

The psychology of Labor

Standard perspective

- The standard perspective is that employers buy the time and effort of the employees in exchange for money.
- What are some additional assumptions of this perspective?
- What are some of its implications?

Something seem to be missing

What can psychology teach us about labor?

The psychology of labor

- Relative vs absolute levels of compensations
- The relationship between payment and motivation, effort, performance
 - Low payments, high payments
- Labor & meaning
- Sabotage

Relative vs absolute levels of compensations

Relative vs absolute levels of compensations

- Person A gets \$80,000 in a company where the range is \$80,000 - \$100,000
- Person B gets \$70,000 in a company where the range is \$50,000 - \$70,000
- Who will be happier? Who will work harder? Who will stay longer with the company?
- What job will you select?

Salary & happiness

- So, happiness is at least partially determined by relative salary
- Relative to what?
- How would you order the different effects?
- What is the largest determinant of them

Implications

- How would you keep your employees happy with their salary
- How would you compensate them?
- What structural changes could you take
- How would you deal with salary decreases and retirement?

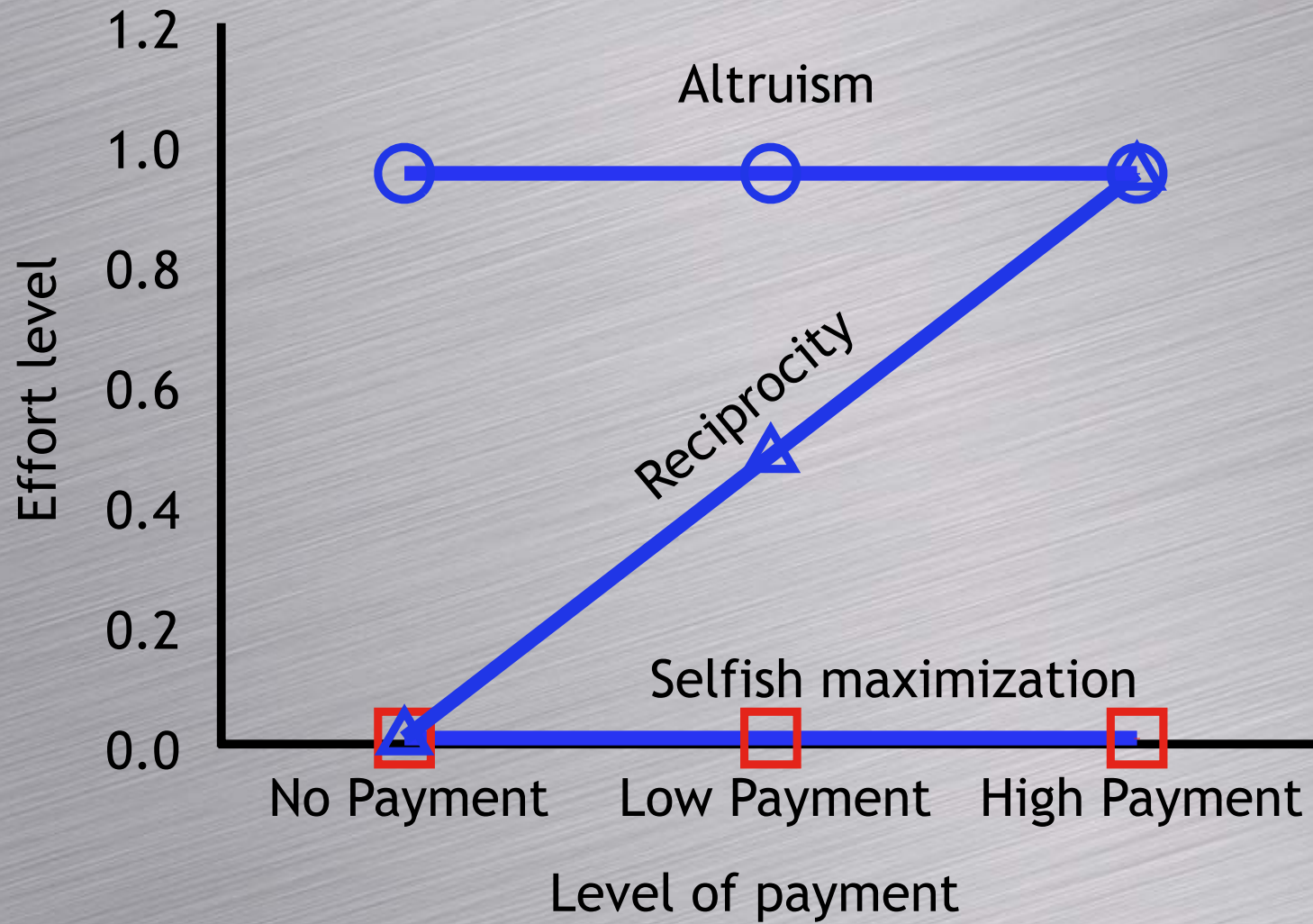
The relationship between payment and
motivation, effort, performance

At low levels of payment

A tale of 2-markets

- Imagine you are about to move to a new apartment and you need some help in packing and carrying your stuff to your new home.
 - Who to ask for help?
 - What to promise them as compensation?
- Imagine that you start a new company. How would you want to pay your employees?
Hourly? Monthly? With cash or with cash & gifts?

A few theories



Fiske's Rational theory (1992)

- Four basic types of social relationships:
 - **Communal Sharing (CS)**
 - high-level of cooperation, equal treatment of all, and “we-ness.”
 - **Authority Ranking (AR)**
 - A clear superior-subordinate relationship.
 - **Equality Matching (EM)**
 - Combine features of CS and AR relationships – they are very structured but with perfect equality.
 - **Market Pricing (MP)**
 - generally consist of on-going cost/benefit analysis and participants are paid for their labor via a wage rate that reflects the amount and quality of the work performed

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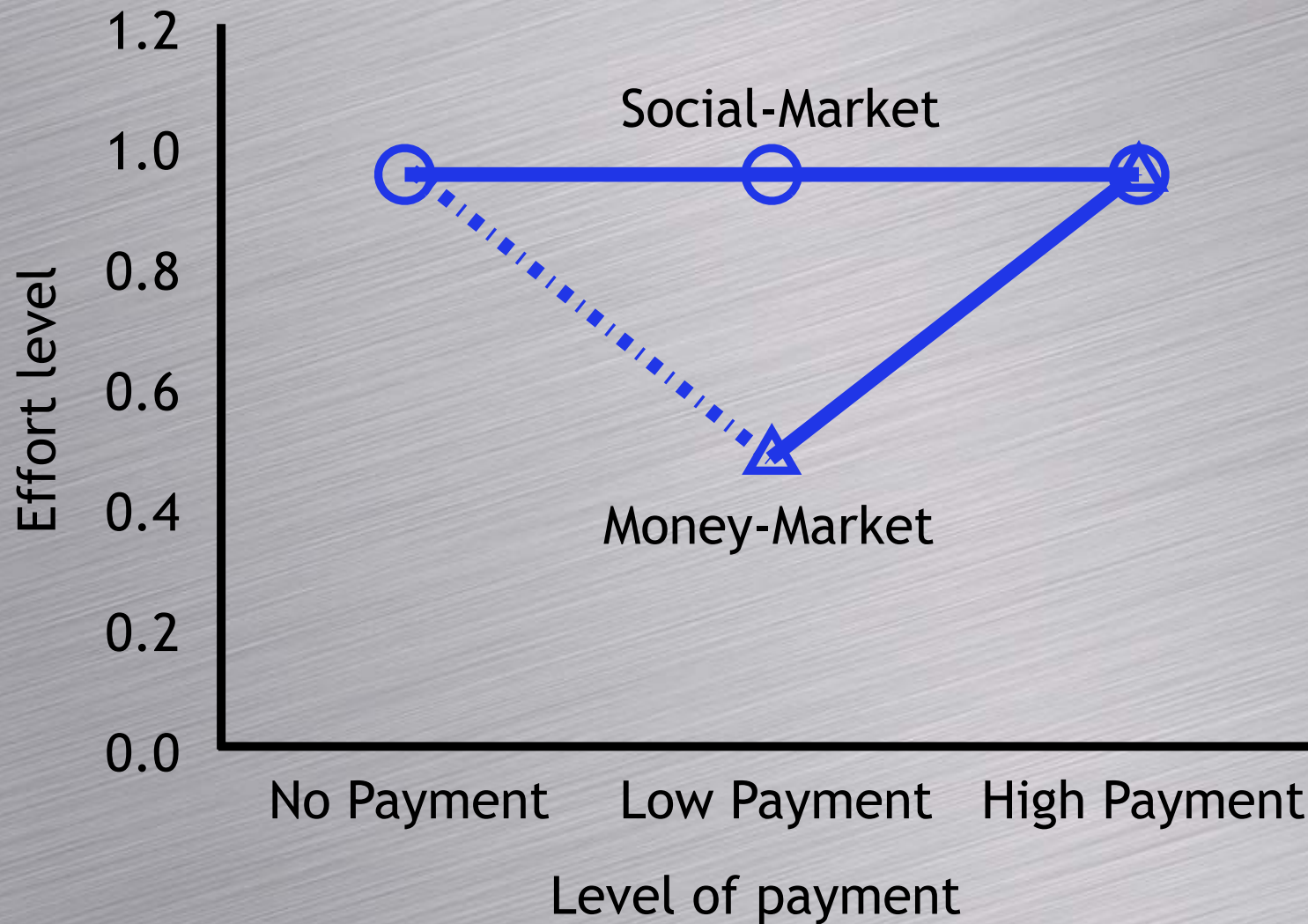
Hypotheses

- The relationship between payment and effort will depend on the type of exchange (money vs. social markets).
- In Money-Market relationships effort will be exerted according to the reciprocity theory.
- In Social-Market relationships, effort will be shaped by the altruism theory and will not be sensitive to the level of payment.

What about not paying?

- Rich background in social psychology
 - Dissonance / intrinsic & extrinsic motivation
- Plus some interest in economics (e.g Gneezy & Rustichini 2000 a & b)
 - 3 level of payments for (0, low, high):
 - Math tasks
 - Collecting donations
 - The results are V shaped and these were interpreted as incomplete contracts

Hypotheses



Two-markets

- What can shift people from one market to the other?
- In cases when both social and money aspects are present, which will “win”?
- Hypothesis:
 - Introducing monetary payments into a social exchange will cause individuals to shift from perceiving the exchange as a Social-Market to a Money-Market, and effort patterns will follow.

