Public Finance II. / Public Economics

Lecture IV - Market efficiency and the endowment effect

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Office Hours (Room 5C.30)
Mon 15:15 – 16:00
Tue 14:15 – 15:00

Readings:

- Gruber, J. (2005). Public finance and public policy. Macmillan.
- Varian, H. R. (2014). Intermediate Microeconomics: A Modern Approach: Ninth International Student Edition. WW Norton & Company.

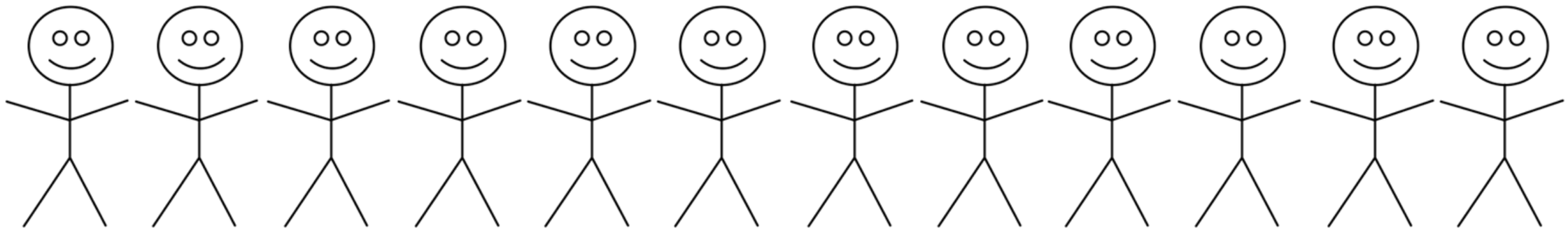
The Coase theorem

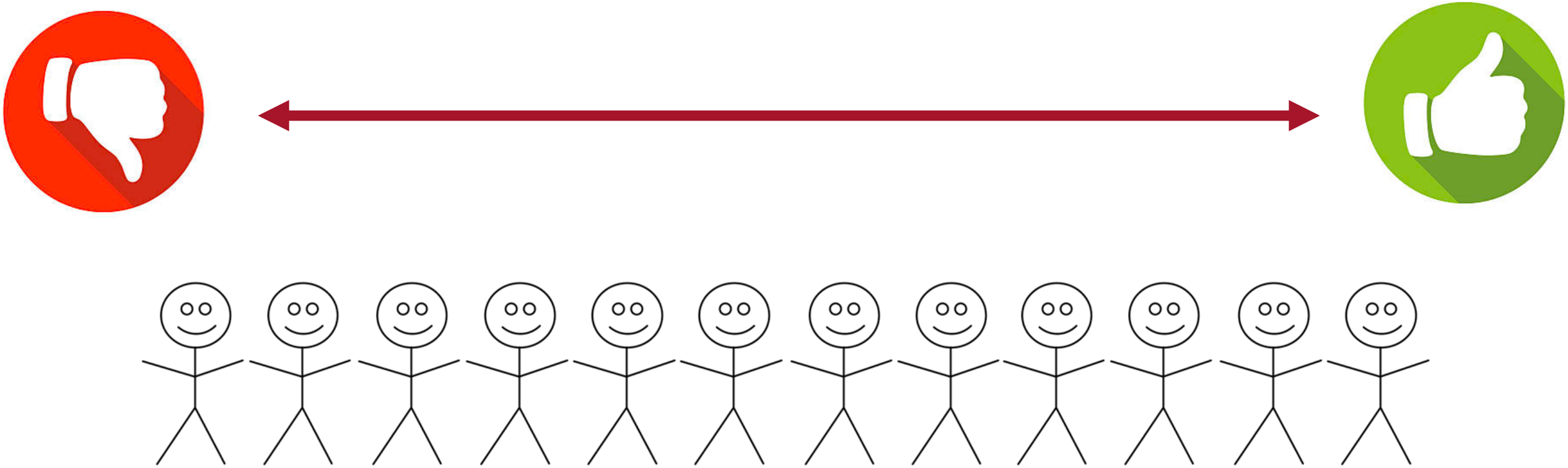
- Subject to income effects, the allocation of resources will be independent of the assignment of property rights when costless trades are possible.

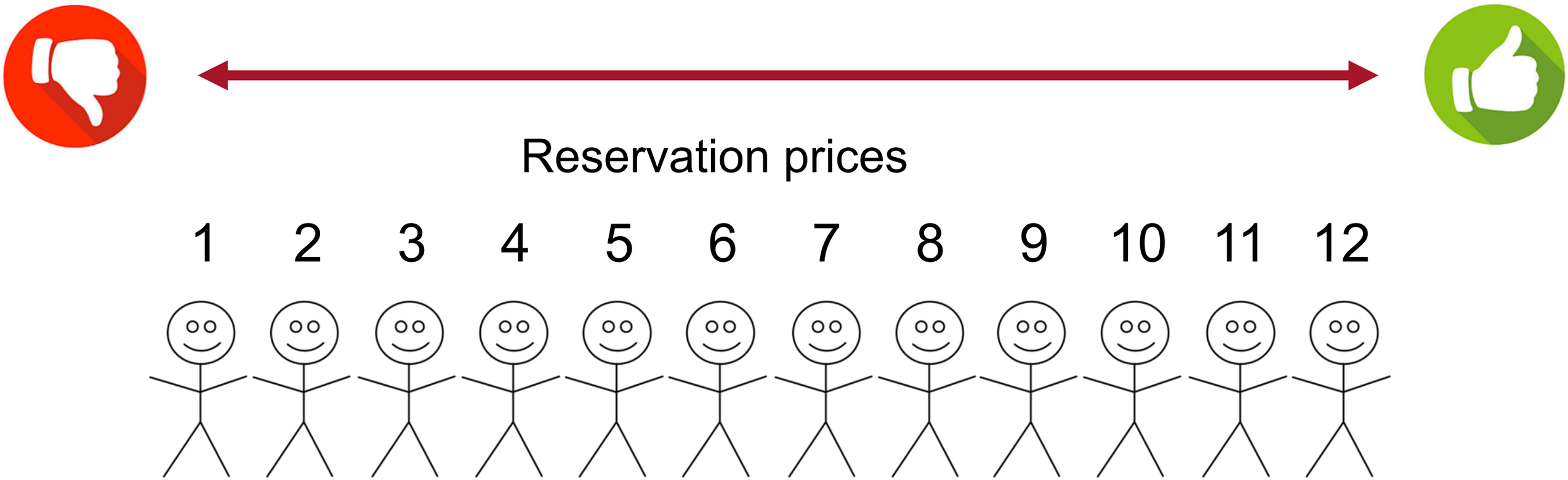
- (The Coase Theorem) In a competitive economy with complete information and zero transaction costs, the allocation of resources will be efficient and invariant with respect to legal rules of entitlement.

