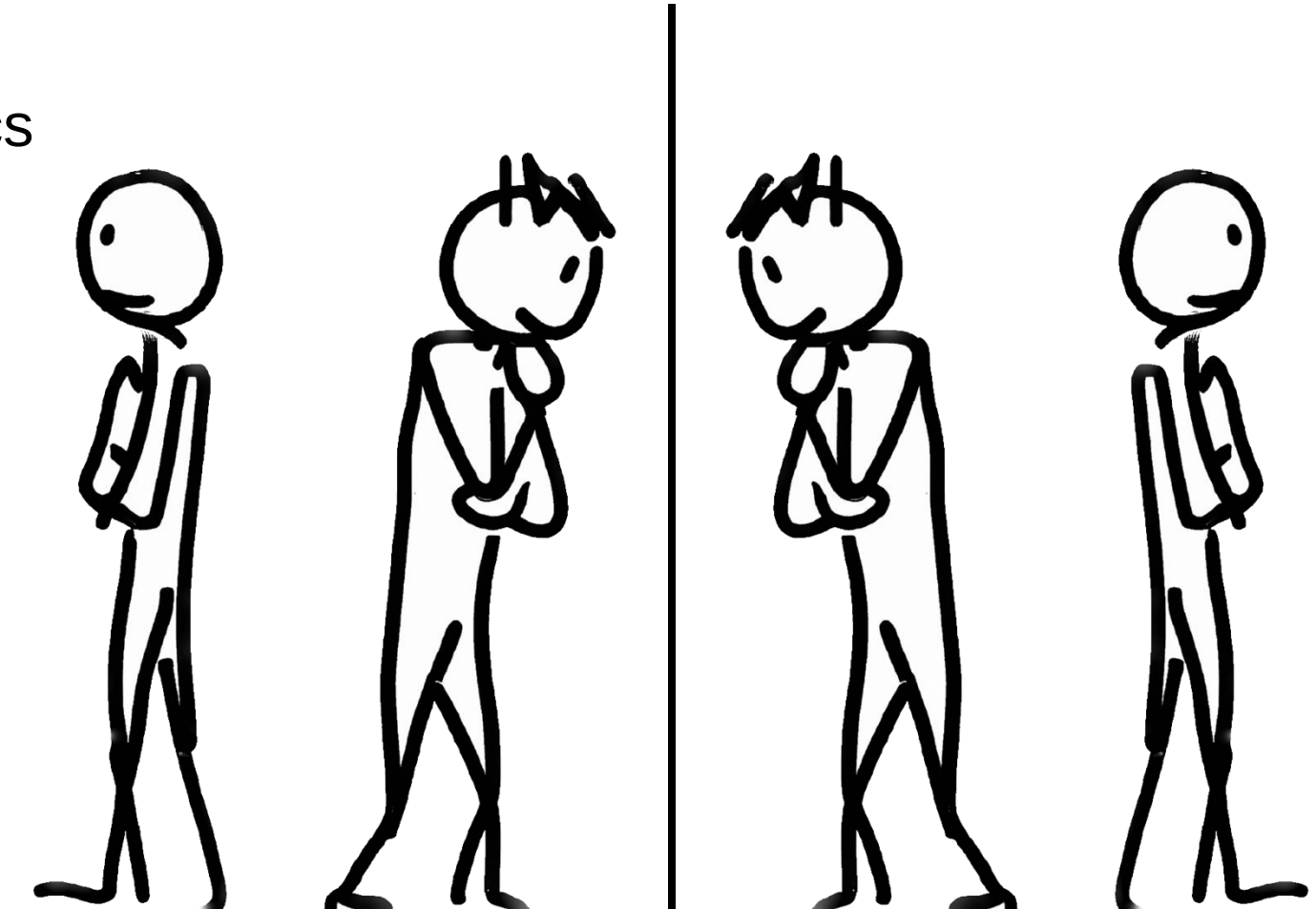
The reflection effect

Notes on Behavioural Economics

Jason Collins



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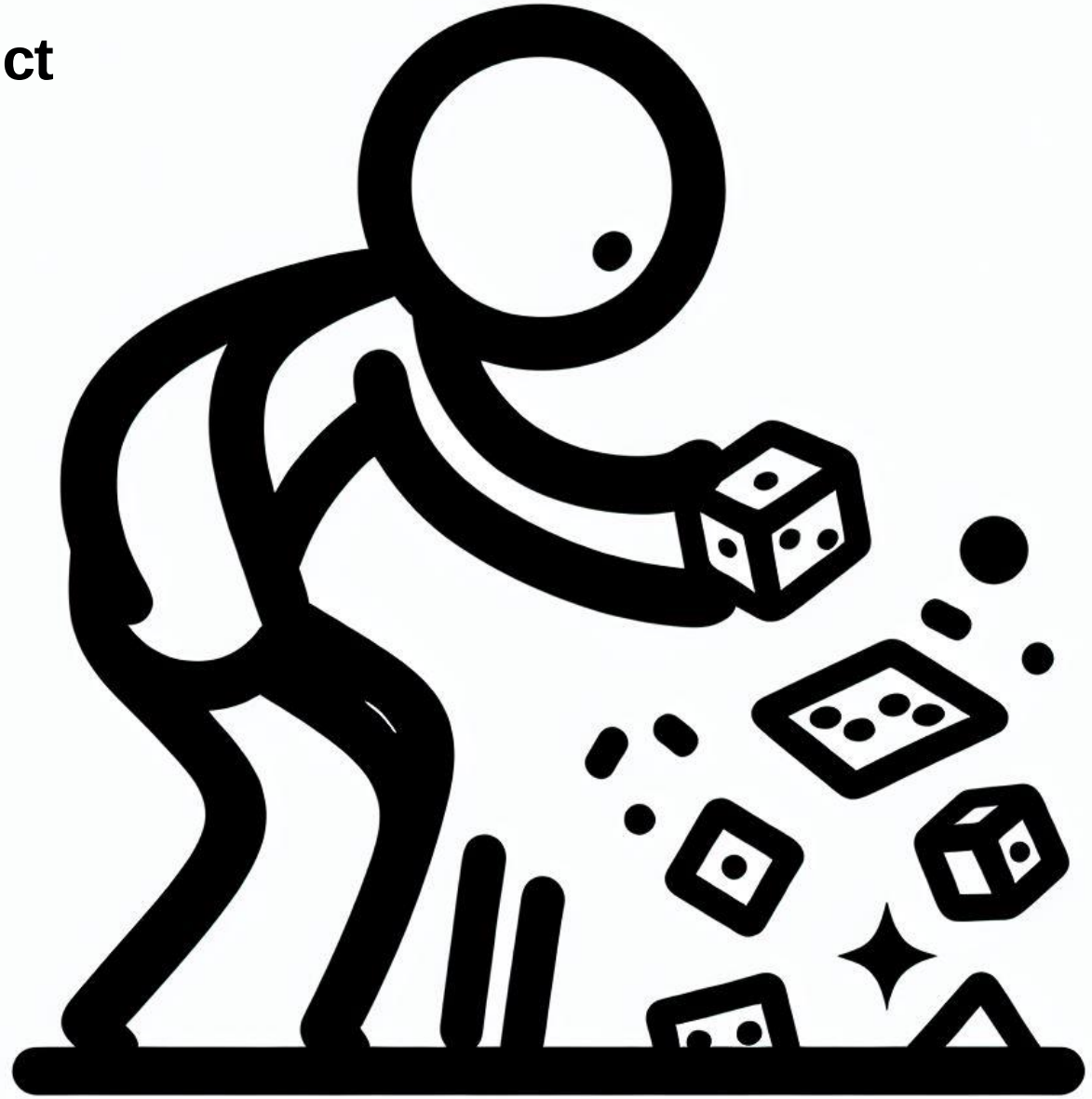

The Asian Disease Problem

Imagine that the U.S. is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimates of the consequences of the programs are as follows:

If Program A is adopted, 200 people will be saved.

If Program B is adopted, there is a one-third probability that 600 people will be saved and a two-thirds probability that no people will be saved.

Which of the two programs would you favour?

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If Program C is adopted, 400 people will die.

If Program D is adopted, there is a one-third probability that nobody will die and a two-thirds probability that 600 people will die.

Which of the two programs would you favour?