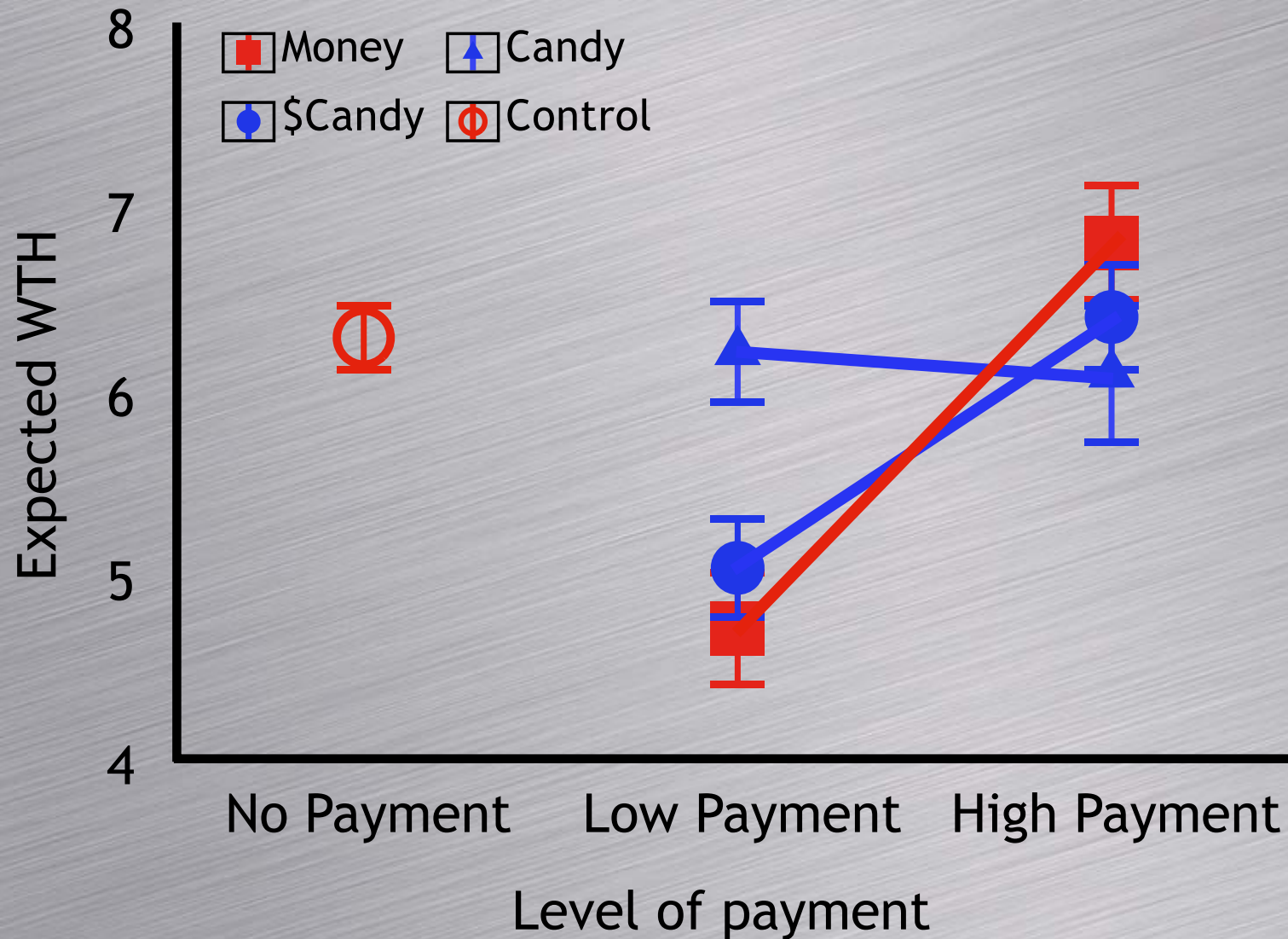
Experiment 1

- Hypothetical survey about helping to move a sofa
- Asking for willingness of other students to help on a 1-11 point scale

Design

		Form of payment		
		Cash	Candy	\$Candy
Level of payment	No	-----		
	Low	\$0.5	Candy bar	\$0.5 candy bar
	Middle	\$5	Godiva box	\$5 Godiva box

Results Exp1



Conclusion Exp 1

- All main predictions held in this hypothetical surveys
- Will they hold with real effort?

Experiment 2

- In the greatest tradition of social psychology using a mind numbingly boring task for 3 minutes

The task

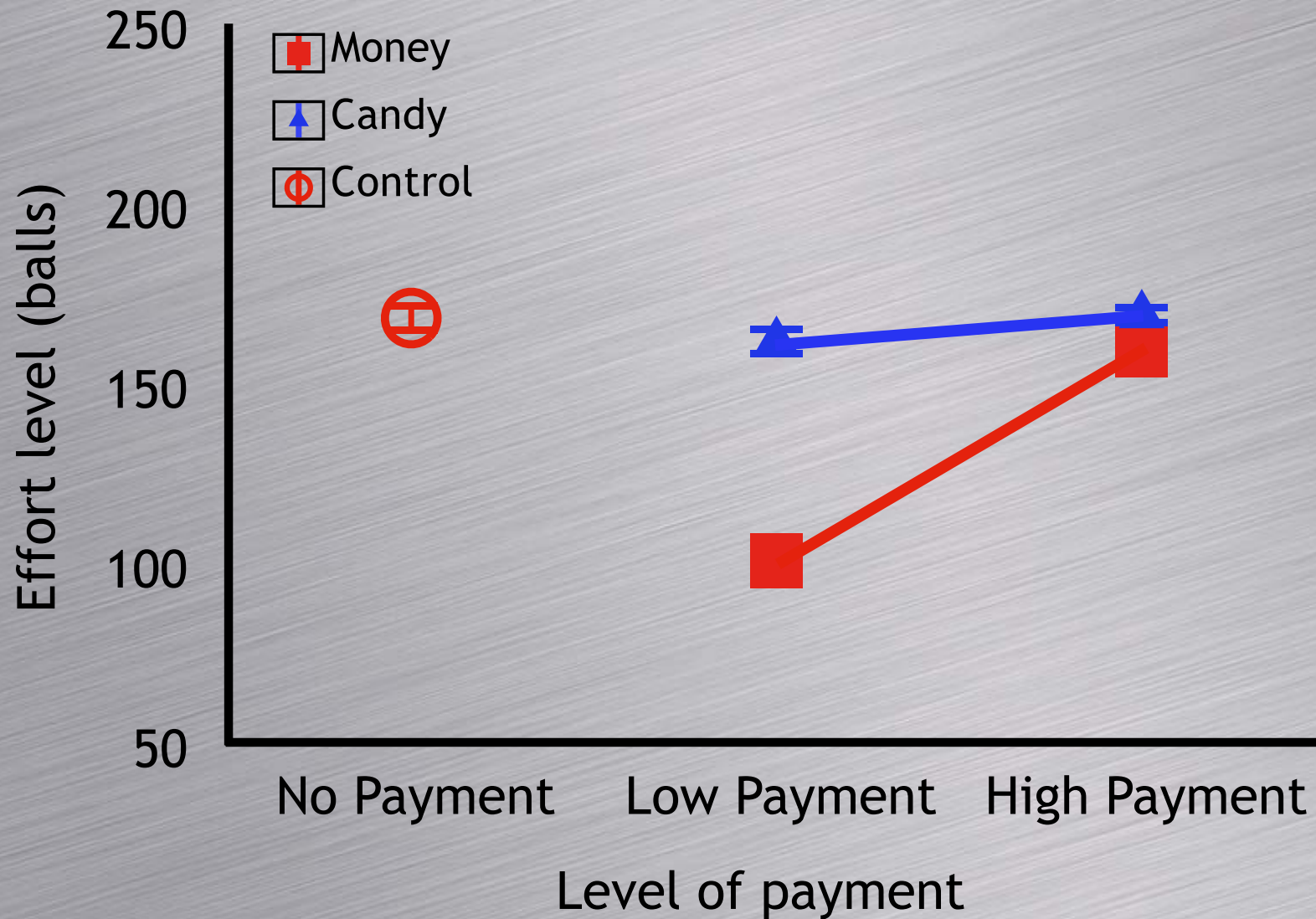


Design



		Form of payment	
		Cash	Candy
Level of payment	No	-----	
	Low	\$0.1	5 JB
	Middle	\$4	1/2 lbs JB

Results Exp2



Conclusion Exp2

- The cash and candy conditions support the “two-markets” hypothesis
 - Candy \neq Cash conditions
 - Effort under no payment is above low cash payment but not above low candy payment

Experiment 3

- Testing the Cash vs. \$Candy conditions
- In a domain of mental effort

The task (1-4)

Select a set of numbers that adds up to 100

19

20

26

27

5

10

13

38

17

40

34

31

Current total =52

I give up

The task (5)