- In other words..

- If there is a good institution for trade and low transaction costs, bargaining will lead to Pareto efficient outcome regardless of the initial allocation of property.






Reservation prices
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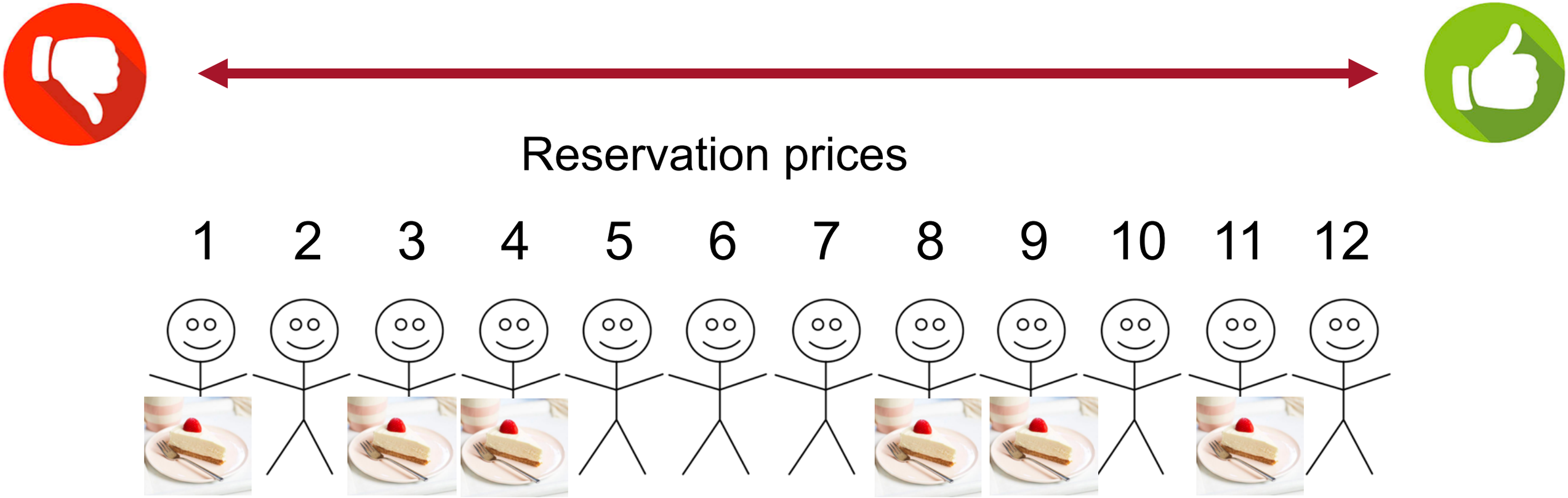
12


Reservation prices
1
2
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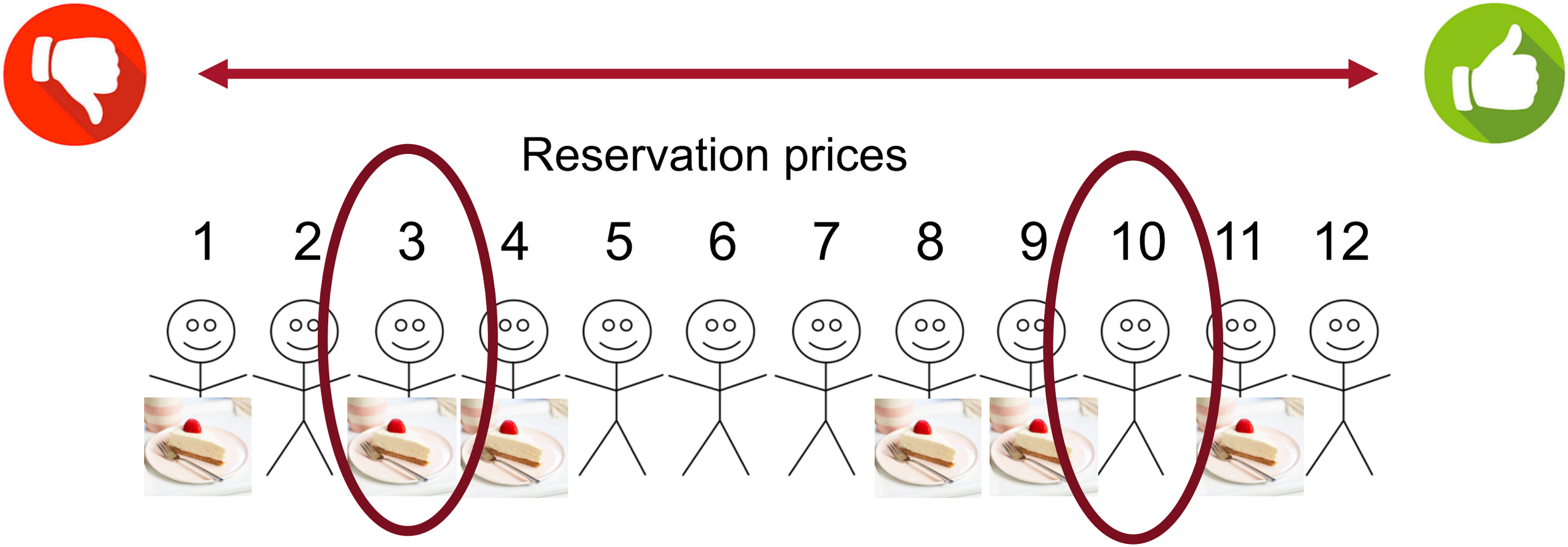
Pair – Think - Share

Reservation prices

1 2 3 4 5 6 7 8 9 10 11 12

What happens in the market assuming that a person can only eat 1 cheesecake?

