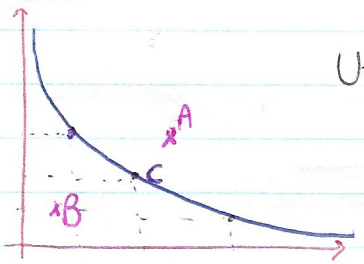
Chapter 2

Indifference Curve

Why Down-ward Slope?

Because of Trade-off

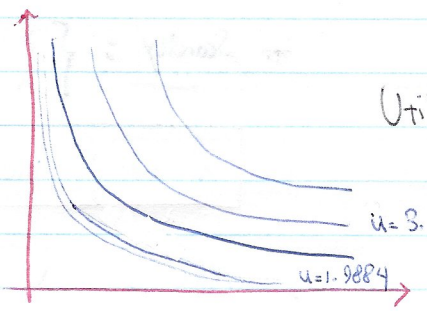


Utility function: $\bar{U}(x,y) = \sqrt{x} + \sqrt{y}$

↓

fixed level of satisfaction

$$\begin{cases} U_A > \bar{U}_C : \text{Better off} \quad (\text{more satisfaction}) \\ U_B < \bar{U}_C : \text{Worse off} \quad (\text{less satisfaction}) \end{cases}$$



Utility function: $u(x,y) = \frac{1}{2}\ln(x) + \frac{1}{2}\ln(y)$

more satisfaction ↑

(*) $u = 3.0359$ means it is better than $u = 1.9884$

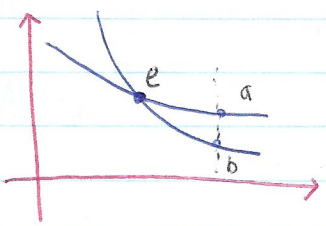
It does not mean it is $\frac{3}{2}$ better ....

(*) but if it was between 3.0359 and 3.045 <

$\Longrightarrow$ Bigger the Better

Consistency

* One's own indifference curves cannot cross each other



a~e and b~e ⟹ a~b !!!

↓

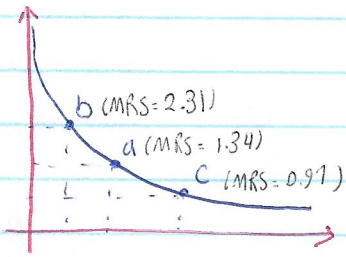
indifferent

Marginal Rate of Substitution

(*) if $\Delta x = 1 \Rightarrow \Delta y \neq 0$

$$MRS = \left| \frac{dy}{dx} \right| \simeq \left| \frac{\Delta y}{\Delta x} \right|$$

$u(x,y) = \sqrt{x} + \sqrt{y} = 7.40852$



MRS → for comparing the points on an indeference curve.

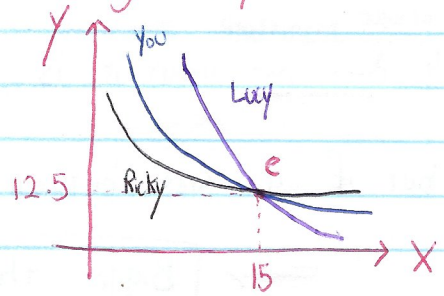
⟹ The value put on some item is regarded as higher than the other by the individual.

* Scarcity : { y is scarce ✓ more value
X is not scarce - is available

X and Y are relatively compared

→ MRS : ↘ declining
↖ increasing

ex. Which one is willing to pay more for extra item of X?



↘ The steepest curve at e.

↓

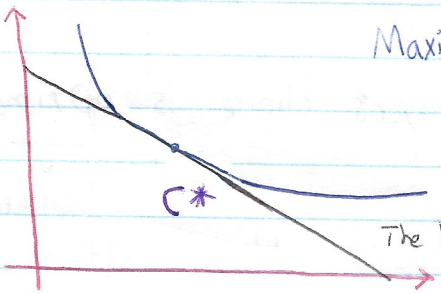
Lucy.

L_{ucy}: $MRS_e = 1.3$ → Lucy is willing to pay $1.3 for extra item of X.

Y_{ou}: $MRS_e = 0.8$

R_{icky}: $MRS_e = 0.5$

The Consumption Optimum

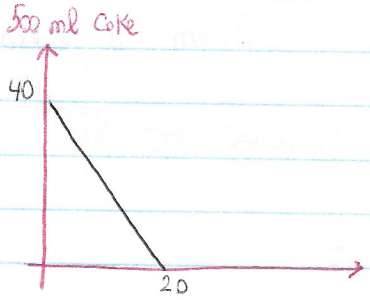


Maximizing the Utility

The budget line / Constraint

Price ratio: $\frac{P_x}{P_y}$

Perfect Substitutes

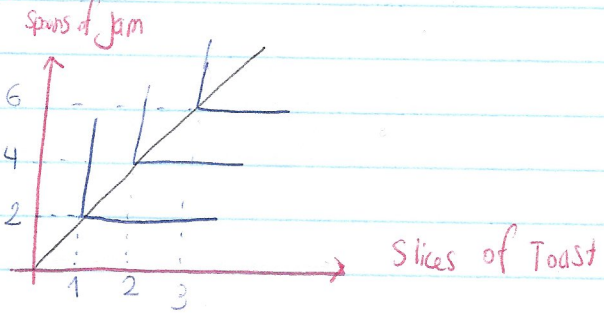


Elasticity: Sensitivity to change

* Law of one price → getting back to equilibrium (Price Ratio)

* Short Selling

Perfect Complements



Nash Equilibrium

Each player's choice is optimal given the other's choices.

optimal → best choice

Equilibrium → when there is no incentive to deviate from a choice given the other's choice

- Wishful Thinking
- Over confidence
- False Consensus effect

Misconceptions of chance

* Which sequence of coin tosses is most likely?
  * H - T - H - T - T - H
  * H - H - H - T - T - T
  * H - H - H - H - T - H

Ans: all the sequences are equally likely to occur.