials in order to earn money | Choice between a button with fixed yield and one with risky yield  | Points requirement either small enough to meet with fixed button, or too large; within subjects | Ps favoured the fixed button when this would meet the block's requirement (C), and switched to the risky button when the fixed one would not (D) |
| Pietras et al., 2006         | 4 (exp 1) + 4 (exp 2) US adults | Pressing buttons to accumulate points | Minimum number of points required in each block of trials in order to earn money | Choice between working alone, which is risky, and sharing points with another participant, which reduces risk by pooling | Points requirement either small enough to meet by sharing, or too large; within subjects        | Ps favoured sharing when this led to a higher probability of meeting the points requirement (C), and working alone when it did not (D)           |
| Deditius-Island et al., 2007 | 235 US undergraduate students   | Computer choice task                  | Position relative to a fictive competitor  | Choice between a fixed and a variable option   | Ps assigned to be always ahead of or always behind the fictive competitor; between subjects     | Ps favoured the fixed option when ahead (C; both sexes) and the variable option when behind (men only; D)  |
| Pietras et al., 2008         | 8 US adults                     | Computer choice task                  | Minimum number of points required in each block of trials                        | Choice between a fixed and a variable option   | Ps assigned reserves and rate of gain sufficient for the fixed option to reach                  | Ps favoured the fixed button when this would meet the  |

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|                          |   |   | in order to earn money   |   | threshold, or not; within subjects   | block's requirement (C), and switched to the risky button when the fixed one would not (D)  |
| Mishra & Lalumière, 2010 | 115 Canadian undergraduate students                     | Computer foraging task (plus another task not discussed here)   | Minimum of apples to be gathered to 'survive the week' and earn \$2  | Choice between trees with same mean but different variances in apple number   | Ps either close or far from meeting requirement; within subjects   | The greater the probability of failing to meet requirement with low-variance tree, the greater the probability of choosing the high-variance tree (C, D).                                       |
| Searcy & Pietras, 2011   | 10 (exp 1) + 5 (exp 2) US adults                        | Pressing buttons to accumulate points   | Minimum number of points required in each block of trials in order to earn money                                       | Choice between a high variance and a low variance option (fixed option in some conditions of exp. 2)  | Points requirement either small enough to meet with low-variance button, or too large; within subjects   | Participants favoured the low variance option (C) except when this had a low probability of meeting requirement (D).  |
| Mishra et al., 2012      | 50 (exp 1) + 84 (exp 2) Canadian undergraduate students | Exp 1B: Computer foraging task (plus another task not discussed here).<br>Exp 2: Hypothetical investment task | Exp 1B: Minimum number of apples/points to be paid for experiment.<br>Exp 2: Imaginary debt that needs to be paid off. | Exp 1B: Choice between trees with same mean but different variances in apple number.<br>Exp 2: Choice between a higher risk and low risk hypothetical investment option | Exp 1B: Ps either close or far from meeting requirement; within subjects. Exp 2: Hypothetical debt either small enough or too large to be paid off with less risky investment option; within-subjects. | Exp 1B: Preference for low-variance tree (C), except when far from meeting requirement (D).<br>Exp 3: Preference for safe option (C) unless debt too large to be paid off with safe option (D). |

|                         |                                    |                                       |  |   |   |  |
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| Bennett & Pietras, 2021 | 5 (exp 1) + 8 (exp 2)<br>US adults | Pressing buttons to accumulate points | Minimum number of points required in each block of trials in order to earn money | Choice between fixed and risk option (exp 1) or lower and higher risk option (exp 2)  | Per trial 'energy cost' in points that either made it either possible or impossible to meet the minimum requirement using the fixed/lower-risk option; within-subjects      | Preference for fixed (exp 1) or low-risk (exp 2) option (C); switch to variable/high-risk option when energy cost high (D)   |
| Radkani et al., 2023    |                                    | Computer cooperation task             | Minimum number of points required in order to access a cash bonus                | Choice between working alone (no risk but unprofitable); cooperation (slightly profitable and slightly risk); or stealing from other players (highly profitable but highly risky) | Exps 1-3: Whether current points level was above minimum requirement; within subjects. Exp 4: Whether initial points level was above minimum requirement; between subjects. | Stealing rare when points level above minimum requirement (C); more common when points level below minimum requirement (D). Control conditions rule out alternative explanations (exps 2 and 3). High inequality in group produces more stealing if it entails that some players are below minimum requirement (D; exp 4). |

*Note to table S1.*

We have only included experiments in which participants made choices that could increase their (at least hypothetical) resource levels. This ruled out, studies that used DTM logic to investigate completely abstract or non-self-interested decision making (Mishra & Fiddick, 2012; Wang, 2002).