- who is going to be a seller and who is going to be a buyer?
- how many trades would you expect to happen?
- what would be the market clearing (median) price?


Reservation prices
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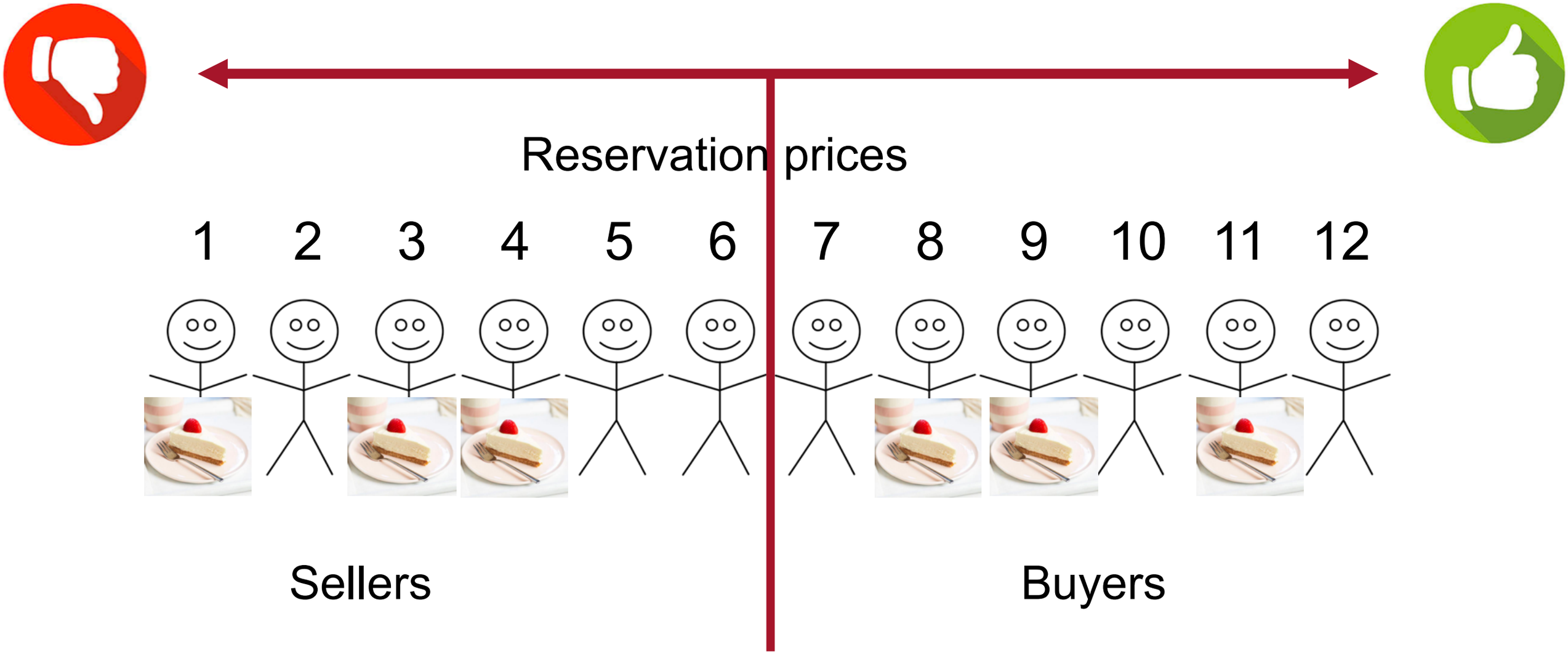
Reservation prices
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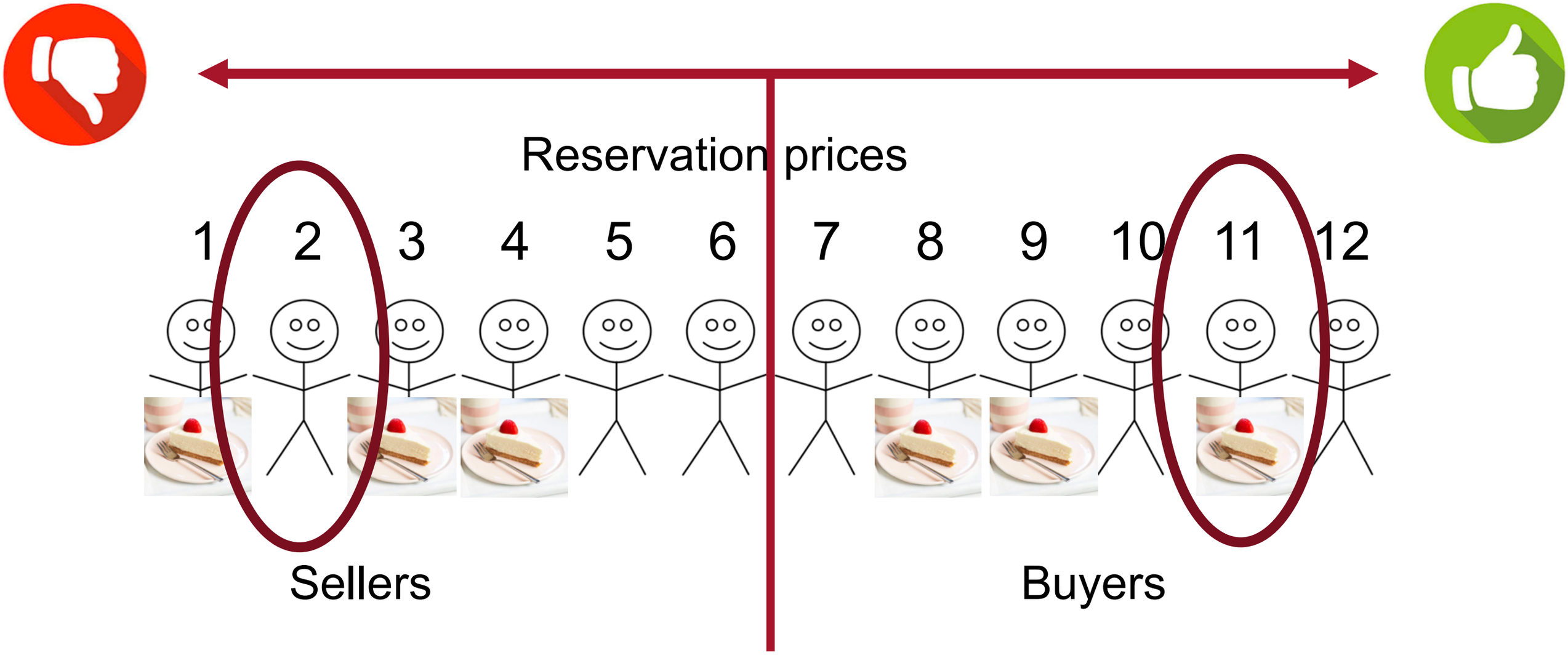
Sellers
Buyers