Select a set of numbers that adds up to 100

11 15 61 27

18 42 57 3

30 8 19 69

Current total =72

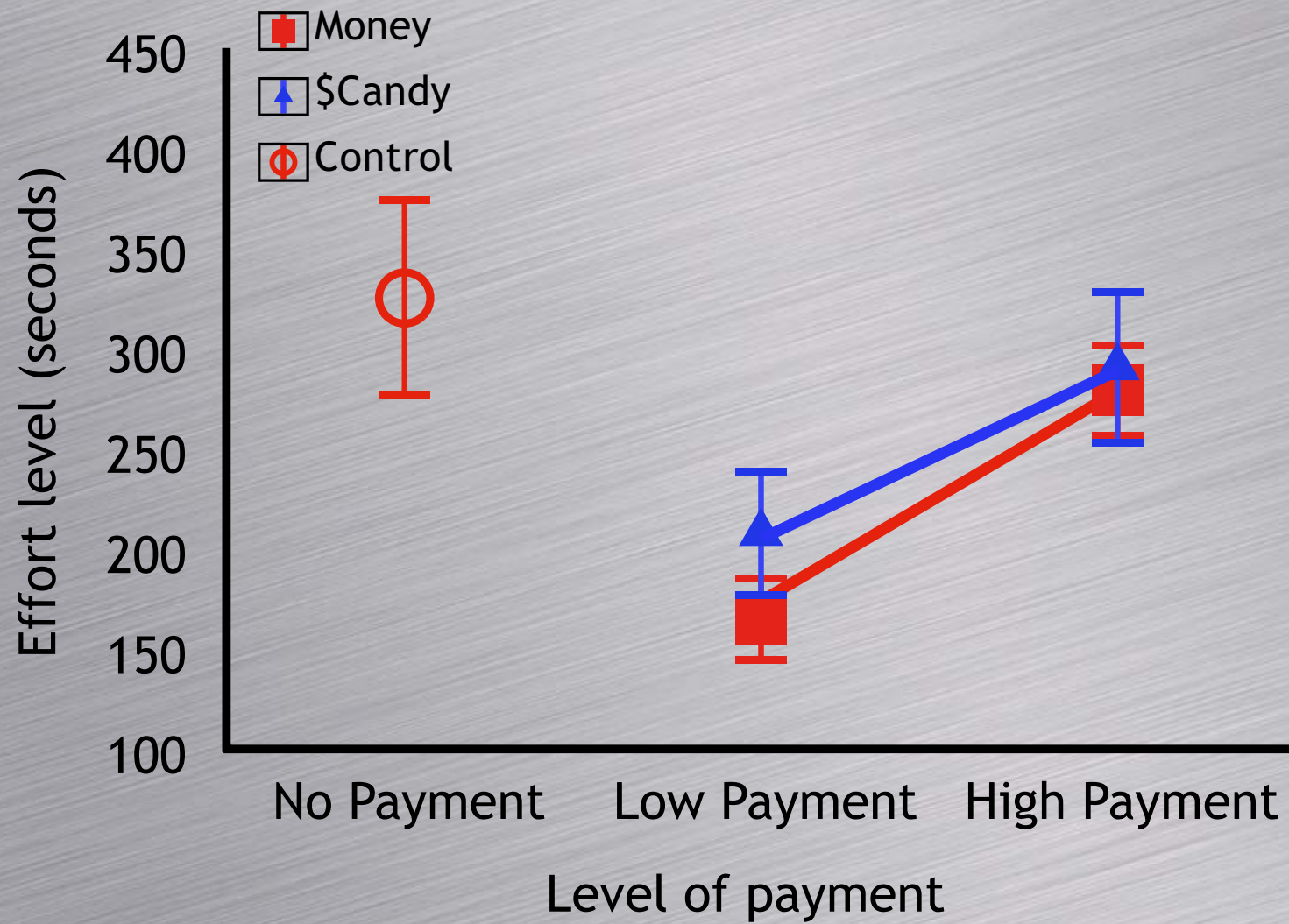
I give up

Design



		Form of payment	
		Cash	\$Candy
Level of payment	No	-----	
	Low	\$0.5	\$0.5 candy bar
	Middle	\$5	\$5 Godiva box

Results Exp3



Conclusion Exp3

- The similarity between the cash and \$candy conditions suggest that mean mentioning \$ is sufficient to change the type of relationship from social to money markets
- No payment is a social market and thus higher in effort

General discussion

Mark Twain ends chapter 2 of Tom Sawyer by noting that:

“If he (Tom) had been a great and wise philosopher, like the writer of this book, he would now have comprehended that work consists of whatever a body is obliged to do, and that play consists of whatever a body is not obliged to do.” He then continues and adds that

“There are wealthy gentleman in England who drive four-horse passenger-coaches twenty or thirty miles on a daily line in the summer, because the privilege cost them considerable money; but if they were offered wages for the service, that would turn it into work, and then they would resign.”

Other examples

- Paying for help seem to dramatically change the nature of the help
- "I am not chagrinning you because if I would, you would not be able afford me"
- Paying for sex seem to dramatically change the nature of sex
- "The most expensive sex is free sex" -- Woody Allen
- "The big difference between sex for money and sex for free is that sex for money usually costs a lot less"
-- Brendan Behan

Summary

- Paying changes the nature of labor
- The currency of payment (and the link to effort) also influences the nature of labor
- Companies can strive to have a mix of social and money markets in their relationships

The relationship between payment and
motivation, effort, performance

At high levels of payment

Large Stakes



&

Big Mistakes

○ ● ● Incentives

- Incentives are an important part of the labor market
- The basic assumption is that increased (decreased) payment for performance will cause individuals to work more (less)
- Non-performance based, and long term payments are more complex ...

● ● ● High incentives @ work

- Stock brokers:
commission compensation + bonus
- P&G partner advertising agencies:
payment-by-results
- National federations in soccer World Cup:
payment-by-round
- Students at school: “payment”-by-evaluation
- Farm labor, Sales peoples, etc.

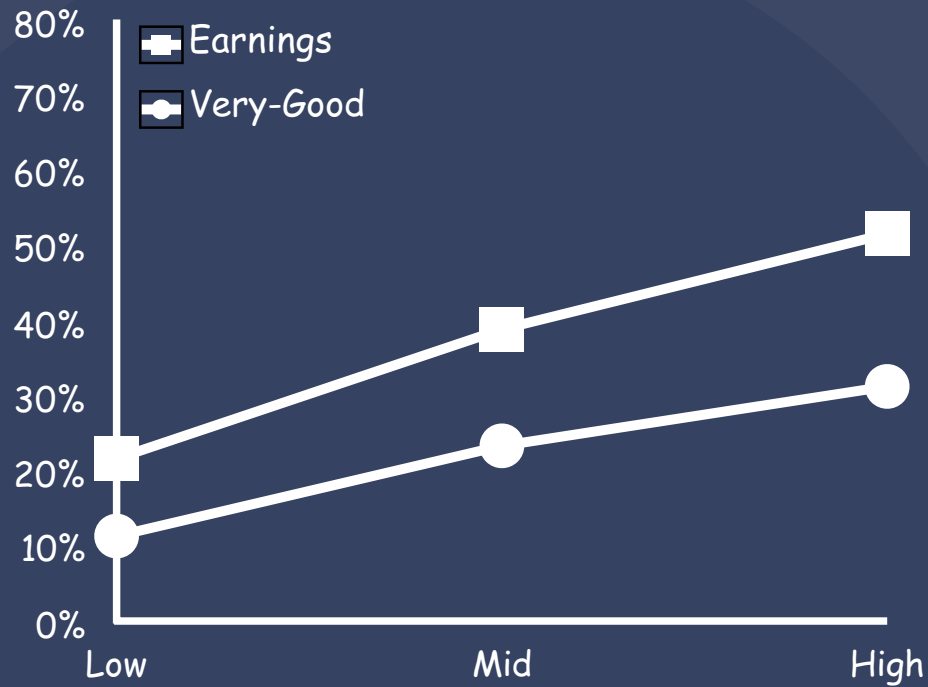
○ ● ● Incentives & performance

- Incentives do not always behave as we would expect
- Decreasing incentives to 0 can increase effort (Lepper, Green & Nisbett 1973; Gneezy & Rustichini 2000; Heyman & Ariely 2004)
- What about increasing incentives?
Can they be counterproductive?
Under what conditions?

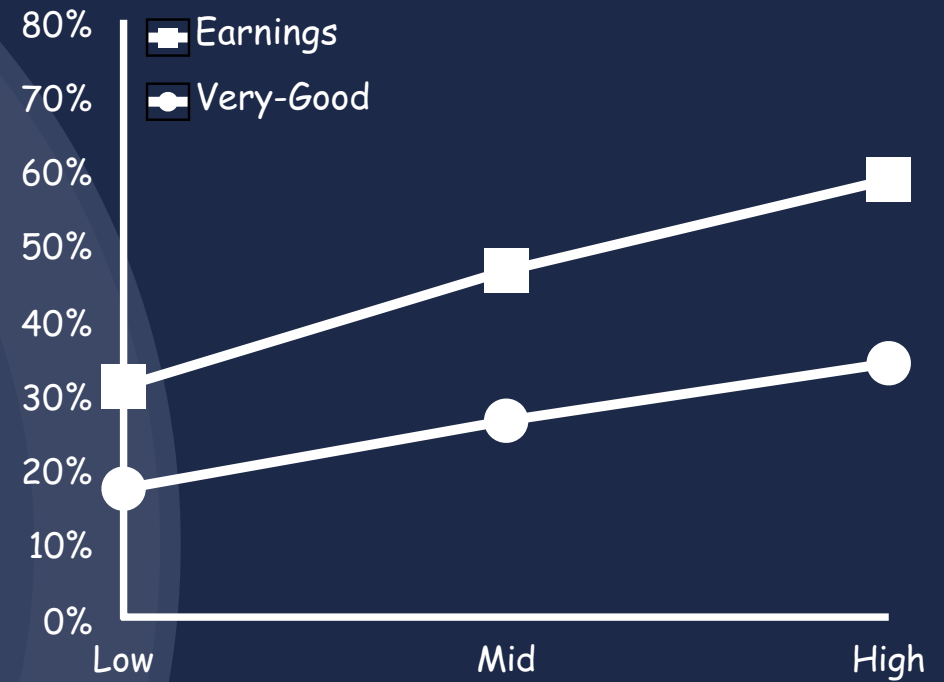


What do people predict?

