

# Intro to Formal Political Analysis: Why Game Theory? What is Game Theory?

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- Like all models, simplified representation to gain insight
- Formal language for strategic interactions
- Robust predictions about human behavior?
- **Caveat!** Like all models, only as good as the appropriateness of the assumptions

# Decision Theoretic Models

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- $\succsim$  is a preference relation over outcomes.

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  - Indifference relation,  $x \sim y$

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  - Transitivity: A preference relation  $\succsim$  is transitive if and only if for any  $x, y$ , and  $z$  in  $X$ , if  $x \succsim y$  and  $y \succsim z$ , then  $x \succsim z$

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- **Note** that this does **not** mean the decision maker's preferences have to be qualitatively "rational" or "self-interested"

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  - A payoff function  $v$  where  $v(\text{orange}) = 1$ ,  $v(\text{apple}) = 10$ , and  $v(\text{banana}) = 100$  would also represent Pat's preferences