Reservation prices
1
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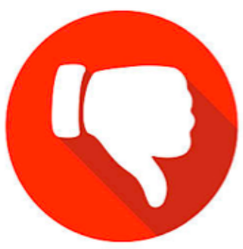
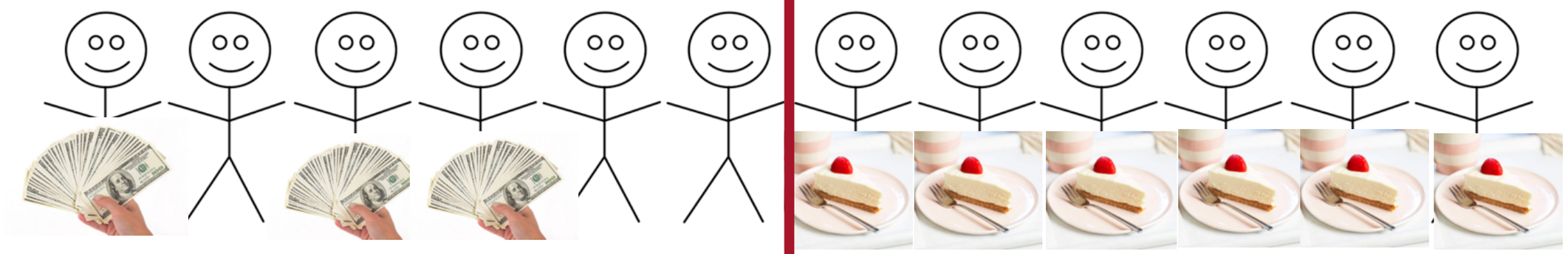
Sellers
Buyers



Expected market outcome

Reservation prices

1 2 3 4 5 6 7 8 9 10 11 12



Sellers

Buyers

Expected number of trades: 3

Expected clearing (median) price: 6.5

How can we test the theoretical prediction?

- Smith, Vernon L. “An Experimental Study of Competitive Market Behavior.” Journal of Political Economy, 70.2 (1962): 111-137.

- Laboratory environment

- Each participant either assigned a role of a buyer or seller

- Induced value – each buyer privately assigned max. willingness to pay (WTP), each seller privately assigned min. willingness to accept (WTA)

- Note: each participants only knows his private information, has no other information (about WTPs/WTAs of others, number of traders etc.)

TABLE 1

Test	Trading Period	Predicted Exchange Quantity (x_0)	Actual Exchange Quantity (x)	Predicted Exchange Price (P_0)	Average Actual Exchange Price ($\bar{P}$)	Coefficient of Convergence [$\alpha = (100\ \sigma_0)/(P_0)$]	No. of Submarginal Buyers Who Could Make Contracts	No. of Submarginal Buyers Who Made Contracts	No. of Submarginal Sellers Who Could Make Contracts	No. of Submarginal Sellers Who Made Contracts
1.....	1	6	5	2.00	1.80	11.8	5	0	5	0
	2	6	5	2.00	1.86	8.1	5	0	5	0
	3	6	5	2.00	2.02	5.2	5	0	5	0
	4	6	7	2.00	2.03	5.5	5	1	5	1
	5	6	6	2.00	2.03	3.5	5	0	5	0
2.....	1	15	16	3.425	3.47	9.9	4	2	3	1
	2	15	15	3.425	3.43	5.4	4	2	3	1
	3	15	16	3.425	3.42	2.2	4	2	3	0
3.....	1	16	17	3.50	3.49	16.5	5	1	6	2
	2	16	15	3.50	3.47	6.6	5	0	6	1
	3	16	15	3.50	3.56	3.7	5	0	6	0
	4	16	15	3.50	3.55	5.7	5	0	6	0