Packing-quarters predictions



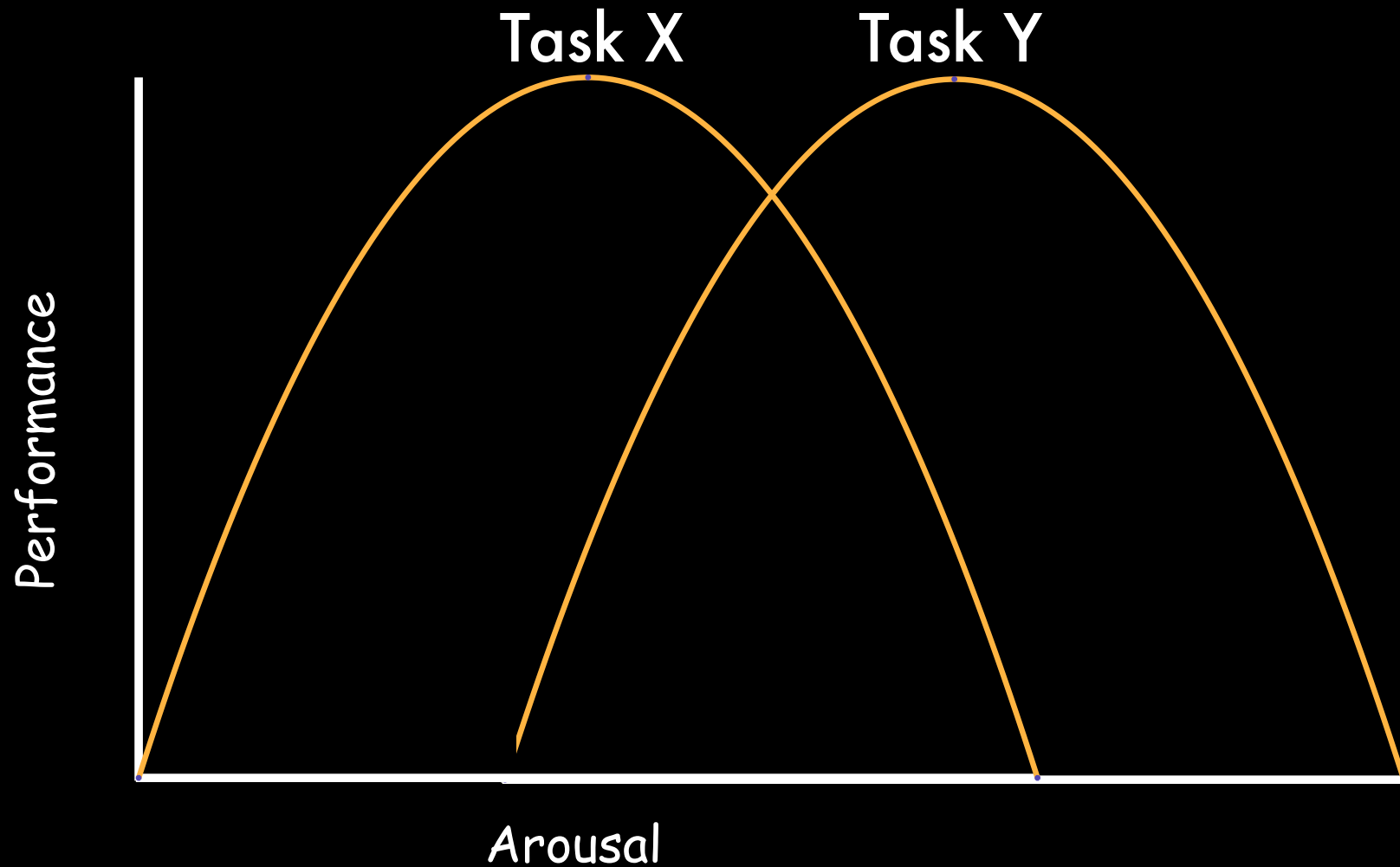
Simon predictions



○ ● ● Ψ of high incentives

- The “Yerkes-Dodson law”
- Experiment: rats had to learn to discriminate safe from unsafe areas in a cage. Performance showed an inverted U-shape relation between arousal (size of electronic shock) and learning

The "Yerkes-Dodson law"



○ ● ● Ψ of high incentives

● Choking under pressure

- Taking an exam

- Giving a talk

- Home teams: championship in baseball and basketball (Baumeister & Steinhilber 1984)

- Roll-up game (Baumeister 1984)

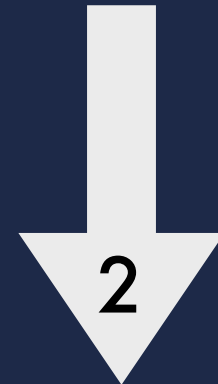
- All of these suggest a possible decrease in performance

○ ● ● Ψ of high incentives

Increased
incentives



Effort



We assume that link 1
is correct, but question
link 2 for very high
incentives

Performance

○ ● ● Predictions

High, but not moderate, incentives can be counterproductive and can produce a reduced level of performance

○ ● ● Experiment setup


- A place that we could pay a substantial sum given our research budget → rural India
- Payment for performance on 7 tasks

● ● ● The population

- Average all-India monthly per capita consumer expenditure (MPCE) in rural areas: Rs 495 (approx. \$10)
- TV: 49.4%; Telephone: 6.9%
- Transportation: 51.7% bicycle, no cars
- Education: 5.6 years, 26% no formal education
- Religion: 90.8% Hindu, 5.7% Christians, 3.4% Muslims
- Gender: 26.4% female, 73.6% male (87 people)

Payment levels



	$P < \text{Good}$	$\text{Good} < P < \text{VGood}$	$P > \text{VGood}$
Low	0 rs	2 rs	4 rs
Medium	0 rs	20 rs	40 rs
High	0 rs	200 rs	400 rs

- DV1 = % of people with $P > (\text{VGood})$
- DV2 = % of max possible payment

○ ● ● Game Types

- Creativity
- Concentration
- Motor skills
- Bluffing ability

○ ● ● Game 1 - creativity

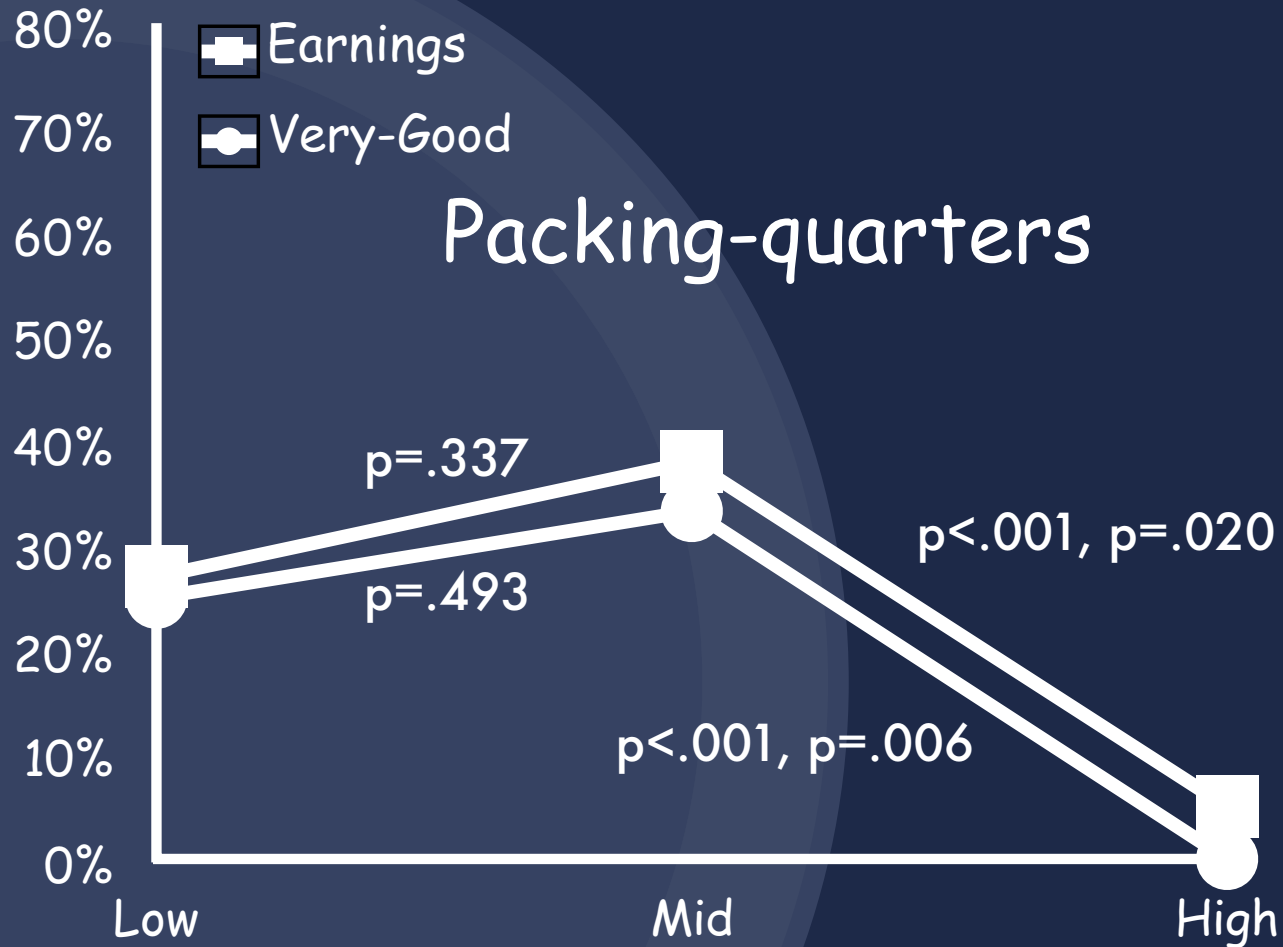
● Packing Quarters

- fit 9 metal pieces into black frame as fast as possible

● Scoring Rule:

