High Dispositional Mindfulness in Older Adults Predicts Change in Loss Aversion in the Iowa Gambling Task

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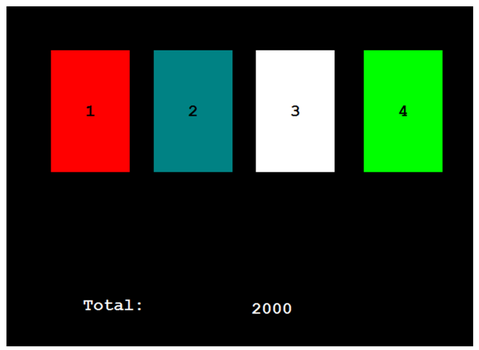
Introduction

- Many studies have found dispositional mindfulness in older adults to have beneficial effects on cognition, like decreased stress levels and its consequent benefits to executive function.[4]
- However, some existing studies find this characteristic to be detrimental to other aspects of cognition (e.g., implicit sequence learning), regardless of age.[5]
- Here, we examined the effects of dispositional mindfulness on decision making as measured by the Iowa Gambling Task (IGT).[1, 2]

Methods

- 83 older adults over the age of 65 (43 females, 40 males)
- Iowa Gambling Task[1, 2]
  - 4 decks of cards similar in size and appearance
  - $2000 endowment, 100 trials
  - Frequency of punishment:
    - Two "frequent" decks (A' and C')
    - Two "infrequent" decks (B' and D')
  - Loss aversion (avoiding decks with frequent punishment)
    - Loss aversion = (B'+D') – (A'+C')



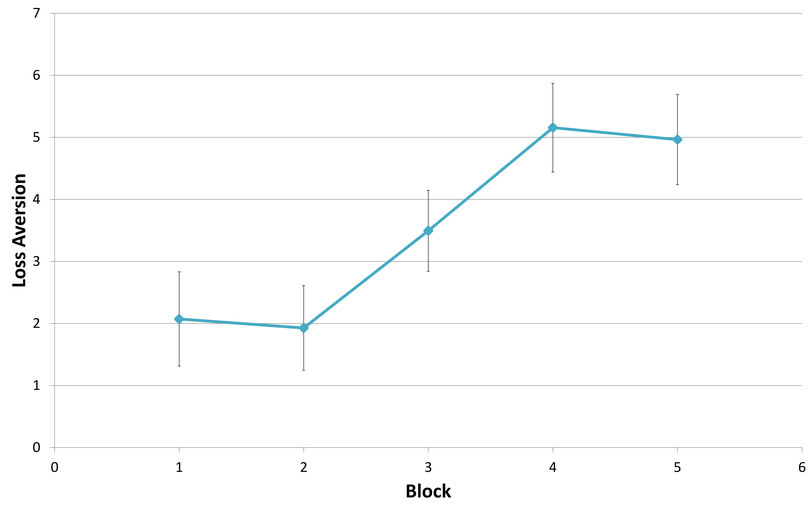
A'	B'	C'	D'
Disadvantageous	Disadvantageous	Advantageous	Advantageous
Frequent loss	Infrequent loss	Frequent loss	Infrequent loss
+100/pull	+100/pull	+$50/pull	+$50/pull
-$125/pull	-$1250 in one pull	-$25/pull	-$250 in one pull
Loss 5/10 pulls	Loss 1/10 pulls	Loss 5/10 pulls	Loss 1/10 pulls
-$1250/ten pulls	-$1250/ten pulls	+$250/ten pulls	+$250/ten pulls
Net loss $250	Net loss $250	Net gain $250	Net gain $250

- Mindfulness Attention Awareness Scale (MAAS)[3]
  - 15 item scale concerning day-to-day experiences
  - Rate how frequently or infrequently each statement is experienced
  - e.g., "I drive places on 'automatic' pilot and then wonder why I went there."
  - Likert-type scale, 1-6, 1 denotes "almost always" and 6 "almost never"

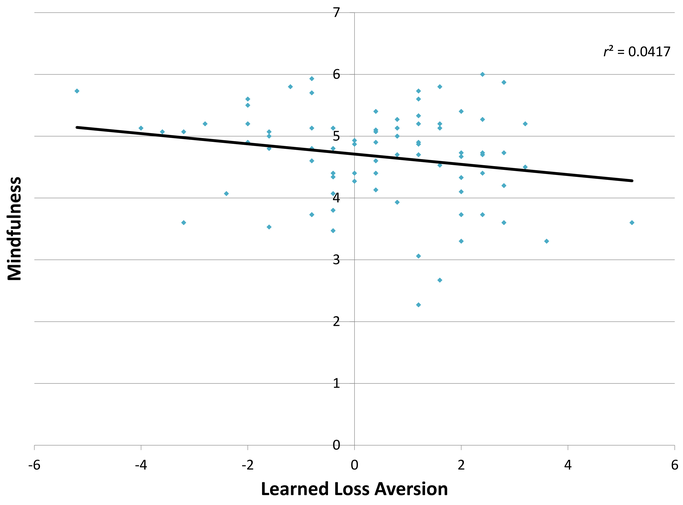
Results

- Each session was divided into five 20 card-pull blocks.
- Results demonstrate learning loss aversion.

Main effect of block:
- $F(4, 328) = 5.48$, $p < .001$, $\eta_p^2 = .063$
- Block 1 (M = 2.07)
- Block 5 (M = 4.96)



Significant negative correlation between loss aversion and dispositional mindfulness:
- n = 83, $p = .025$ **(Pearson Correlation -.246)**
- $r^2 = 0.0417$



	Mean	Std. Deviation
Age	71.7	5.6
Digit Span Forward	10.77	2.132
Digit Span Backwards	7.24	2.139
Digit Symbol Coding	61.2	15.385
Digit Symbol Pairing	10.34	4.957
Digit Symbol Recall	7.37	1.247
NAART*	9.34	6.107
MiniMental (MMSE)	29.27	1.013
MAAS	4.6772	0.77226

Neuropsych Test Scores

*n = 82

Discussion

- Older adults with higher levels of dispositional mindfulness were less likely to be sensitive to loss.
- Results were consistent with an emerging body of literature showing the tradeoffs of trait mindfulness on cognition.[5]
- Older adults with this trait might be less sensitive to the frequency of punishment in the IGT.
- Future directions: examine the relationship between dispositional mindfulness and other measures; for example, the Balloon Analogue Risk Task (BART), which assesses risk taking behavior in older adults.

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