Swerve or crash?

Two drivers head for each other: whoever swerves loses a little, a crash costs both a lot. Chicken has two equilibria and a crash if both aim to win; a credible commitment, visible and impossible to undo, decides who gives in. In coordination games both just need to match.

1 The game

chicken

- Ana vs Ben, one road · **swerve** (turn aside; who swerves = "chicken", the coward) or go **straight** · at the same time, no talking · **your move** first (never graded, never stored)
- Table: rows = Ana, columns = Ben · cell `Ana / Ben` · points, **more is better** · ○ = best reply
- **Best reply**: "the move that gives a player the best result, given what the other player does" → here the **opposite** of the other: Ben swerves → straight (1 > 0) · Ben straight → swerve (–1 > –10)
- ⇒ **no dominant strategy** (best whatever the other does): the best move depends on the other

CHICKEN · POINTS

	Ben Swerve	Ben Straight
Ana Swerve	0 / 0	(–1) / 1
Ana Straight	1 / (–1)	–10 / –10

○ = best reply ▢ = equilibrium ┅ = the trap

2 Two equilibria

who gives in?

- **Nash equilibrium** (John Nash, American mathematician, 1950): "a cell where each player's move is a best reply to the other's" = two circles · chicken has **two**: 1 / –1 and –1 / 1
- Not equal: each wants to be the one going straight → both aim for it → **crash –10 / –10** ⇒ the trap
- Practice, café for one: both open –3 / –3 · one opens 4 / 0 · both out 0 / 0 → two equilibria (4 / 0, 0 / 4) · both aim → **–3 / –3**

PRACTICE · CAFÉ · $1,000S A YEAR

	Ben Open	Ben Out
Ana Open	–3 / –3	(4) / 0
Ana Out	(0) / 4	0 / 0

3 Commitment

tie your own hands

- **Commitment**: "a move that takes away your own options, in sight of the other player, so that they must adapt to you"
- Ana throws the steering wheel out → row "Swerve" gone → Ben: –1 > –10 → swerves → **1 / –1** ⇒ lose a choice, win the game
- **Credible** = visible + cannot be undone · promise "I'll never swerve" × (words) · secret disconnection × (unseen → crash) · wheel thrown out, seen ✓
- Practice: public lease, fee $1,000/yr → Ben: –3 vs 0 → out → Ana `4 – 1 = 3` · pays while fee < **$4,000** (at 4 = tie with 0) · general burns the bridge → army must fight → enemy pulls back · rival shop: store already built ✓, words ×, secret plan ×

4 Real case

October 1962

- **Thomas Schelling** (American economist, 1921–2016) · *The Strategy of Conflict* **1960** · Nobel **2005** → gain by visibly limiting your own options
- Cuban missile crisis: **16 Oct 1962** US finds missile sites of the Soviet Union (USSR) in Cuba → **22 Oct** Kennedy (US president): public naval "quarantine" → **28 Oct** Khrushchev (Soviet leader): missiles out
- Read as chicken: public stands → backing down costly → both need a way out that does not look like giving in (US pledge not to invade Cuba) · **one reading**, historians disagree

5 Coordination

just match

- **Coordination game**: "both gain by making the same choice; nobody loses by the other's gain" → best reply = **copy** → two equilibria, no conflict, only guessing
- Side of the road: about **3 in 10** countries and territories drive on the left · Sweden left → right, **3 Sep 1967**, 5 a.m. · same app, same plug
- **Focal point**: an obvious choice both guess without talking · Schelling: meet a stranger in New York → **Grand Central Terminal** (train station), **noon**
- Practice, concert or football: 3 / 2 · 2 / 3 · apart 0 / 0 → two equilibria, different favorites → Ana in her seat first, visibly → Ben 2 > 0 → **3 / 2**

WHICH SIDE OF THE ROAD

	Ben Left	Ben Right
Ana Left	(5) / 5	0 / 0
Ana Right	0 / 0	(5) / 5

PRACTICE · SATURDAY · POINTS

	Ben Concert	Ben Football
Ana Concert	(3) / 2	0 / 0
Ana Football	0 / 0	(2) / 3

6 Spot the game

three questions

- **Chicken**: each wants the other to give in, clash worst for both → bridge, island, fence, strike
- **Coordination**: just match → mall, plug, app, side of the road
- **Prisoner's dilemma** (Lesson 1): one move pays whatever the other does, both worse off → cinema ads, one well

Watch out: chicken has **two** equilibria, not one · both straight is **not** an equilibrium · no dominant strategy · a promise or a secret is not a commitment: credible = seen + cannot be undone · coordination ≠ chicken: matching costs nobody