- 1 trial
- good: ≤ 240 sec
- very good: ≤ 120 sec

Game 1 - results



○ ● ● Game 2 - concentration

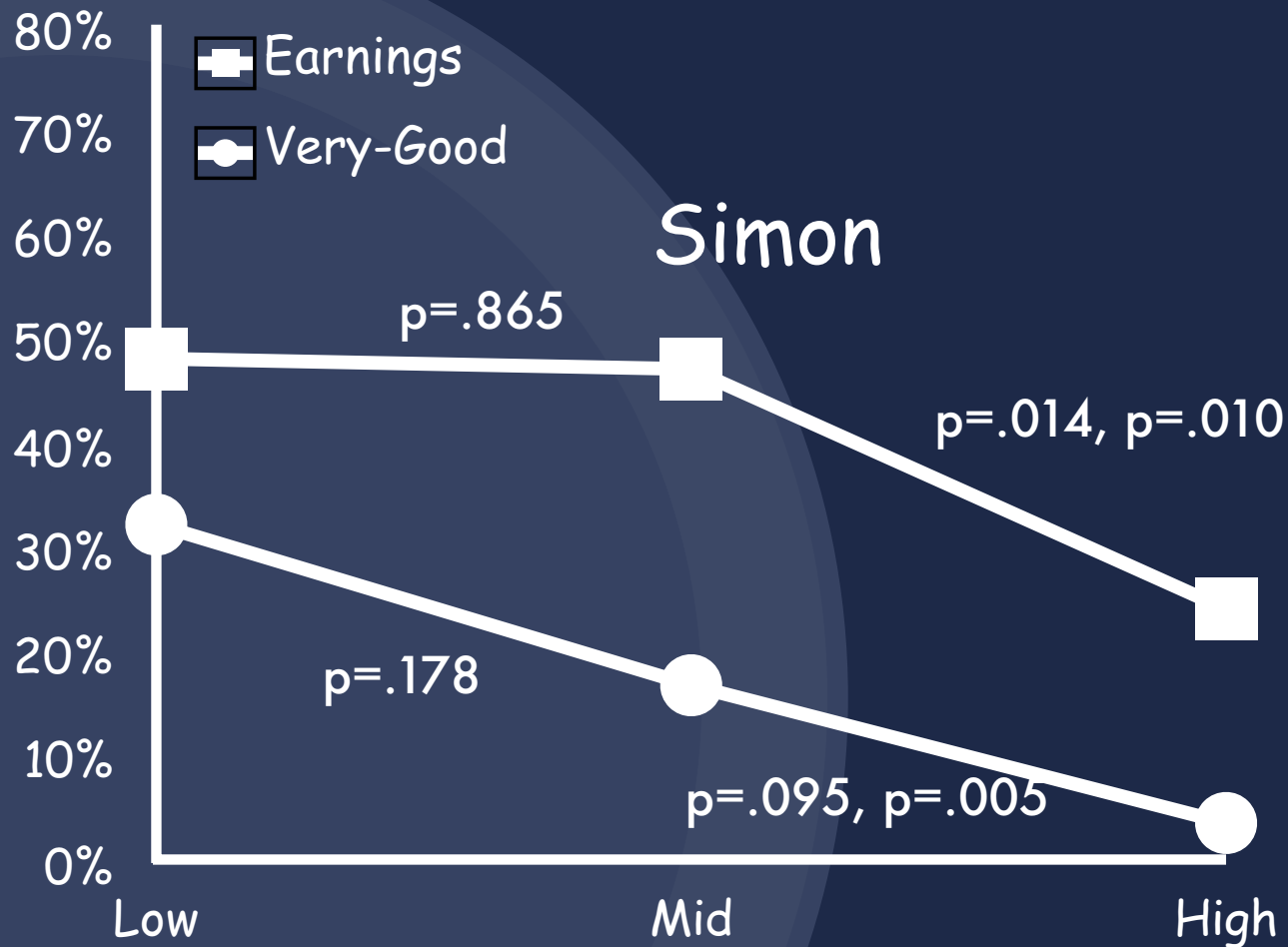
● Simon

- repeat sequence by pushing corresponding light-buttons in same order

● Scoring Rule:

- 10 trials
- good: 1 repetition of ≥ 6 consec. lights
- very good: 1 repetition of ≥ 8 consec. lights

Game 2 - results



○ ● ● Game 3 - Concentration

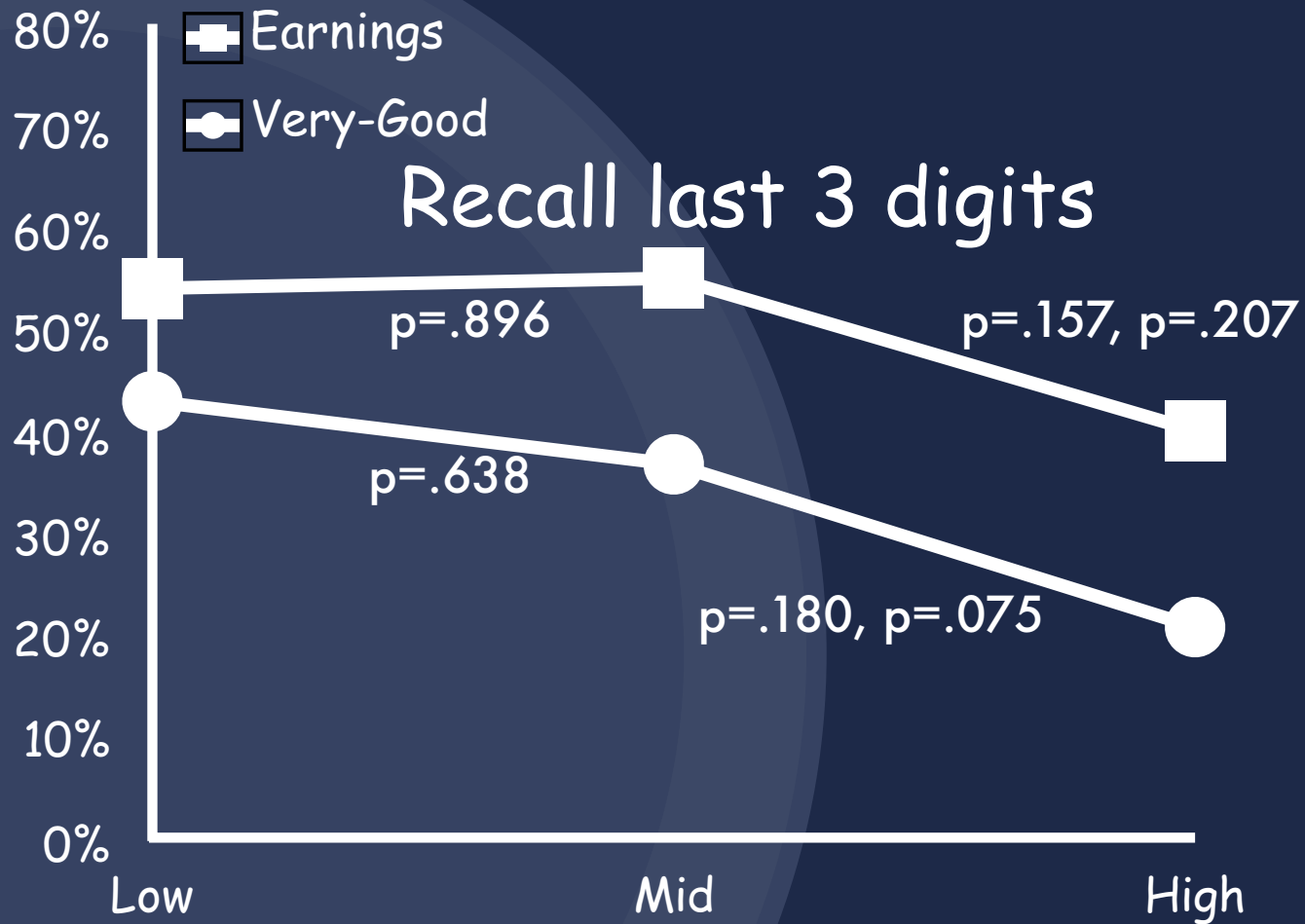
● Recall last 3-digits

- experimenter reads sequences of digits, stops at an unannounced point. Participant has to recall the last 3-digits (e.g., 8,7,8,2,5,9,7,3)

● Scoring Rule:

- 14 trials
- good: ≥ 4 correct trials
- very good: ≥ 6 correct trials

○ ● ● Game 3 - results



● ● ● Game 4 - bluffing

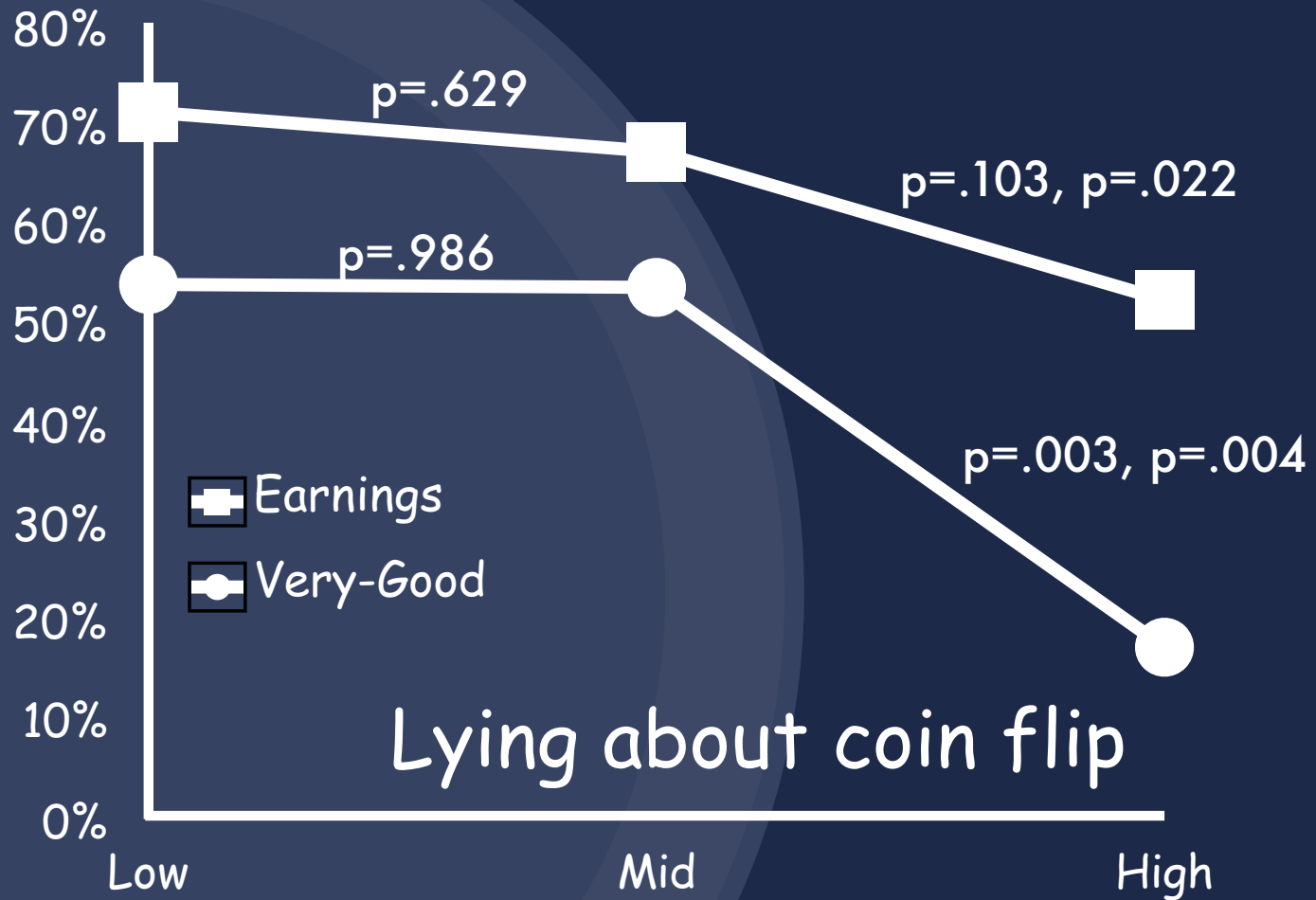
● Lying about a coin-flip

- flip a coin and send a signal to research assistant about the state of the coin. Research assistant has to guess the true state. If s/he doesn't, participant gets 1 point.