It also ruled out studies where the manipulation is a purely social construct such as social status (Mishra et al., 2014); social power (Anderson & Galinsky, 2006); or perceived relative deprivation (Callan et al., 2008). The DTM could be extended to explain effects of such psychological states on risk taking either by extending the model to cover non-material resources (see section 5.4 of the paper), or assuming that these psychological manipulations make people feel *as if* they had fewer material resources. However, since our focus here is on evidence relating to a narrow version of the DTM where the resource variable and basic needs are material, we decided not to include these studies. (Deditius-Island et al. (2007) is marginal under this criterion, but we opted to include it).

The behavioural options available had to differ in risk for amount of payoff. This excluded Pietras et al. (2003), where the options differed in their risk for temporal delay, rather than resource amount. It is also meant excluding several experiments such as Rode et al. (1999), where the critical choice is between options whose riskiness is known and options whose riskiness is unknown. These experiments found that people will accept options with unknown risk more readily when their resources are below the need threshold. Assuming that an unknown risk feels, from a psychological point of view, like a large risk, this finding is closely related to the desperation prediction.

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Table S2. Summary of choice-task studies relevant to the DTM. C: Caution prediction. D: Desperation prediction. U: U-shaped relationship between resources and risk taking.

| Study                    | Sample                      | Resource measure   | Risk measure  | Result   |
|--------------------------|-----------------------------|--|---|--|
| Dillon & Scandizzo, 1978 | 130 Brazilian small farmers | Tenure (farm owner vs. sharecropper); risky prospect (worst case outcome yields enough for subsistence or not) | Hypothetical gambles over different farm yields                                     | Sharecroppers (poorer) took more risks than owners (more affluent; D); within groups, people with higher income took more risks (C); less risk taking when subsistence at risk than when not (C) |
| Barsky et al., 1997      | 11,000 US adults            | Income and wealth  | Hypothetical gambles with large stakes (up to doubling lifetime income)             | U-shaped relationship with more risk taking by people in the lowest and the highest quintiles of income and wealth than the middle (U)   |
| (Caballero, 2010)        | 87 adults from Colombia     | Having sufficient income to avoid malnourishment, or not   | Incentivised gambles with moderate stakes (up to 23% of participants' monthly wage) | More risk taking/less risk aversion for participants just below the nutritional threshold (D)  |
| Kuznar, 2001             | 23 adult Andean herders     | Wealth in terms of livestock herd value  | Hypothetical gambles with large stakes (in the currency of livestock)               | Curvilinear relationship between wealth and risk taking, with high risk taking among the poorest and richest herders (U)   |
| (Tucker, 2012)           | 340 rural Madagascan adults | Food security (being able to consistently access adequate food)  | Incentivised gambles worth up to a day's labour                                     | More risk taking by food insecure participants, taking into account large number of other ethnic, village and economic predictors (D)  |

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|                         |   |  | equivalent   |  |
| Maertens et al., 2014   | 206 Indian farmers  | Total household wealth   | Hypothetical gambles with large stakes (in the currency of cotton yield) | U-shaped relationship with more risk taking by members of poorest and richest households (U)   |
| de Courson et al., 2025 | 232 French and 240 UK adults, repeatedly assessed over one year | Subjective perception of adequacy of resources, plus objective ratio of monthly income to monthly essential costs, plus ancillary measures of resource adequacy. | Hypothetical gambles with medium stakes (payoffs of up to 800 euro)      | The most extreme risk takers and the most extreme risk avoiders had lower resources than the intermediate risk takers; people with lower resources showed more variability in their risk taking; evidence for a broken-stick relationship between subjective resources and risk taking (negative relationship to a certain point, then positive relationship; U) |

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