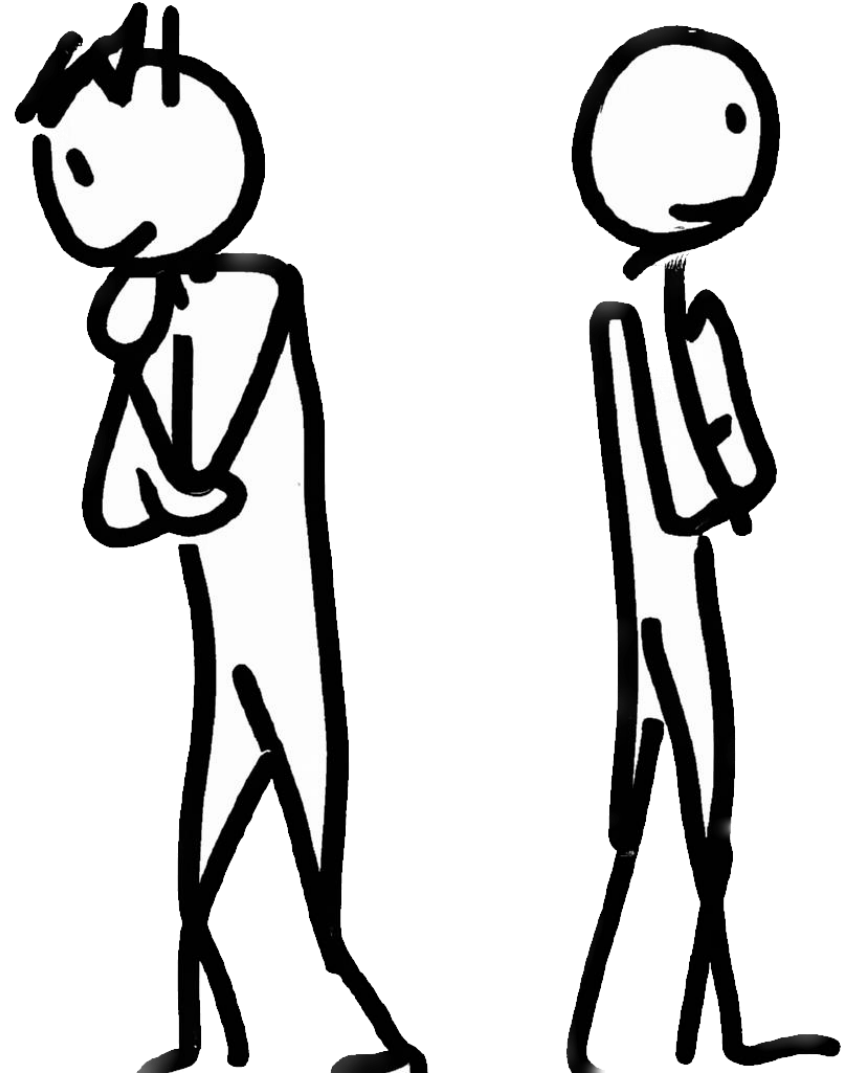


# Continuity

Notes on Behavioural Economics

Jason Collins





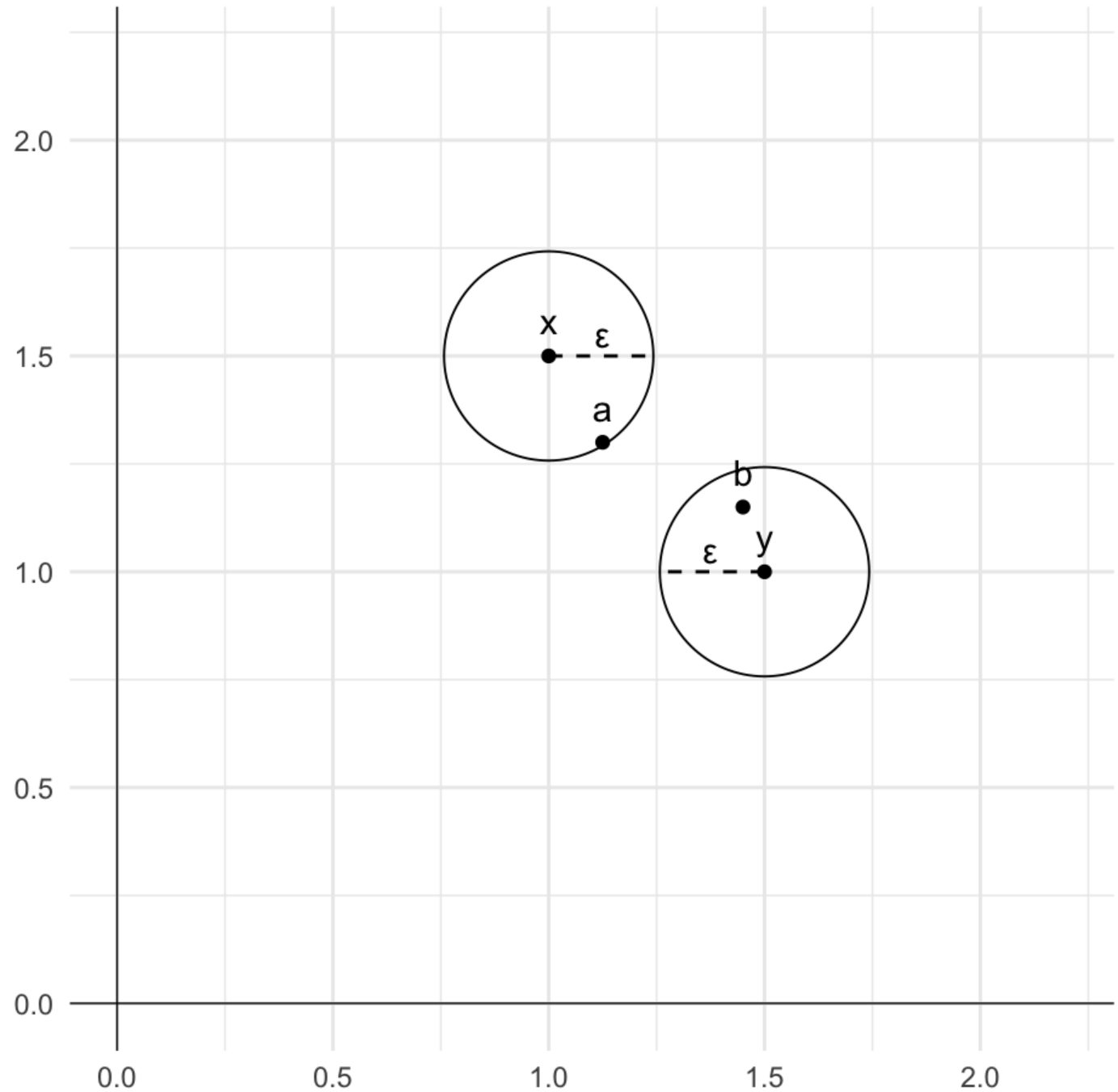
# Continuity

For any  $x \succ y$  there exists a number  $\varepsilon > 0$  such that every bundle  $a$  that is less distant from  $x$  than  $\varepsilon$  and every bundle  $b$  that is less distant from  $y$  than  $\varepsilon$  results in  $a \succ b$ .

# Continuity

For any  $x \succ y$  there are *some* neighbourhoods  $N_\varepsilon x$  and  $N_\varepsilon y$  around  $x$  and  $y$  such that for every  $a \in N_\varepsilon x$  and  $b \in N_\varepsilon y$  we have  $a \succ b$ .