● Scoring Rule:

- 10 trials
- good: ≥ 6 points
- very good: ≥ 8 points

Game 4 - results



○ ● ● Game 5 - motor skills

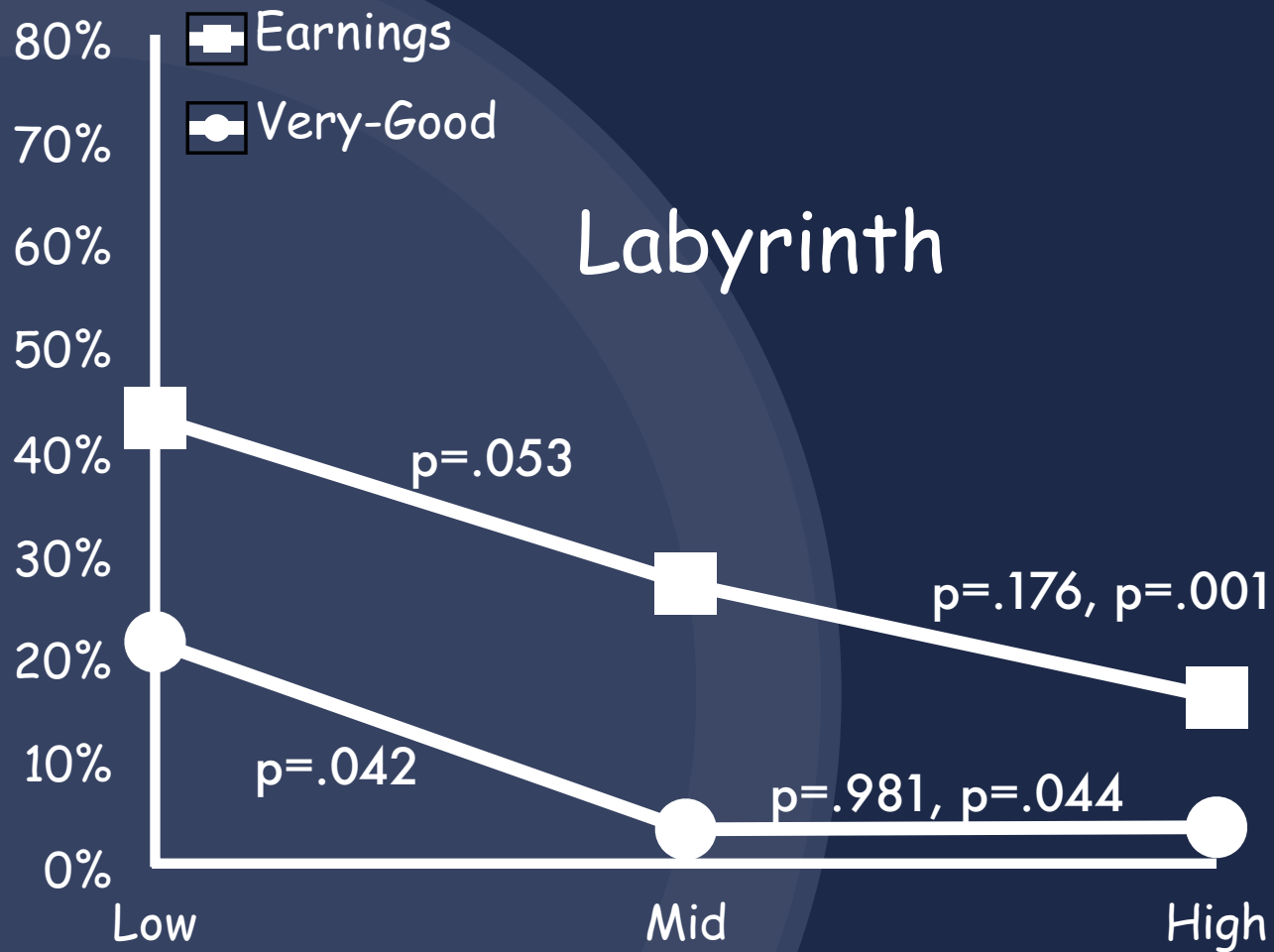
● Labyrinth

- Pass the ball along the pathway avoiding the holes in the board from "start" to "finish"

● Scoring Rule:

- 10 trials
- good: 1 trial \geq 7th hole
- very good: 1 trial \geq 9th hole

Game 5 - results



○ ● ● Game 6 - motor skills

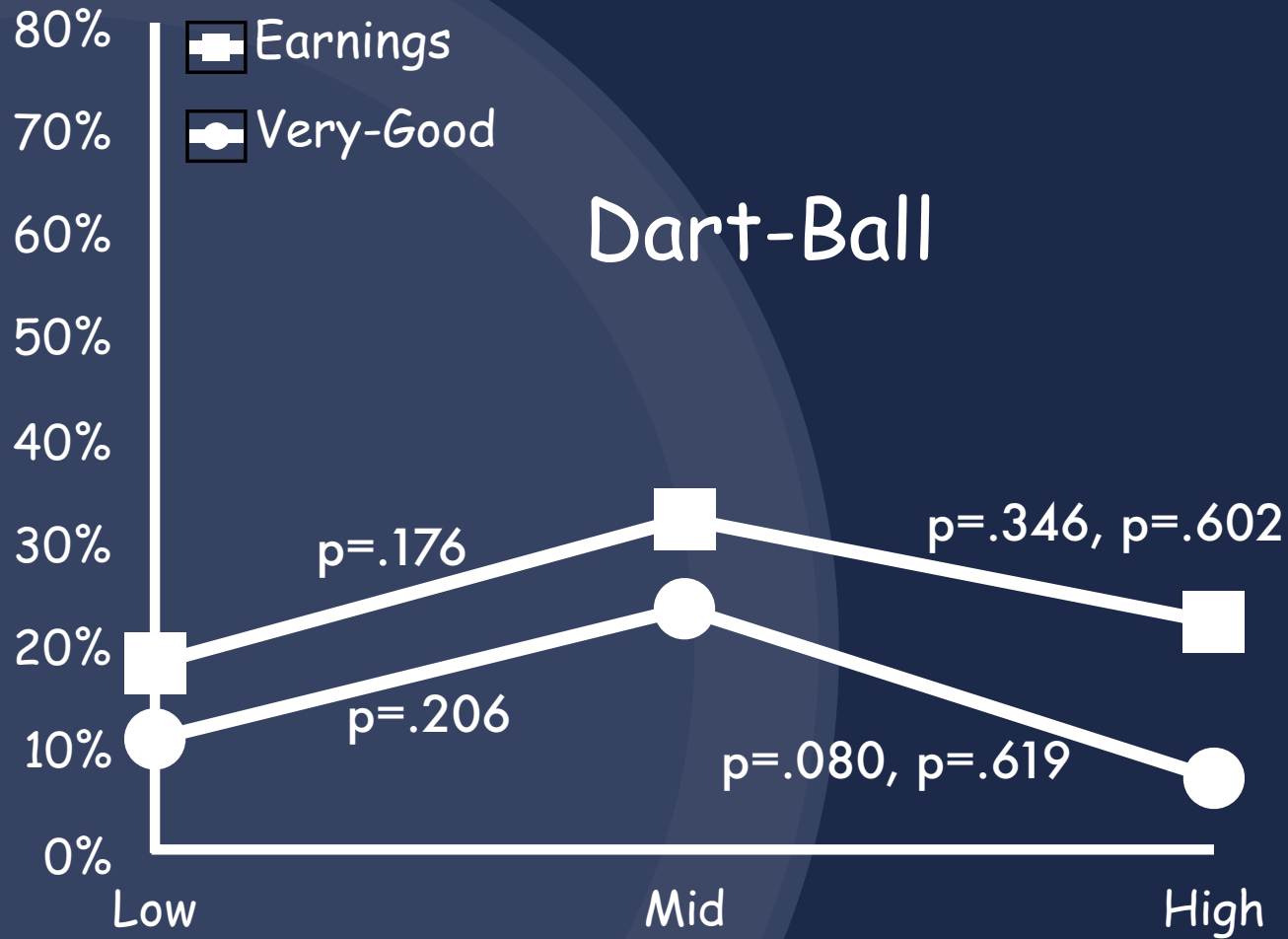
● Dart Ball

- Throw a velcro ball at the inflated target

● Scoring Rule:

- 20 trials
- good: ≥ 5 balls hitting the center
- very good: ≥ 8 balls hitting the center