CHART 3

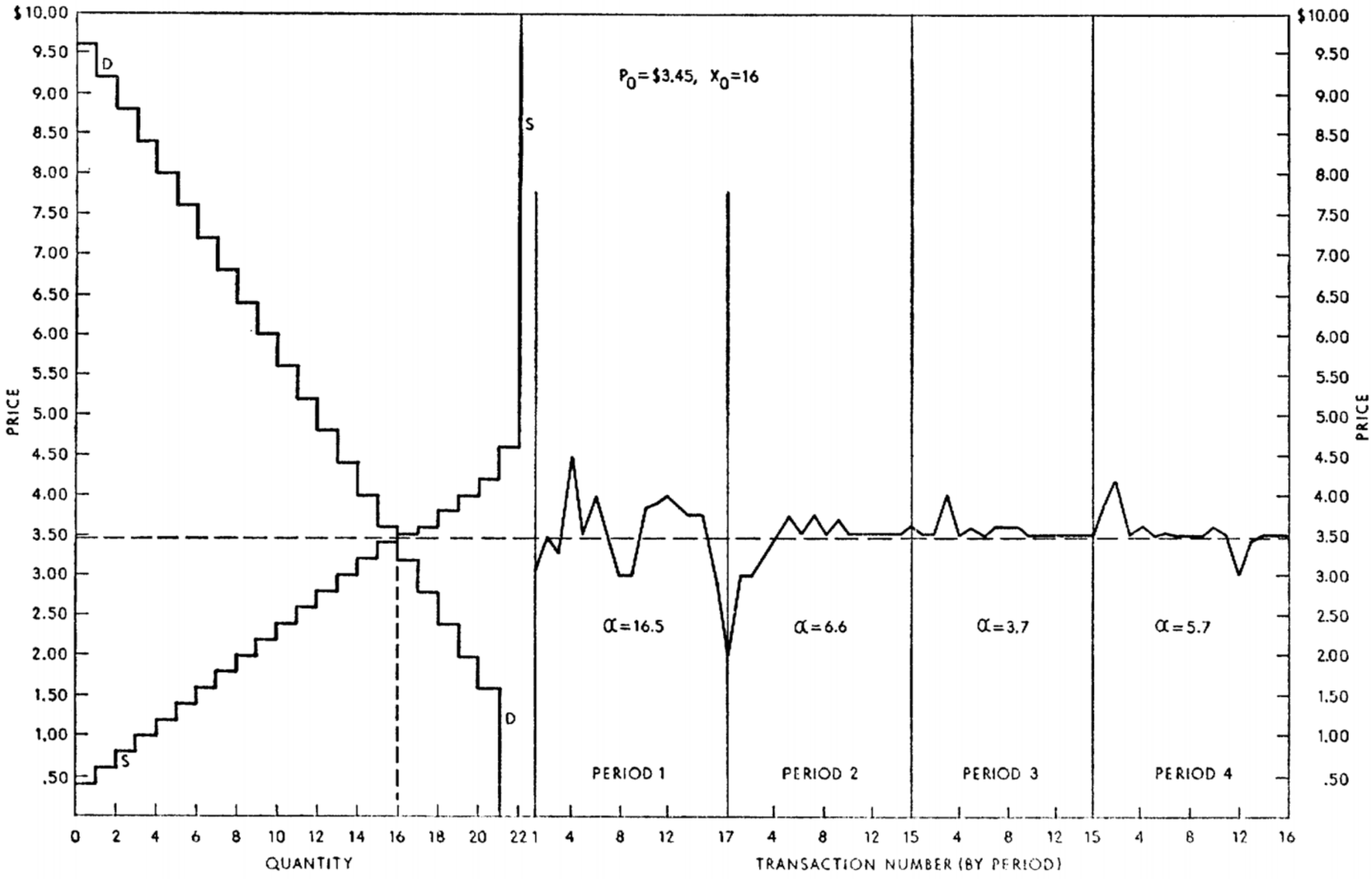
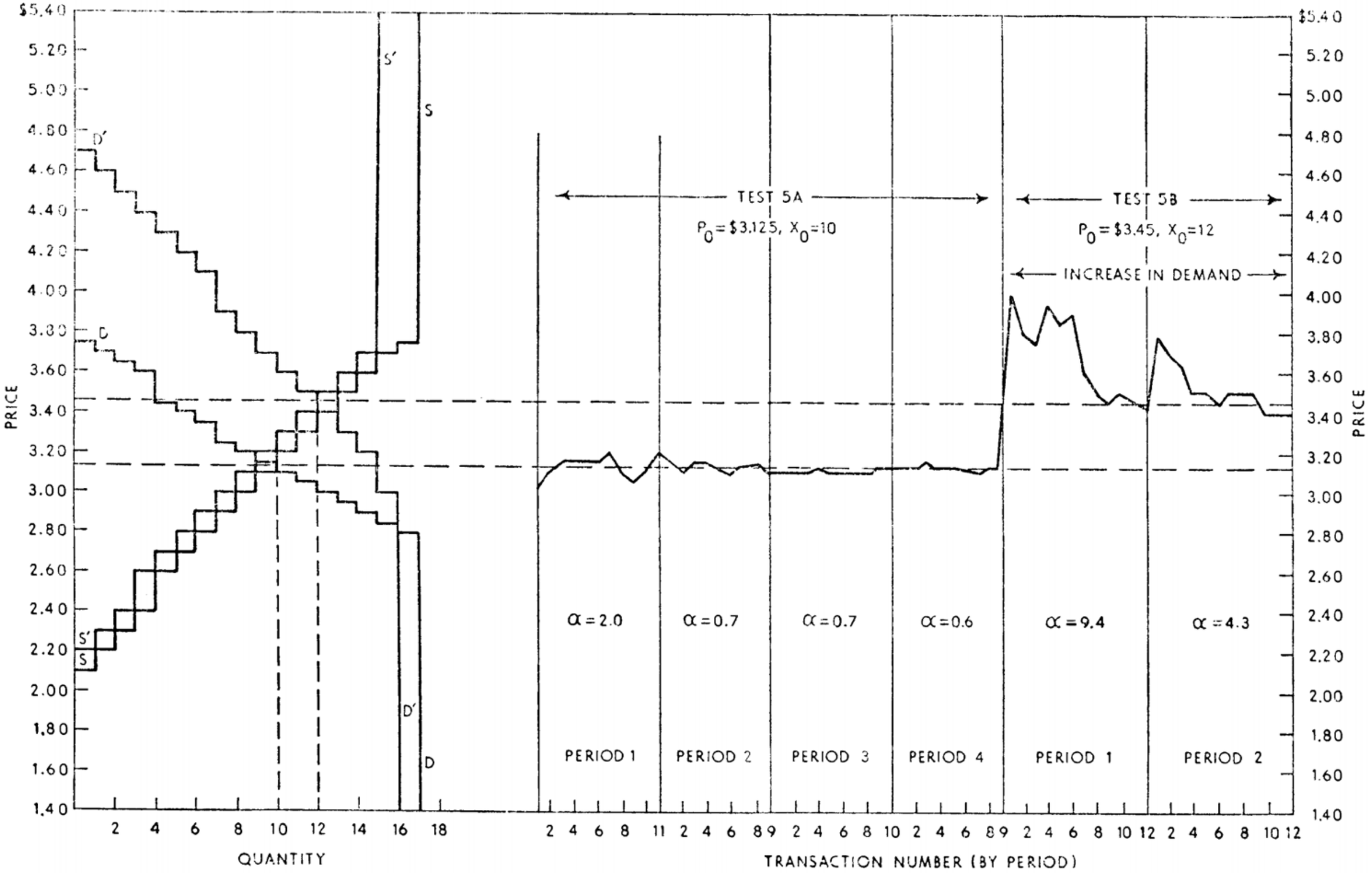
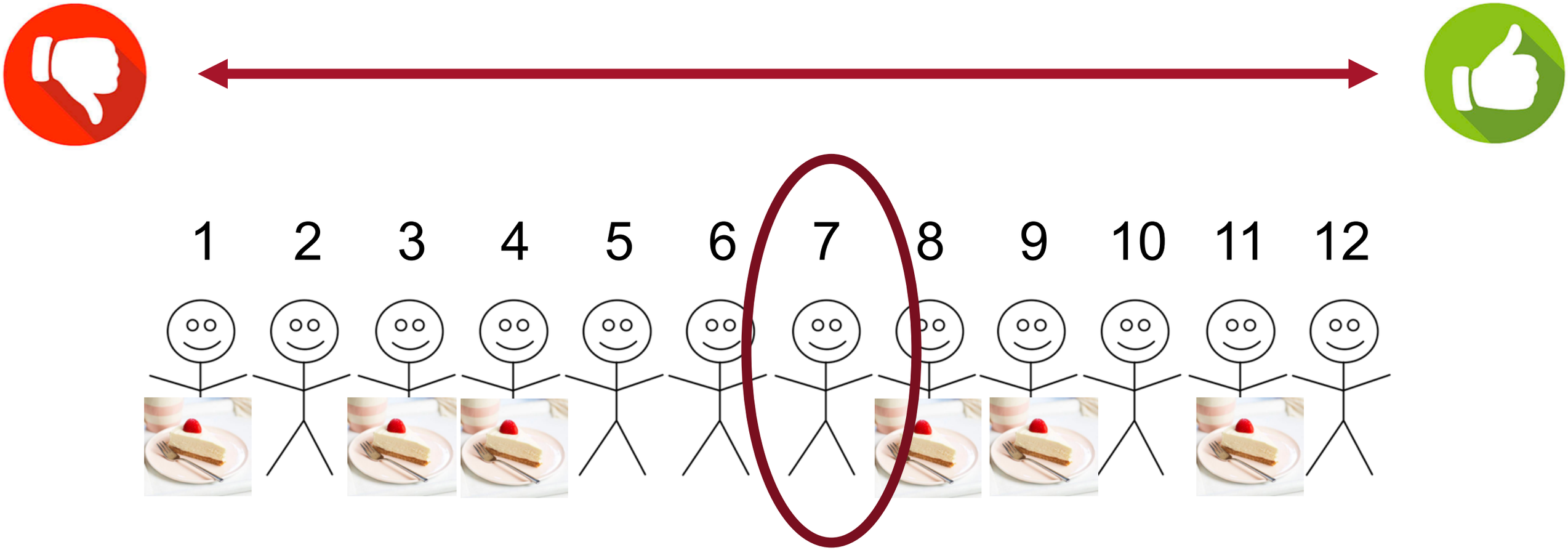

