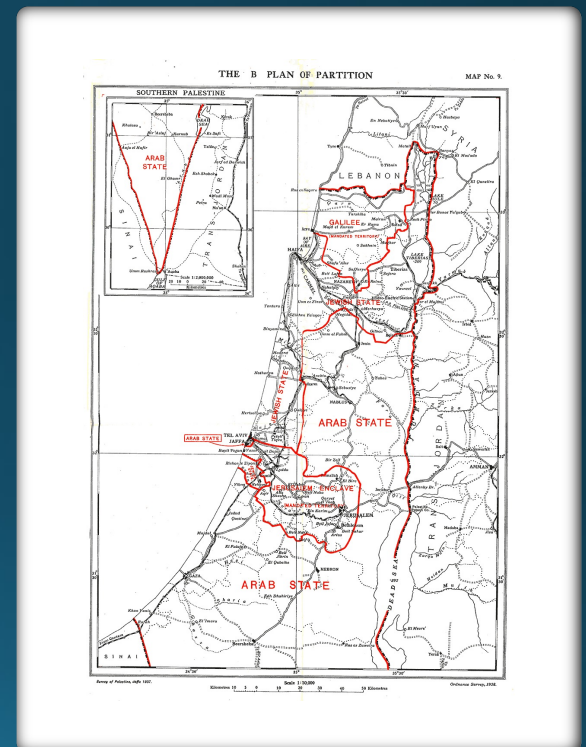Michael Dan

Game Theory of the Israeli-Palestinian Conflict

Why game theory?

Not all encounters between two opponents need be zero-sum

In some situations, two opponents may have reason to cooperate
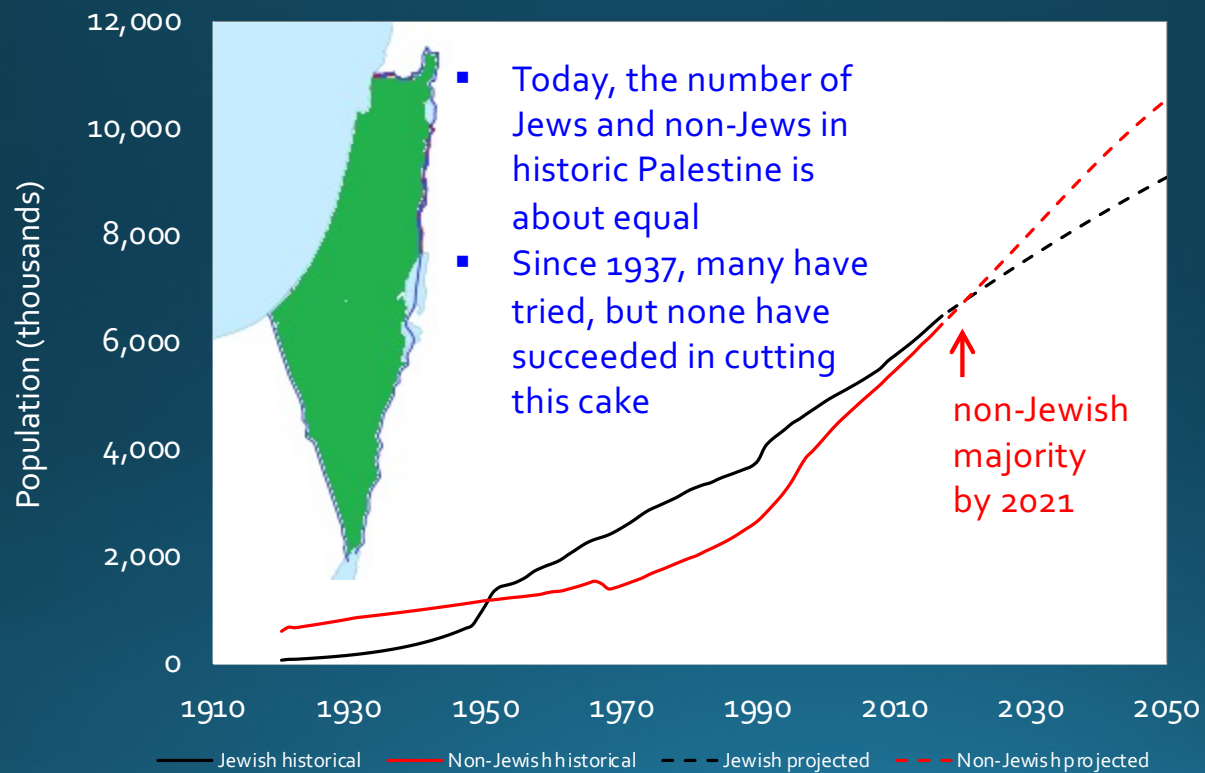
Using a game theory lens, we may find ways of encouraging Israelis and Palestinians to cooperate

Zero-sum game

- The simplest example is the game of "cutting the cake"
  - Two children wish to share a cake
  - One child cuts
  - The other child chooses

- *In a zero-sum game, one side's gains are the other side's losses*

Historic Palestine is not a chocolate cake!

