P51 Q9 Airplane - crashes in Pacific Ocean

2 people Box 100 peanut bags

A + B

no production → endowment

allocations → share of peanuts

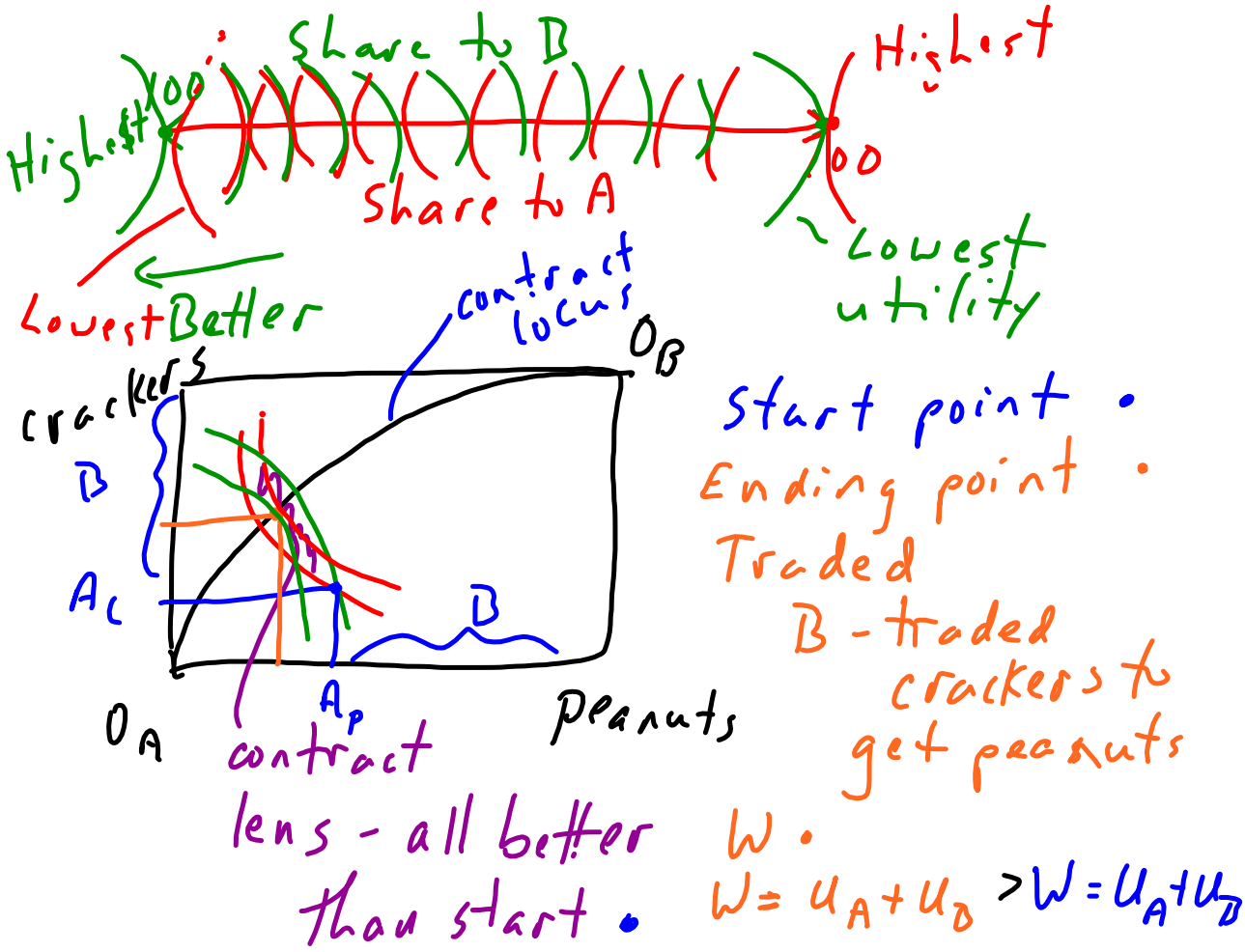
Zero sum -

Share A = 100 - share B

Sh A + sh B = 100

Every allocation is Pareto efficient

Any reallocation makes one person better off but other worse off



Start point •

Ending point •

Traded

B - traded crackers to get peanuts

W •

$W = U_A + U_B > W = U_A + U_B$

Markets fail

- property rights not completely specified
- bundle of rights
  - use
  - exclude — without exclusion can't require payment
  - sell