TEST 3
P_0=$3.45, X_0=16
$10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
PRICE
D
S
S
D
0 2 4 6 8 10 12 14 16 18 20 22
QUANTITY
α=16.5
α=6.6
α=3.7
α=5.7
PERIOD 1
PERIOD 2
PERIOD 3
PERIOD 4
1 4 8 12 17 4 8 12 15 4 8 12 15 4 8 12 16
TRANSACTION NUMBER (BY PERIOD)

CHART 5

TEST 5A AND TEST 5B



And how about you?



I am happy to buy a cake for 7 EUR.
I am happy to sell a cake for 7 EUR.

WTP vs. WTA

- The standard assumptions of economic theory imply that differences between an individual's maximum willingness to pay (WTP) for a good and minimum compensation demanded for the same entitlement (willingness to accept [WTA]) should be negligible

- The assumption that entitlements do not affect value contrasts sharply with empirical observations of significantly higher selling than buying prices.

- Kahneman, D., Knetsch, J. L.,& Thaler, R. H. (1990). Experimental tests of the endowment effect and the Coase theorem. Journal of political Economy, 98(6), 1325-1348.

The endowment effect

- Thaler (1980) labeled the increased value of a good to an individual when the good becomes part of the individual's endowment the "endowment effect." This effect is a manifestation of "loss aversion”.