The Asian Disease Problem

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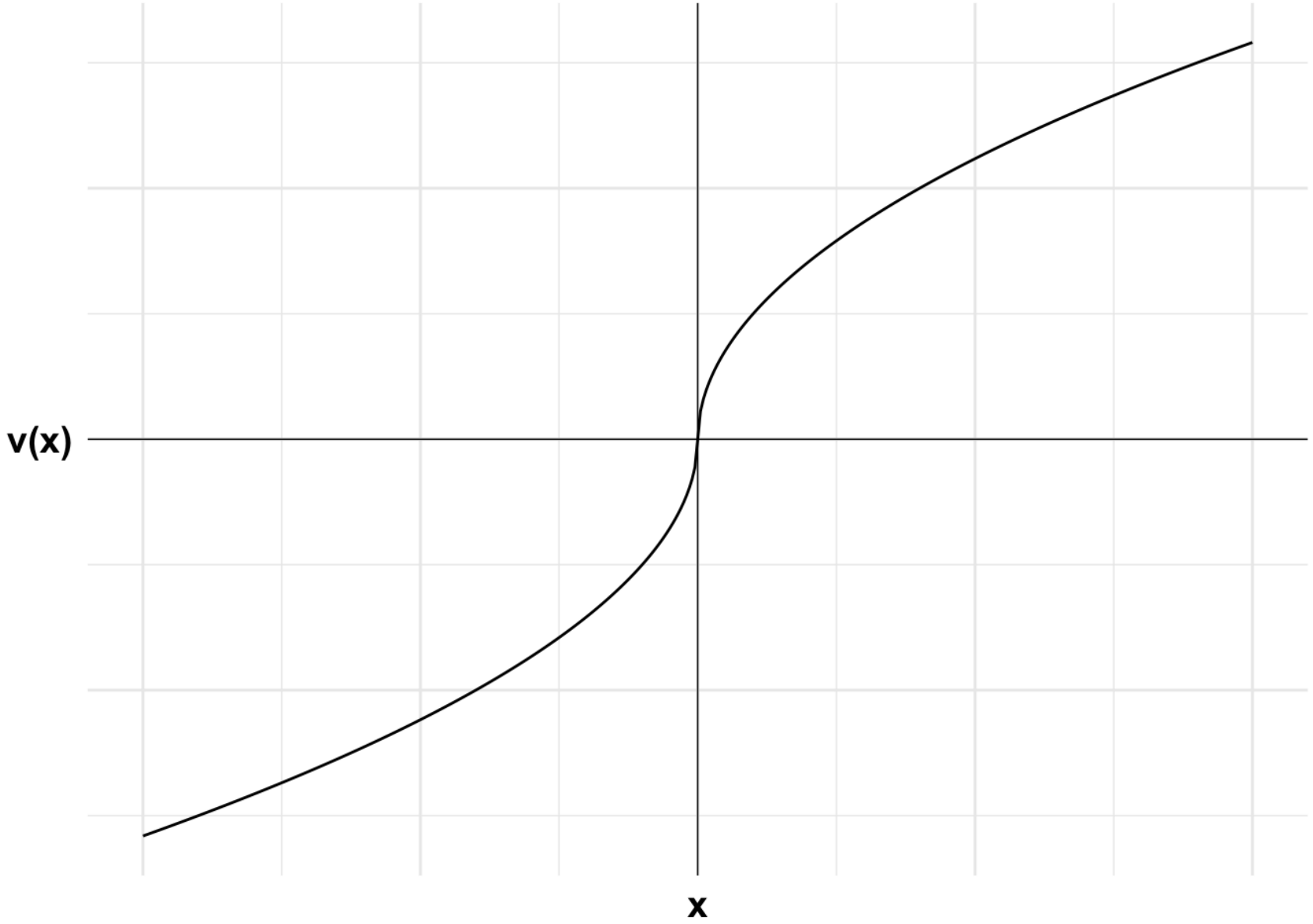
The reflection effect: a value function

$$v(x) = \begin{cases} x^{1/2} & \text{where} \quad x \geq 0 \\ -(-x)^{1/2} & \text{where} \quad x < 0 \end{cases}$$