Rival: Y / N
Exclude: Y / N

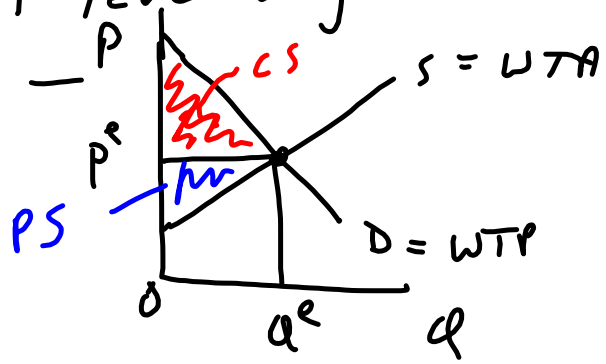
	Rival Y	Rival N
Exclude Y	Private	Club
Exclude N	Common Property	Public

Rival → what used by A not avail. to B
Exclude → prevent use

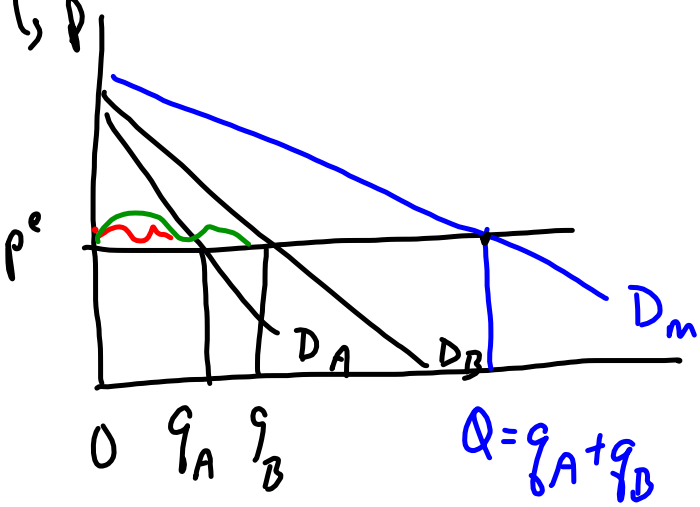
Public goods

- Efficient level of good. ?

Private —



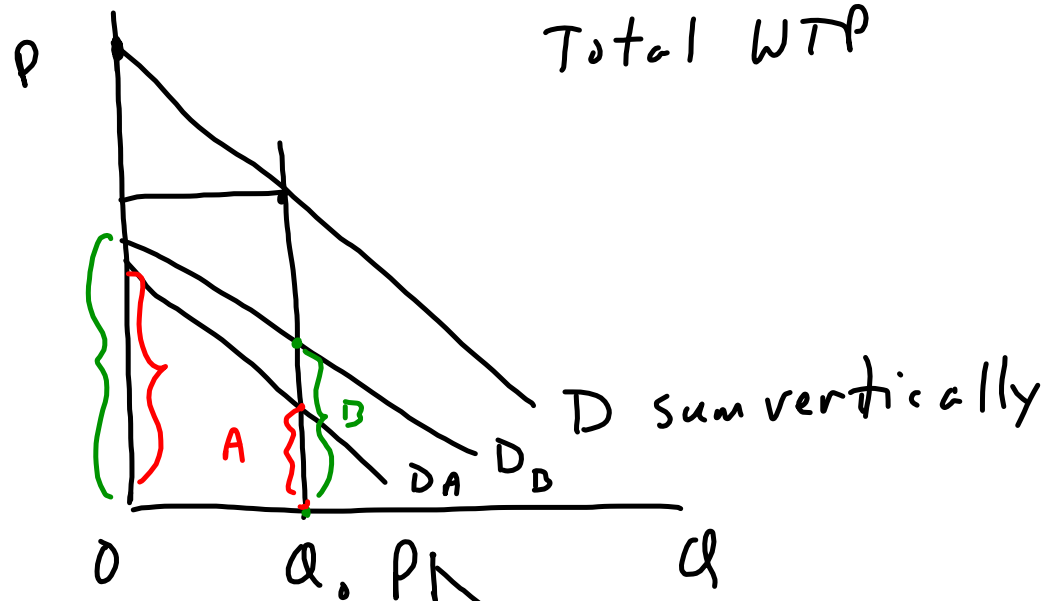
max PS + CS



sum demands on Q axis horizontally

All buyers pay P^e but Q choose q.