- Today, the number of Jews and non-Jews in historic Palestine is about equal
- Since 1937, many have tried, but none have succeeded in cutting this cake

non-Jewish majority by 2021

Population (thousands)

12,000
10,000
8,000
6,000
4,000
2,000
0

1910   1930   1950   1970   1990   2010   2030   2050

—— Jewish historical   —— Non-Jewish historical   - - - Jewish projected   - - - Non-Jewish projected

Non-zero-sum game

- The classic example is the Prisoner's Dilemma
  - The story involves a robbery, two suspects who are caught and imprisoned in separate cells, insufficient evidence for a full conviction, and separate deals with the police
  - Neither prisoner knows if the other one will accept "the deal"

- *In a non-zero-sum game, there are strategic options that involve cooperation between two opponents*

"The deal": be the only one to betray and you go free

Prisoner B

	keeps quiet	betrays A to the police
keeps quiet	3,3	1,4
betrays B to the police	4,1	2,2

Prisoner A

4 = best
1 = worst

Neither prisoner knows if the other will betray them. A's first choice is to betray B while B keeps quiet. In such a case, A will go free and B will serve 3 years in jail. The opposite is true for B. If they both betray each other, each will serve 2 years in jail. If they both cooperate by keeping quiet (*omertà*), each will serve only 1 year in jail.

Nash vs. Pareto: the essence of the dilemma

Nash equilibrium: a 'no regrets' choice where there is no incentive to deviate from an initial strategy

- Even when a player has an opportunity to consider an opponent's choice, they stick with their script

The Pareto Principle: we should not accept any economic system if there is an alternative that would make everyone better off

- The ideal strategy is one that maximizes collective utility

THERE'S NO CORRECT SOLUTION TO A PRISONER'S DILEMMA

THAT'S WHY IT'S CALLED A DILEMMA

The Velvet Divorce (1993)

Czechoslovakia was only able to survive for two years following the breakup of the Soviet Union. It didn't even hold a referendum before splitting in two.

Slovaks

Pop: 5.45 M
62% Roman Catholic
GDP = $38,300

Czechs

Pop: 10.6 M
75% atheist
11% Catholic
GDP = $40,600

		Cooperation	Sovereignty
	Cooperation	Czechoslovakia (3,3)	Slovaks dominate (1,4)
	Sovereignty	Czechs dominate (4,1)	Czech Republic and Slovakia (2,2)

Nash equilibrium in orange; Pareto-superior in teal

Israel and Palestine?

A binational state has the highest collective value,
but there are enormous historical, cultural, economic,
and structural barriers to overcome

Palestine

Pop: 5.05 M
93% Muslim, 6% Christian
GDP = $2,900

Israel

Pop: 9.15M
74% Jewish
21% Arab
GDP = $39,100

	Cooperation	Sovereignty
Cooperation	binational state (3,3)	Arab state (1,4)
Sovereignty	Zionist state (4,1)	two states (2,2)

Nash equilibrium in orange; Pareto-superior in teal

Can historic Palestine accommodate two sovereign states?

- **Doubtful**
  - Both sides would have to make significant territorial compromises, work together on key issues (e.g., Jerusalem, refugees, security, water), and 'cut the cake'
- **No**
  - The Palestine Royal Commission (1937) failed to 'cut the cake'
  - The Woodhead Commission (1938) failed to 'cut the cake'
  - The UN Partition Plan for Palestine (1947) failed to 'cut the cake'
  - The Oslo peace process (1993-2014) failed to 'cut the cake'
  - The Trump Peace Plan (2020) basically gave the entire cake to Israel

Conclusions

After eight decades of political and diplomatic effort, Zionist victories in 1948 and 1967, and a relentless settler movement, it's clear that historic Palestine cannot accommodate two sovereign states

Possible outcomes now include 1) a single undemocratic apartheid-like state dominated by Jewish ultra-nationalists, 2) a somewhat more democratic state with a non-Jewish majority, or 3) a binational state that transcends demographics (consociational democracy)

'No solution' is also a very plausible outcome because no dominant minority has ever voluntarily ceded power to a majority that it can otherwise subdue