

Response to “The Behavioural Constellation of Deprivation: Causes and Consequences” by
Gillian Pepper and Daniel Nettle.

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The behavioral constellation of deprivation may be best understood as risk management

Dorsa Amir¹, Matthew R. Jordan²

1. Yale University, Department of Anthropology, 10 Sachem St, New Haven, CT 06511

2. Yale University, Department of Psychology, 2 Hillhouse Ave, New Haven, CT 06511

Institutional phone numbers:

Yale Anthropology: (203) 432-3700

Yale Psychology: 203-432-4500

Email addresses:

dorsa.amir@yale.edu, matthew.jordan@yale.edu

Homepage URLs:

Dorsa Amir: <http://www.dorsaamir.com>

Matthew Jordan: <http://campuspress.yale.edu/mattjordan/>

Abstract:

While the authors make a compelling case that early life deprivation leads to present-orientation, we believe that such behaviors may be better understood in terms of an underlying risk management strategy, in which those who experience such deprivation are more risk-averse. The model we sketch accommodates the authors' present-orientation observations, and further explains differences in risk preferences and social preferences.

Main text:

Pepper and Nettle (P&N) make a compelling case for the existence of a constellation of behaviors that result from early life deprivation. This behavioral constellation of deprivation (BCD) is described in terms of intertemporal choice: in order to decide between mutually exclusive immediate and delayed rewards, one must discount future rewards to the present, then compare like with like. P&N argue that what ties early life deprivation to the BCD is a contextually appropriate increase in individuals' discount rate: those who grow up in deprived environments value a future dollar less than those who grow up in enriched environments. While changes in discount rates account for the data presented, changes in *risk* preferences—as opposed to pure time preferences—may also account for the BCD. An unwillingness to delay rewards might reflect a range of uncertainties: uncertainty that the future reward will be obtained, that the individual will be there to obtain it, that the reward will retain the same value in the future, and so on.

Managing these uncertainties is a fundamentally different problem for those living or raised in abundance and those living or raised in deprivation. For example, while small and moderate fluctuations in resources (income, calories, etc.) are unavoidable, only those at the margins feel the full effects of such fluctuations and consequently must be more attentive to variability in the environment and the downside risk of their decisions. Our risk management view of the BCD allows us to generalize P&N's model such that it makes predictions about the effects of early life deprivation in any domain in which there are effects of uncertainty that depend on SES differences. Thus, in addition to accounting for the BCD in terms of risk management rather than temporal discounting, we would like to discuss how this risk management view applies to two domains outside of intertemporal choice: laboratory-based assessments of risk preferences, and the role of social preferences in managing risk.

How does early life deprivation affect risk preferences in later life? We are careful here to distinguish between what the authors call risky behavior — activities associated with undesirable outcomes like unprotected sex — and risk acceptance — lab measures that capture willingness to accept an increase in outcome-variance in exchange for an increase in expected value; we will only be discussing the latter. While P&N say their model doesn't make predictions about such risk preferences, a risk management model does, and in a recent set of studies (Jordan, Amir, & Rand, 2017), we sought to investigate this exact question. We elicited risk preferences in two ways. The first was a series of questions that ask if the participant prefers smaller, guaranteed rewards to larger, but uncertain rewards. The second was an incentivized measure of risk, the Balloon Analog Risk Task, in which participants inflate a digital balloon and can win money with each successive pump. However, participants can only keep the money if

they cash out before the balloon pops (which increases in likelihood with each pump). Across both tasks, we find a robust relationship between childhood SES and risk acceptance, such that low childhood SES is associated with *risk aversion* over and above current SES. These results provide some evidence that risk preferences are indeed affected by early life environments. Additionally, these results highlight the relevance of thinking about early life deprivation in terms of risk management, in part because they add a decision problem to the BCD that isn't an intertemporal choice, but also because there isn't a way to translate these risk assessments into a present-future trade-off.

In addition to affecting risk preferences, differences in risk management strategies should lead to differences in social preferences. One of the most important ways in which individuals from low SES backgrounds can buffer against uncertainty is to pool the risk of income fluctuations by building reciprocity relationships—if I help you when you're in need, then you may be more likely to help me when I'm in need. Therefore, the risk management perspective predicts that those who experienced early life deprivation should be *more* cooperative because developing reciprocity relationships reduces downside risk. What does the P&N model predict about these behaviors? Conveniently, models of repeated interaction contain a parameter (δ) that has a straightforward interpretation in terms of intertemporal choice: if a decision-maker in a repeated game values the future sufficiently highly (high δ , low discount rate), they will cooperate because long-term cooperation is worth more, in virtue of the low discount rate, than defecting. Here, the two models appear to make competing predictions: the risk management model predicts more cooperation among those raised in deprivation because it manages risk, while the P&N model predicts less cooperation because the BCD is marked by a high discount

rate (low delta). To test these predictions we can look to a growing body of work which suggests that those who are currently of lower SES are more prosocial (Piff, Kraus, Côté, Cheng, & Keltner, 2010), and that this relationship is mediated by factors P&N point to as relevant to the BCD, such as locus of control (Kraus, Piff, & Keltner, 2009). Critically, however, we have found that early life deprivation is associated with greater prosociality, and explains more variance in prosocial decision-making than current SES (Jordan, Amir, & Rand, 2017). Thus, to the extent that early life deprivation leads to greater prosociality, it appears that risk management more fully accounts for the data than temporal discounting.

In sum, we believe the risk management view of early life deprivation may be a more powerful framework with which to understand the BCD. Given that intertemporal choice can be rephrased in terms of risk aversion (greater present orientation is akin to greater risk aversion), and that childhood SES is a robust predictor of risk preferences and social preferences, we believe that the BCD is best understood as a function of risk management strategies, rather than intertemporal choice per se.

References:

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