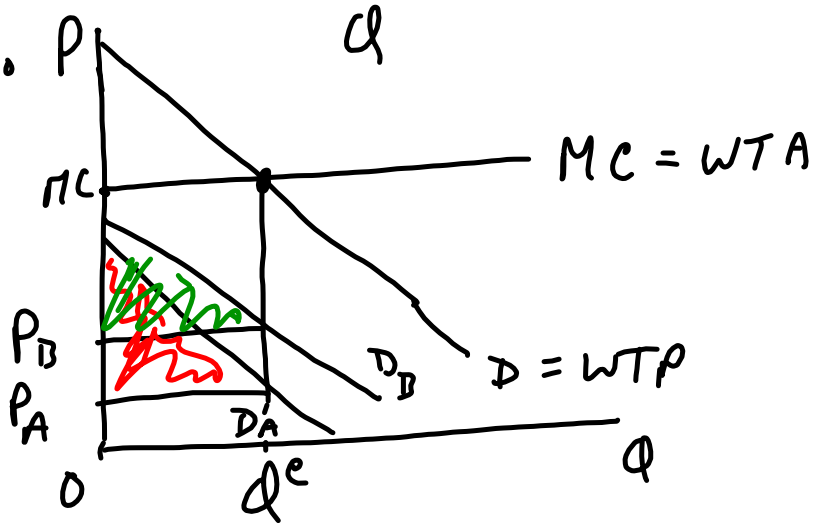
$q_A \neq q_B$



$P_A + P_B = MC$

Erik Lindahl

marginal benefit taxation



Problem with collecting revenue to pay for good → free ride

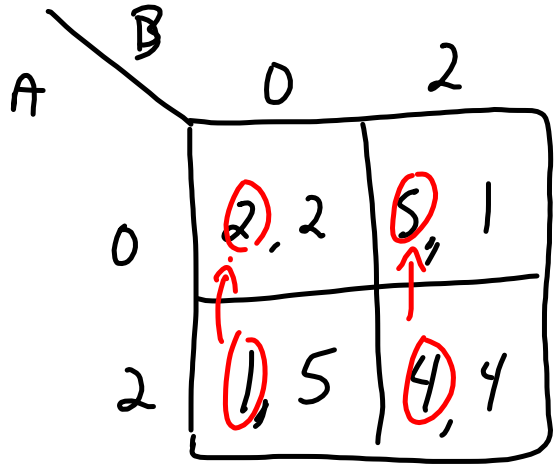
Game - 2 person
- contribute / not
} prisoners Dilemma

A \ B	0	1
0	1, 1	3, 1
1	1, 3	3, 3

A & B have $1
Total $2
Mult = 2 - surplus
good = 2 · $2 = 4
not 3
B → $1 A → $0
$2

contribute $0 weakly dominant

Endow 2 mult = 1.5



Contr $\Sigma^{\#}$ 4
mult · #6 = 4 · 1.5
shares 4, 4
B → if 2 ∝ A 0
2 contr.
2 · 1.5 = 3

5 > 4 - each better off putting in zero
2 > 1

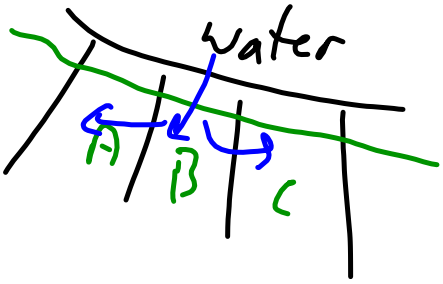
Contribute 0 → dominant strategy
payoff is higher regardless
0 → free riding

How are public goods produced?
(production function)

Standard. $G = m \cdot \sum_{i=1}^{n} g_i$ $G \rightarrow$ total
$g_i \rightarrow$ individual

- free rider →

* Weak link $G = \min\{g_i\}$ - less free riding
(lowest contribution / level of good) - flood protection



* best shot
$G = \max_i \{g_i\}$

everyone else holiday

→ neighborhood watch