Game 6 - results



○ ● ● Game 7 - motor skills

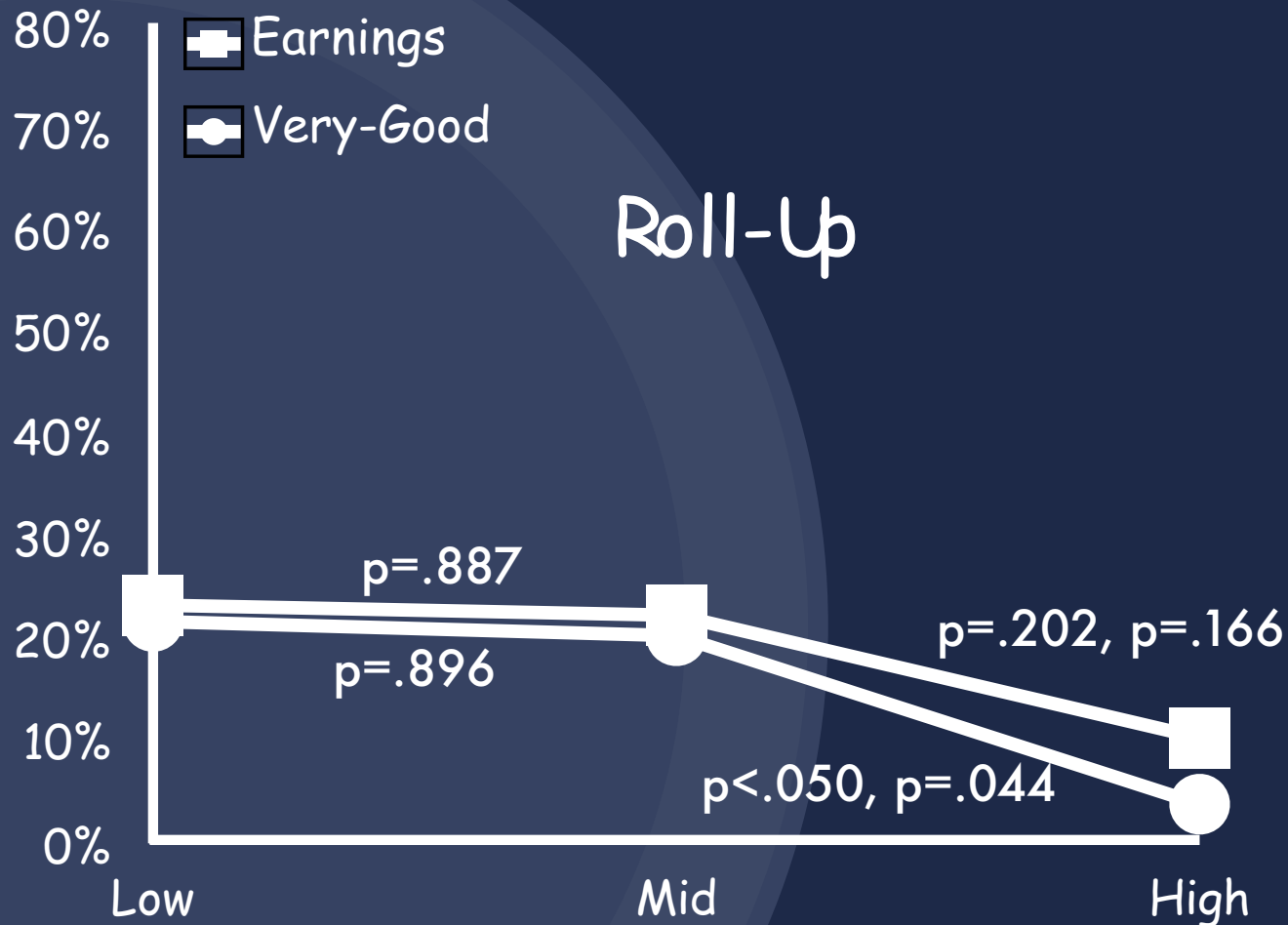
● Roll-Up

- Attempt to drop the ball into the highest possible slot by deftly spreading apart then pushing together the two rods

● Scoring Rule:

- 20 trials
- good: ≥ 4 balls hitting the furthest hole
- very good: ≥ 6 balls hitting the furthest hole

Game 7 - results



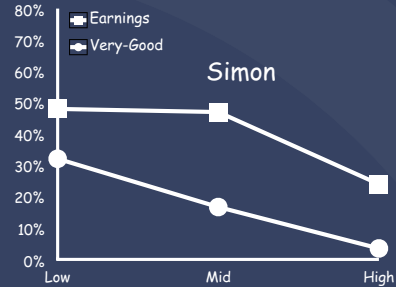


Results all (I)

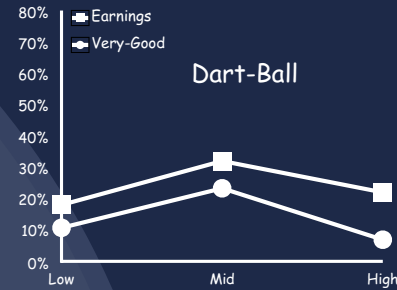
creativity



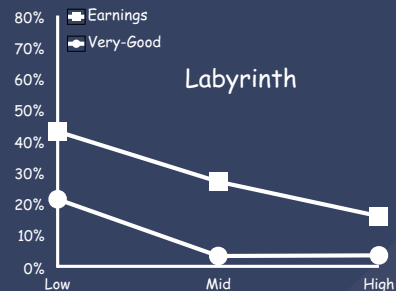
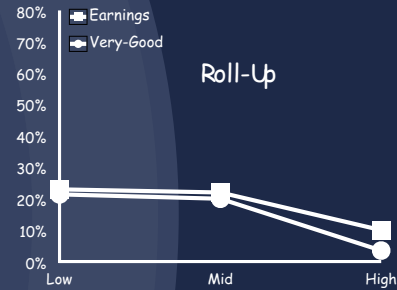
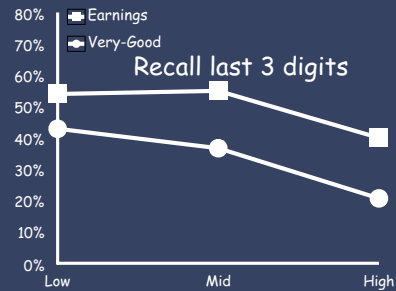
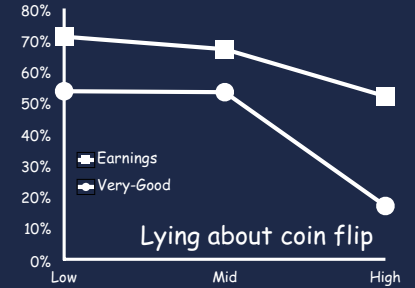
concentration



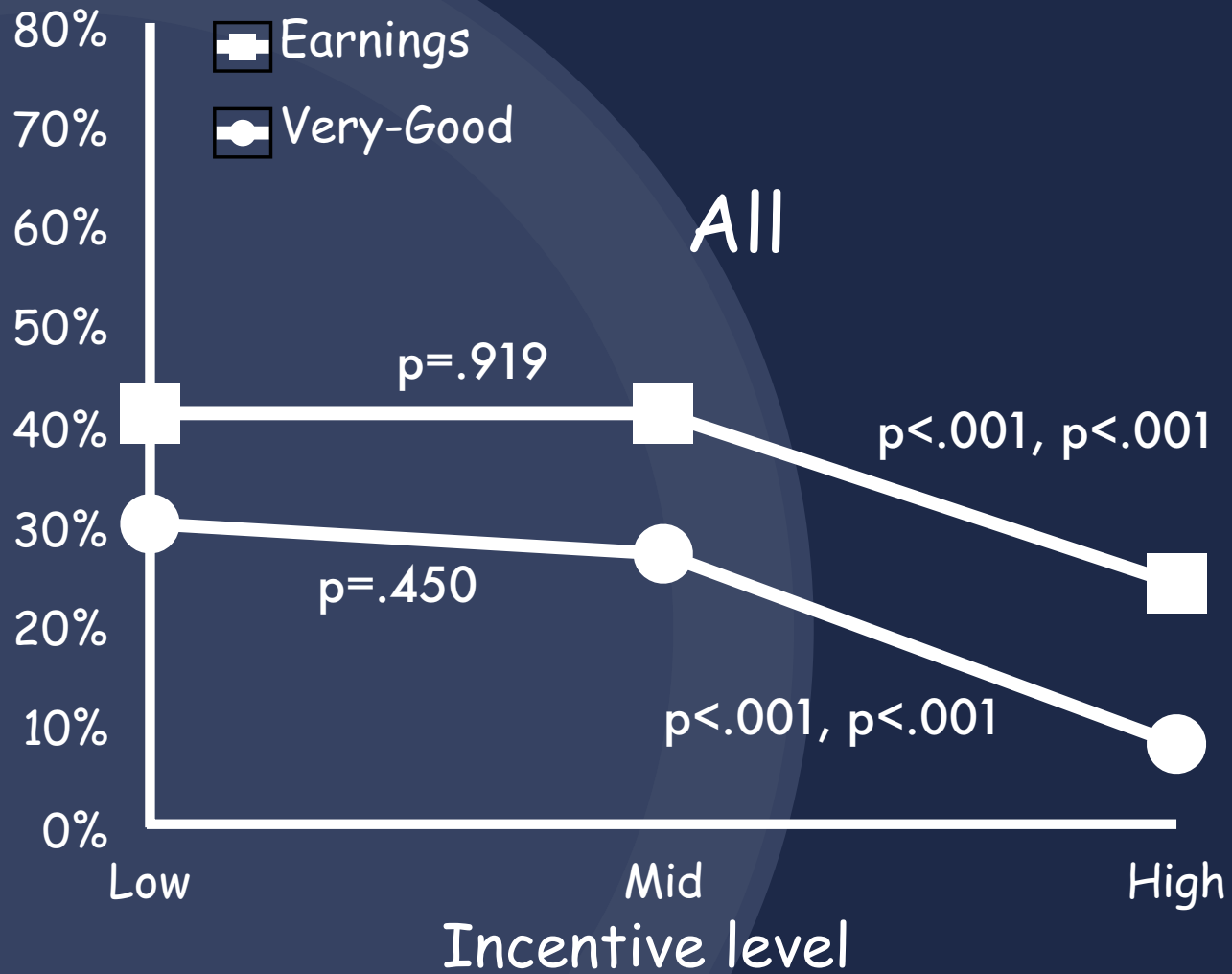
motor skill



bluffing



Results all (II)



○ ● ● Summary

- No obvious difference in pattern of performance across the different game types
- Except for 1 case (i.e. Labyrinth) there was no (marginally) significant difference in performance between low and mid payment conditions
- Performance always lowest in high payment condition when compared with low and mid payment conditions together

○ ● ● Predictions?

Can people predict this?