- If a good is evaluated as a loss when it is given up and as a gain when it is acquired, loss aversion will, on average, induce a higher dollar value for owners than for potential buyers, reducing the set of mutually acceptable trades.

- Kahneman, D., Knetsch, J. L.,& Thaler, R. H. (1990). Experimental tests of the endowment effect and the Coase theorem. Journal of political Economy, 98(6), 1325-1348.

1 2 3 4 5 6 7 8 9 10 11 12

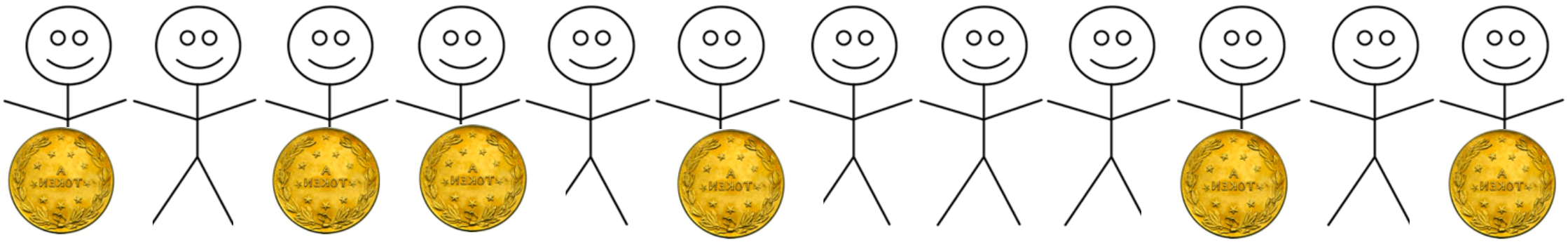


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TABLE 2

RESULTS OF EXPERIMENT 1

INDUCED-VALUE MARKETS

Trial	Actual Trades	Expected Trades	Price	Expected Price
1	12	11	3.75	3.75
2	11	11	4.75	4.75
3	10	11	4.25	4.25

CONSUMPTION GOODS MARKETS

Trial	Trades	Price	Median Buyer Reservation Price	Median Seller Reservation Price
		Mugs (Expected Trades = 11)		
4	4	4.25	2.75	5.25
5	1	4.75	2.25	5.25
6	2	4.50	2.25	5.25
7	2	4.25	2.25	5.25
		Pens (Expected Trades = 11)		
8	4	1.25	.75	2.50
9	5	1.25	.75	1.75
10	4	1.25	.75	2.25
11	5	1.25	.75	1.75

The Endowment Effect in Choices between Goods

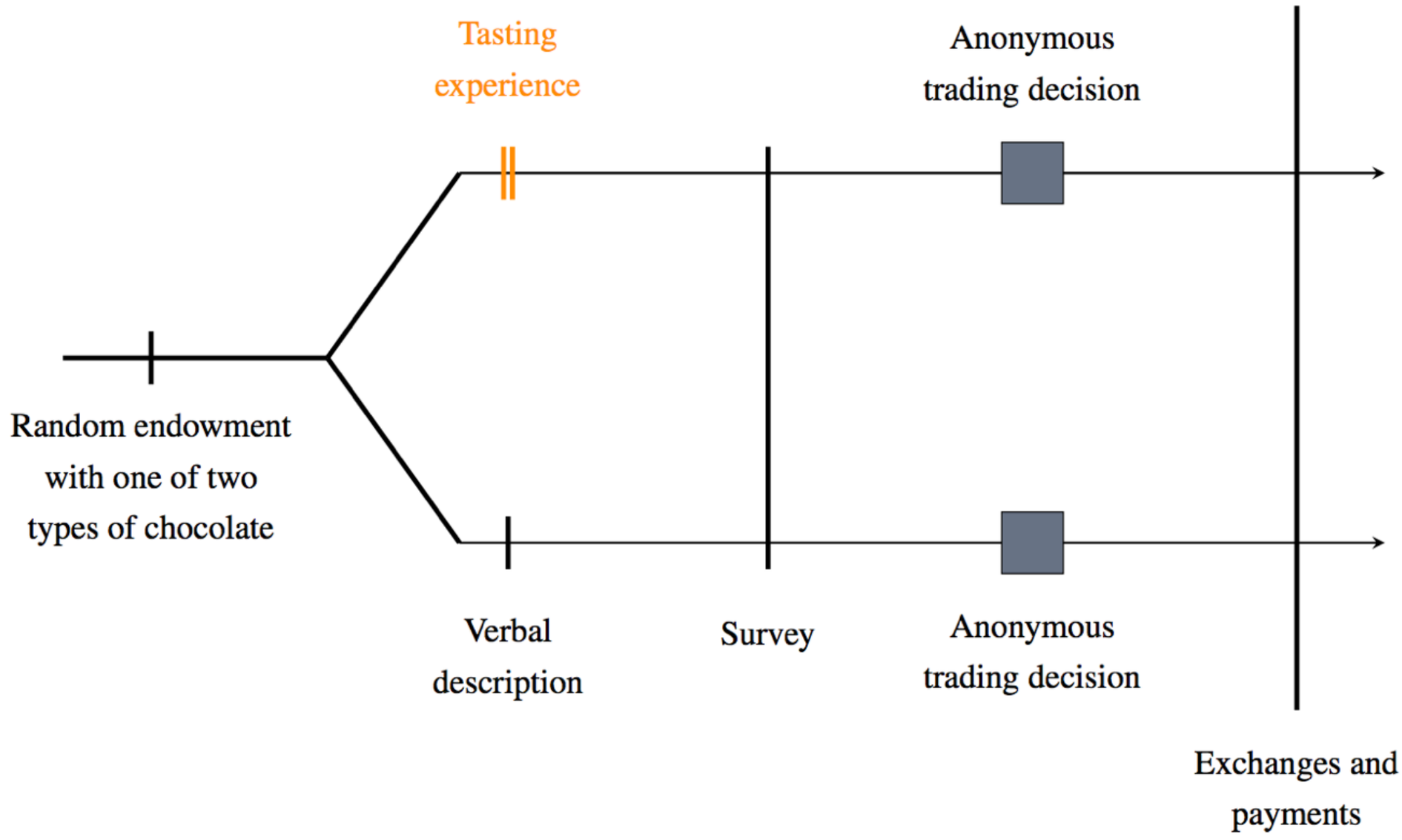
- Undertrading happens not only in exchanges of money and consumption goods, but also in the exchange between two goods.