# Continuity

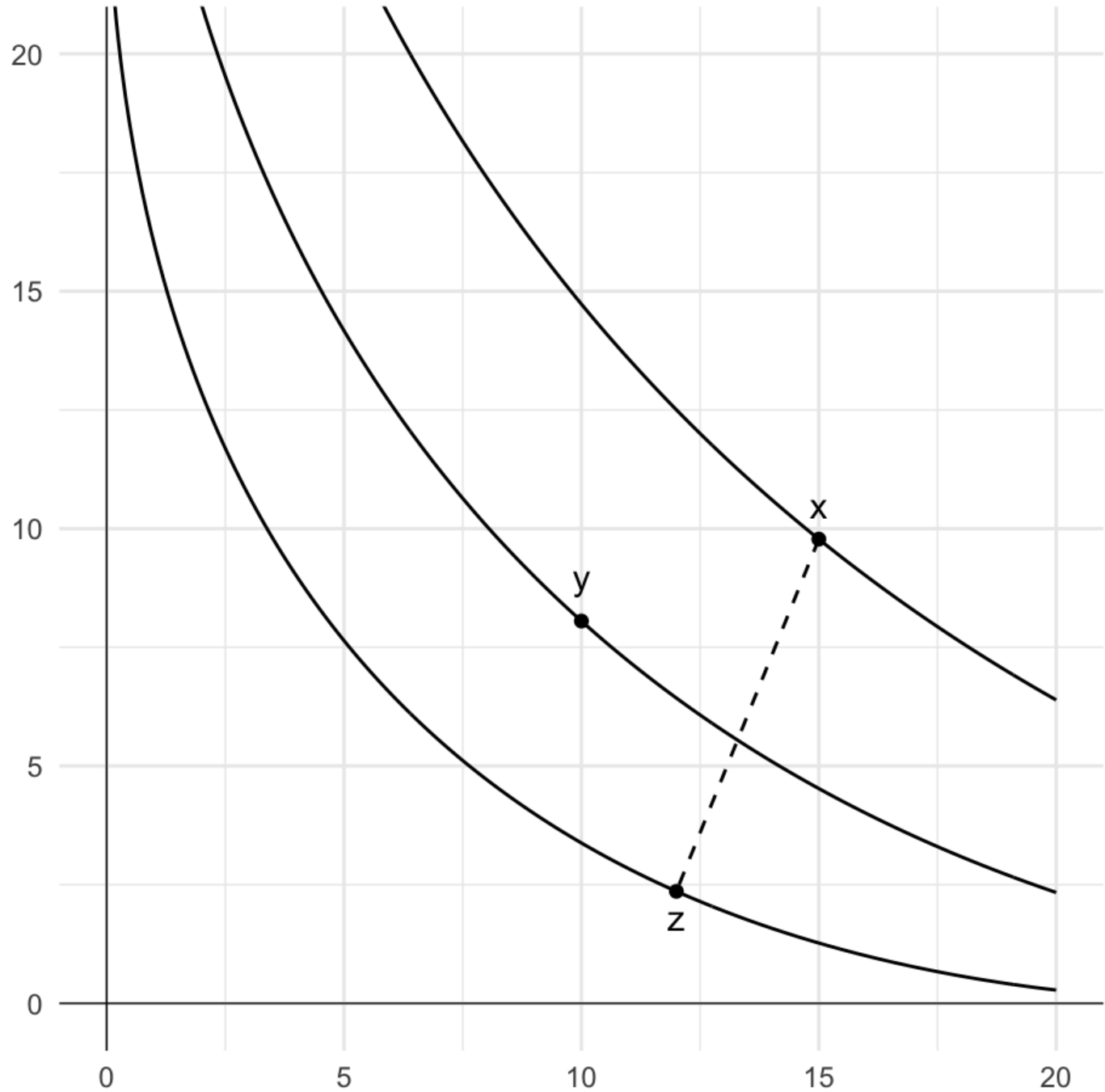


# Continuity

Let  $x$ ,  $y$  and  $z$  be lotteries with  $x \succcurlyeq y \succcurlyeq z$ . Then there exists a probability  $p$  such that  $y$  is equally good as a mix of  $x$  and  $z$ . That is, there exists  $p$  such that:

$$px + (1 - p)z \sim y$$

# Continuity



# Lexicographic preferences

*A.*  $(1, 1)$

*B.*  $(1, 2)$

*C.*  $(1.1, 1)$



# Lexicographic preferences

$A. (1, 1) \quad C \succ B \succ A$

$B. (1, 2)$

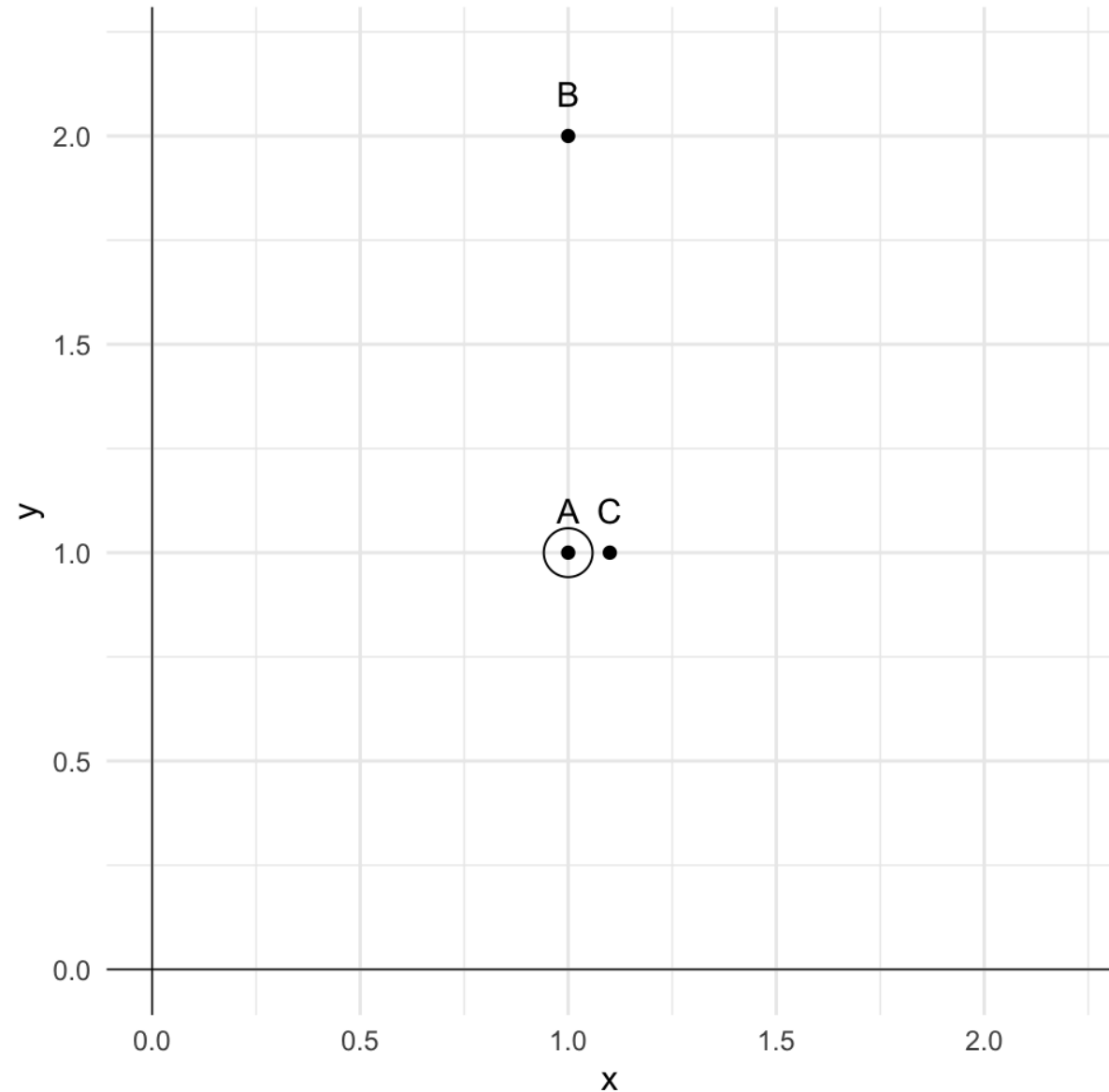
$C. (1.1, 1)$

# Lexicographic preferences

$A. (1, 1) \quad C \succ B \succ A$

$B. (1, 2)$

$C. (1.1, 1)$



# Lexicographic preferences

There is no  $p$  for which:

$$pA + (1 - p)C \sim B$$

$A. (1, 1) \quad C \succ B \succ A$

$B. (1, 2)$

$C. (1.1, 1)$