

What is a Player?

מה זה שחקן?

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In applications of Game Theory, a “player” is a

- person,
- household (or family),
- team,
- country,
- persuasion (political, חרדי, חילוני, כיפה סרוגה)
- community,
- corporation,
- workplace (hospital, research center),
- species or other population,
- ...

But, it isn't **really** that way.

Usually, this is understood as an idealization, a kind of “small worlds” principle (Savage). In games where, say, **countries** are modeled as players, the “real” players are the individual citizens, with their individual goals and individual decisions and individual free will. It's only because this “true” game is too big and unwieldy to analyze that, it is held, game theorists model players as they do.

Today, I'm going to try to sell the idea that it **IS** “really” that way: that in large part,

**collectives are like individual people,**

and may be thought of as such.

And, perhaps, not only in Game Theory.

## Individual People

- composed of cells
- grouped in organs & limbs
- which are **interdependent**
- change over time; in particular, age and die
- have diseases
- and internal mechanisms to fight them
- have relationships with others – friendly or hostile
- have internal struggles
- make decisions – consciously or otherwise

## Collectives

- composed of people
- grouped in economic, social, political, ... entities
- which are **interdependent**
- change over time; in particular, age and die
- crime, pollution, ...
- police, courts, public awareness, ...
- alliances, wars, economic cooperation and barriers..
- have internal struggles
- make decisions – centrally or otherwise

# Individual Will and Collective Will

Individual “will” is heavily influenced by the collective:

- in the family: choice of careers by children
- by and large, people don't change persuasions
- by and large, people identify with the collectives to which they belong – and vice versa
- work ethic (hospitals, research centers)
- caused by communication and incentives

ויקרא כ"ד, י"א: ויקוב ... את השם ויקלל ...  
ושם אמו שלומית בת דברי למטה דן.

רש"י על אתר: מגיד שהרשע גורם **גנאי לו, גנאי**  
**לאביו, גנאי לשבתו.** כיו"ב, (שמות ל"א, ו')  
אהליאב בן אחיסמך למטה דן – **שבח לו,**  
**שבח לאביו, שבח לשבתו.**

# Personification in Science

- social insects
- N-M stable sets: Hart's theorem
- population equilibrium = Nash equilibrium  
(Maynard Smith and Price, 1972)



# Personification in the Torah

שמות י"ד, י': וישאו בני ישראל את עיניהם,  
והנה מצרים נוסע אחריהם, וייראו מאד.

רש"י: בלב אחד, כאיש אחד.

שמות י"ט, ב': ויבואו מדבר סיני ... ויחן שם  
ישראל נגד ההר.

רש"י: כאיש אחד, בלב אחד.

# Possible Implications

- “Full world” analysis of game situations.
- Moral judgment of collectives.

# Collectives and Your Humble Servant

- household
- biological family
- nation and country
- scientific family
- Game Theory community
  - in the world
  - in Israel
  - at the Hebrew University
  - the Center for the Study of Rationality

תודה רבה רבה

Thank you *very* much