The reflection effect: plotting the value function



The reflection effect: a numerical example

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The reflection effect: a numerical example

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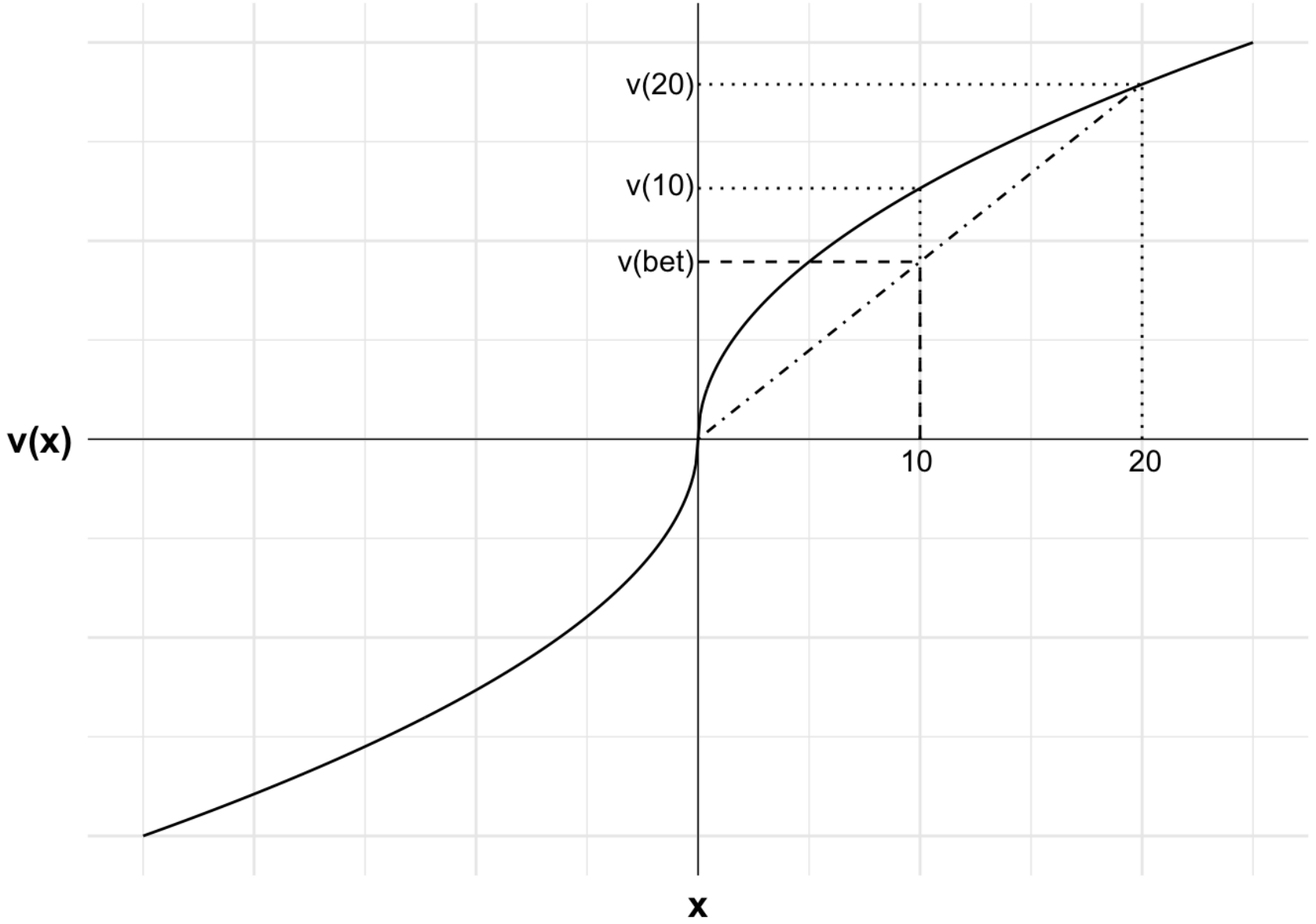
$$= 2.24$$

The reflection effect: a numerical example



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$$v(\text{bet}) = 0.5 \times v(-20) + 0.5 \times v(0)$$

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The reflection effect: a numerical example