- Participants were either offered of a choice between chocolate and a mug, or were given a mug, or were given a chocolate. All of them had an opportunity to change their endowment at the end of the class

- For most participants a mug was more valuable than the chocolate when the mug had to be given up but less valuable when the chocolate had to be given up.

- Knetsch, Jack L. "The Endowment Effect and Evidence of Nonreversible Indifference Curves." A.E.R. 79 (December 1989): 1277-84.

Choice Uncertainty and the Endowment Effect



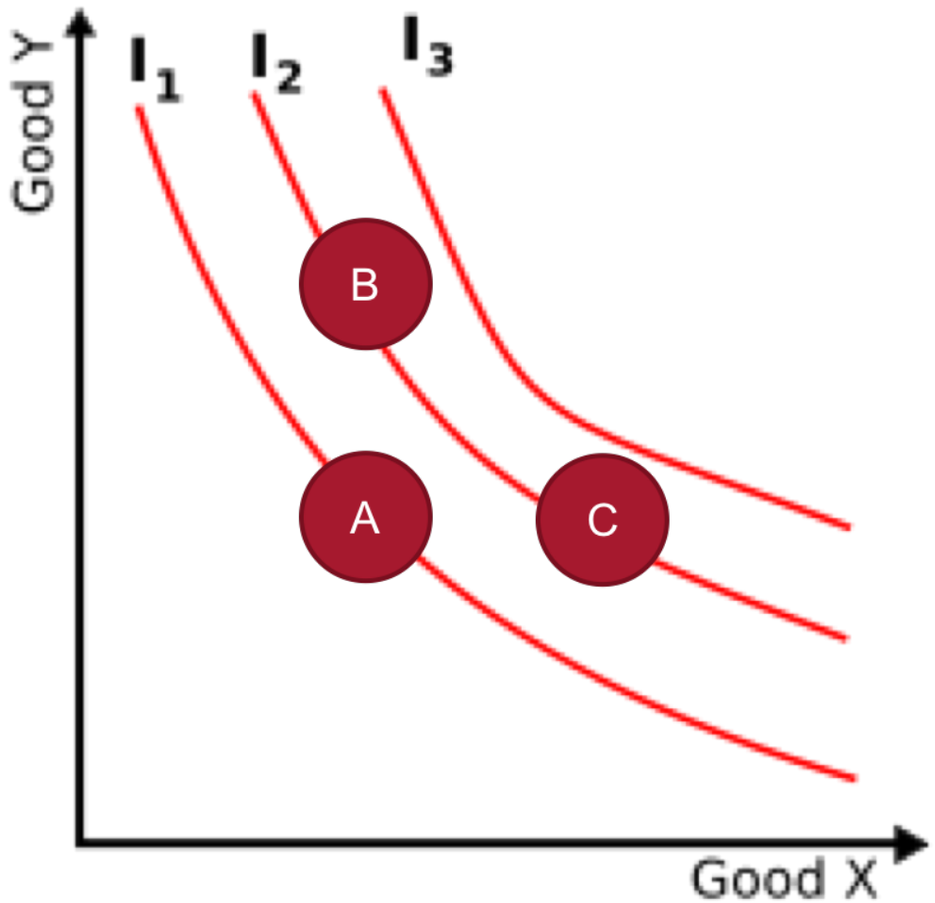
Korting, Christina & Otto, Steven G., 2019. "**Choice Uncertainty and the Endowment Effect**," 2019 Annual Meeting, July 21-23, Atlanta, Georgia 290841, Agricultural and Applied Economics Association.

Choice Uncertainty and the Endowment Effect

Table 3 Summary statistics (Experiment 1)

Treatment	Endowment	N	Mean (Standard Error)
Control	Endowed (WTA)	29	3.26 (0.490)
	Not endowed (WTP)	30	0.94 (0.241)
	Avg. WTA/Avg. WTP		3.47
Taste treatment	Endowed (WTA)	25	2.25 (0.275)
	Not endowed (WTP)	28	1.30 (0.266)
	Avg. WTA/Avg. WTP		1.73

Implications of the endowment effect on individual choice



- Suppose that
  - good Y = extra income
  - good X = extra vacation days
- You are at point A and are offered either higher income or more vacation. You are indifferent between the 2 new states (B and C).

Endowment effect in the wild

- People demand more to give up entitlements such as time, intellectual property, public land, and environmental, health, and safety regulations than they are willing to pay to acquire them.

- People who inherit shares of stock from deceased relatives are refusing to divest those shares, even if they do not fit with that individual's risk tolerance or investment goals.

- Hypothetical selling price for NCAA final four tournament tickets were 14 times higher than their hypothetical buying price.

- The endowment effect has also been raised as a possible explanation for the lack of demand for reverse mortgage opportunities.

Evolutionary perspective

Figure 1. A photograph depicting the token exchange method in capuchins. Here, one capuchin subject, Auric, trades a token for a food reward.

- biased preferences rely on cognitive systems that are more evolutionarily ancient than previously thought

- human economic biases such as loss aversion and reference dependence are shared with an ancestrally related New World primate, the capuchin monkey

- Lakshminaryanan, Venkat, M. Keith Chen, and Laurie R. Santos. "Endowment effect in capuchin monkeys." Philosophical Transactions of the Royal Society B: Biological Sciences 363.1511 (2008): 3837-3844.

Questions?

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