- The effect of very high incentives would be of no consequence if people know about it and avoid incentives that are too high for particular tasks & individuals

○ ● ● The prediction study (I)

- We described the India study to 60 students
- Students had to predict the results for Simon & Packing Quarters:
 - Fraction of participants who would reach $P(\text{Good})$ & $P(\text{VGood})$ in each of the 2 games & each of the 3 payment conditions
- Incentive: students were paid by accuracy of their prediction (max of \$10)

○ ● ● The prediction study (II)

● Payment method per set:

○ set = game & performance level

○ max. \$2.50 per set

Total Difference	Payment
0-2	\$2.50
3-5	\$2.25
6-8	\$2.00
9-11	\$1.75
12-14	\$1.50
15-17	\$1.25
18-20	\$1.00
21-23	\$0.75
24-26	\$0.50
27-29	\$0.25
≥ 30	\$0.00

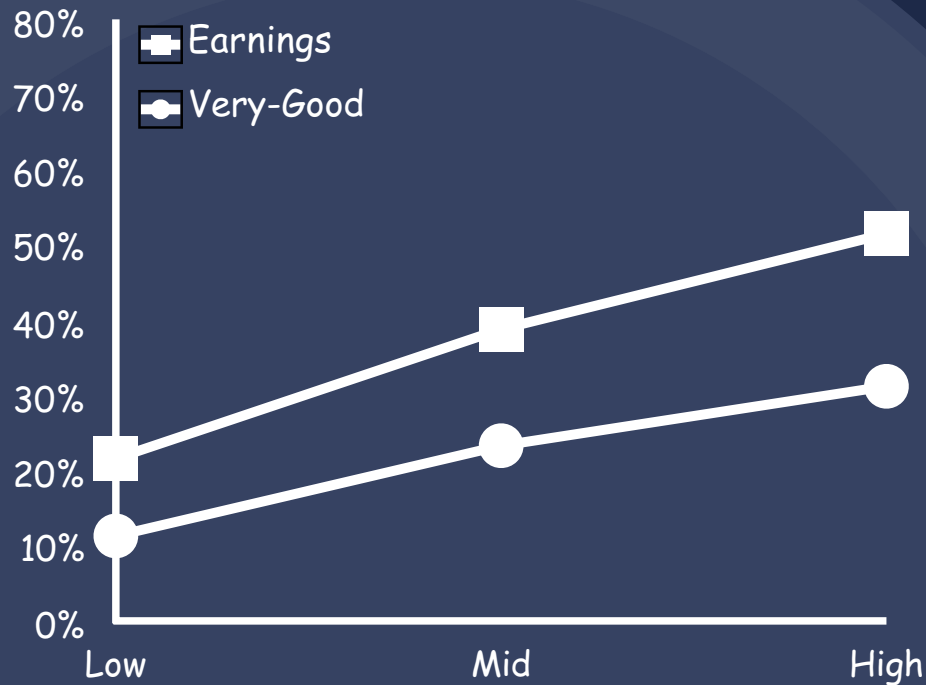
○ ● ● Predictions: results (I)

- Students predicted that as reward increased participants in the original experiment would on average...
 - be *more* likely to achieve $P(V\text{Good})$
 - receive a *higher* % of max possible payment

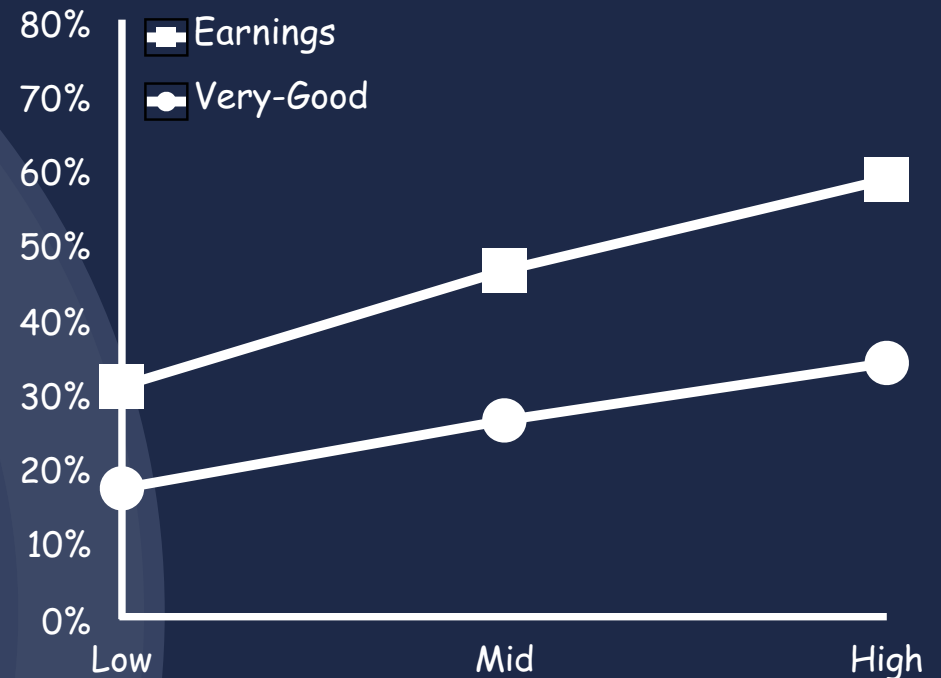


Predictions: results (II)

Packing-quarters predictions



Simon predictions



Repeated Measure ANOVA results:

Earnings: $F(2, 42) = 51.328, p < .001$; all 3 pairwise comparisons $p < .001$

Very-Good: $F(2, 42) = 64.336, p < .001$; all 3 pairwise comparison $p < .001$

○ ● ● Predictions: implications

- Students do not seem to have an intuitive understanding of the possible negative effects of very high incentives
- Do others? Do HR experts understand this?
- Do companies set very high incentives for other purposes?

○ ● ● Implications

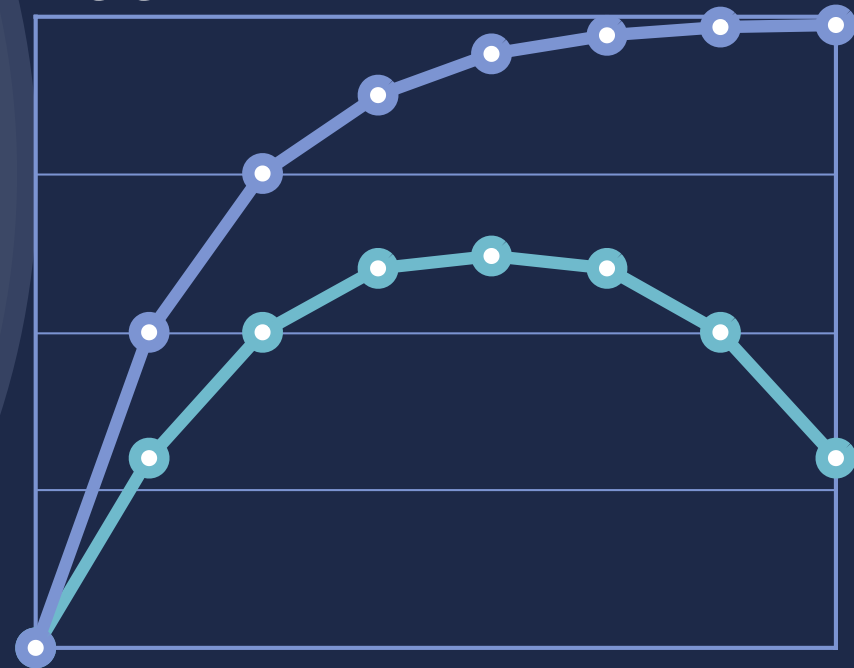
Providing incentives are generally costly for those providing them, raising contingent incentives beyond a certain point may be a losing proposition

Other questions

- Can people get used to high incentives?
- How high is too high?
- Would breaking bonuses into many smaller bonuses help?
- What kind of tasks are more likely to have negative effects of very large incentives?

Summary

- We often assume that higher incentives increase performance (perhaps in a diminishing returns)
- These results show that higher incentives can decrease performance



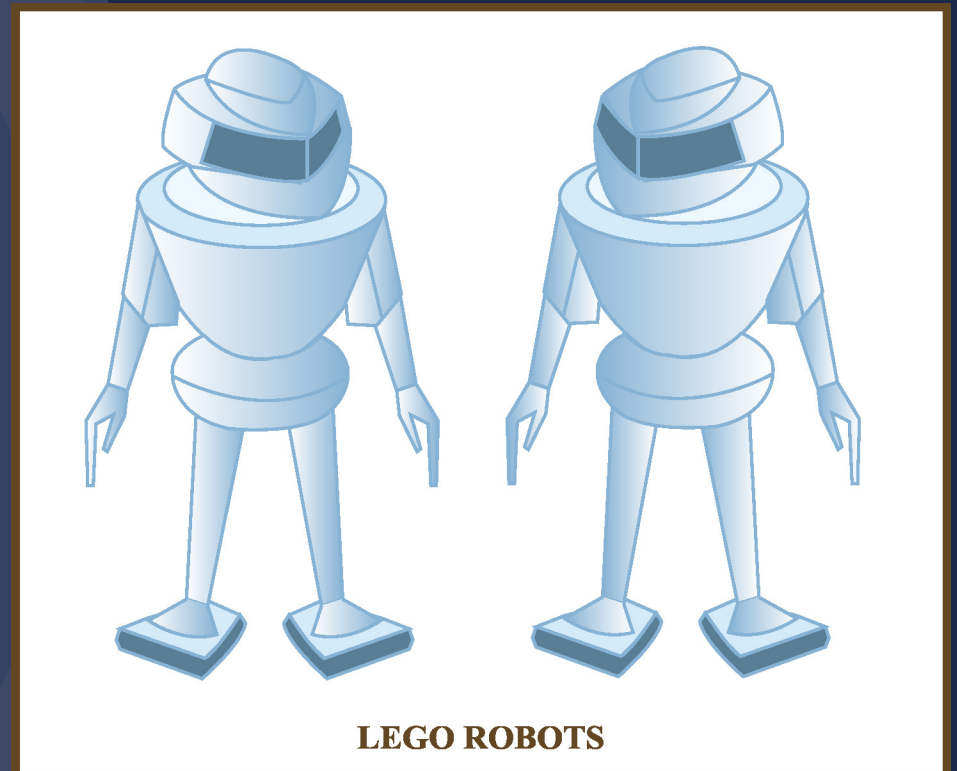
Labor & meaning

Why do people work?

- The standard view is that people exchange leisure for labor in order to get \$.
- What are the implications of this view?
 - Nothing else matters
 - People should stop working once they have reached their level of optimal returns

○ ● ● The meaning of labor

- Build Lego for pay (\$3, \$2.70 etc.)
- 2 conditions



Sabotage

Overall summary: Topics

- Relative vs absolute levels of compensations
- The relationship between payment and motivation, effort, performance
 - Low payments, high payments
- Labor & meaning
- Sabotage

Overall summary

- Labor is complex
- People work for many different motives and incentives
- Figuring out these motives can help making employees happier and more productive
- Labor is not more rational than other aspects of our life -- and it is important to figure it out