

# Lecture 11 Game Plan

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- Reputation and “strategic irrationality”
- Course feedback

# Credibility and Reputation

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*"This is our very soul ... our whole life.  
For them, it's just another field."*

- Edwin Land, Polaroid founder, reacting to Kodak's entry into instant photography

Source: Dixit, Avinash, and Barry Nalebuff. *Thinking Strategically: A Competitive Edge in Business, Politics, and Everyday Life*. W. W. Norton & Company, 1991.

# Kodak's assessment

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- Kodak took care to enter gently
  - Kodak film and cameras were incompatible with Polaroid's
  - So Polaroid could still milk profits from its established customer base
- With Kodak's deep pockets, there was no way they would leave
- Thus, Polaroid was going to give in

# Polaroid's Growl

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- Polaroid responded by not giving in immediately, and saying that it *would never* give
- How should Kodak react to such statements? Why?

# Growling Resolve

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- Maybe growling changes Polaroid's payoffs enough that it *wants* to fight

See Figure 23.3 in:

Kreps, David M. *Microeconomics for Managers*. W.W. Norton & Company, 2004: 556-73. ISBN: 0393976793.

# Growling Semi-Resolve

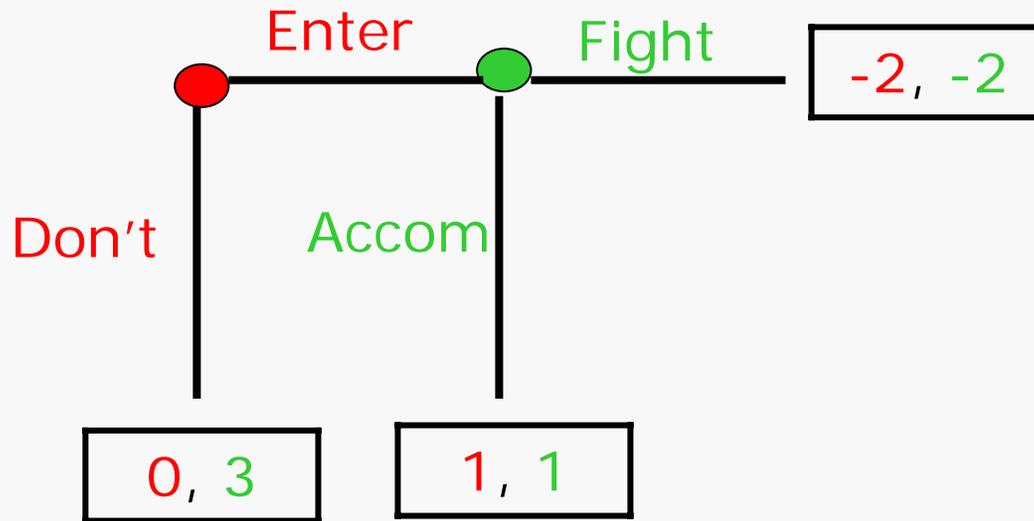
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- What if growling doesn't change Polaroid's payoffs enough that it wants to fight?

See Figure 23.4 in:

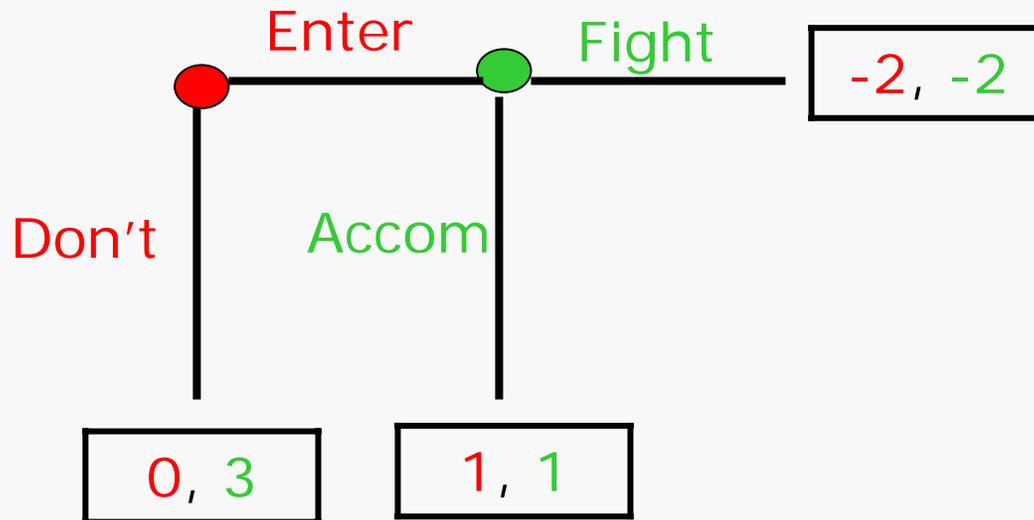
Kreps, David M. *Microeconomics for Managers*. W.W. Norton & Company, 2004: 556-73. ISBN: 0393976793.

# Reputation in Repeated Games



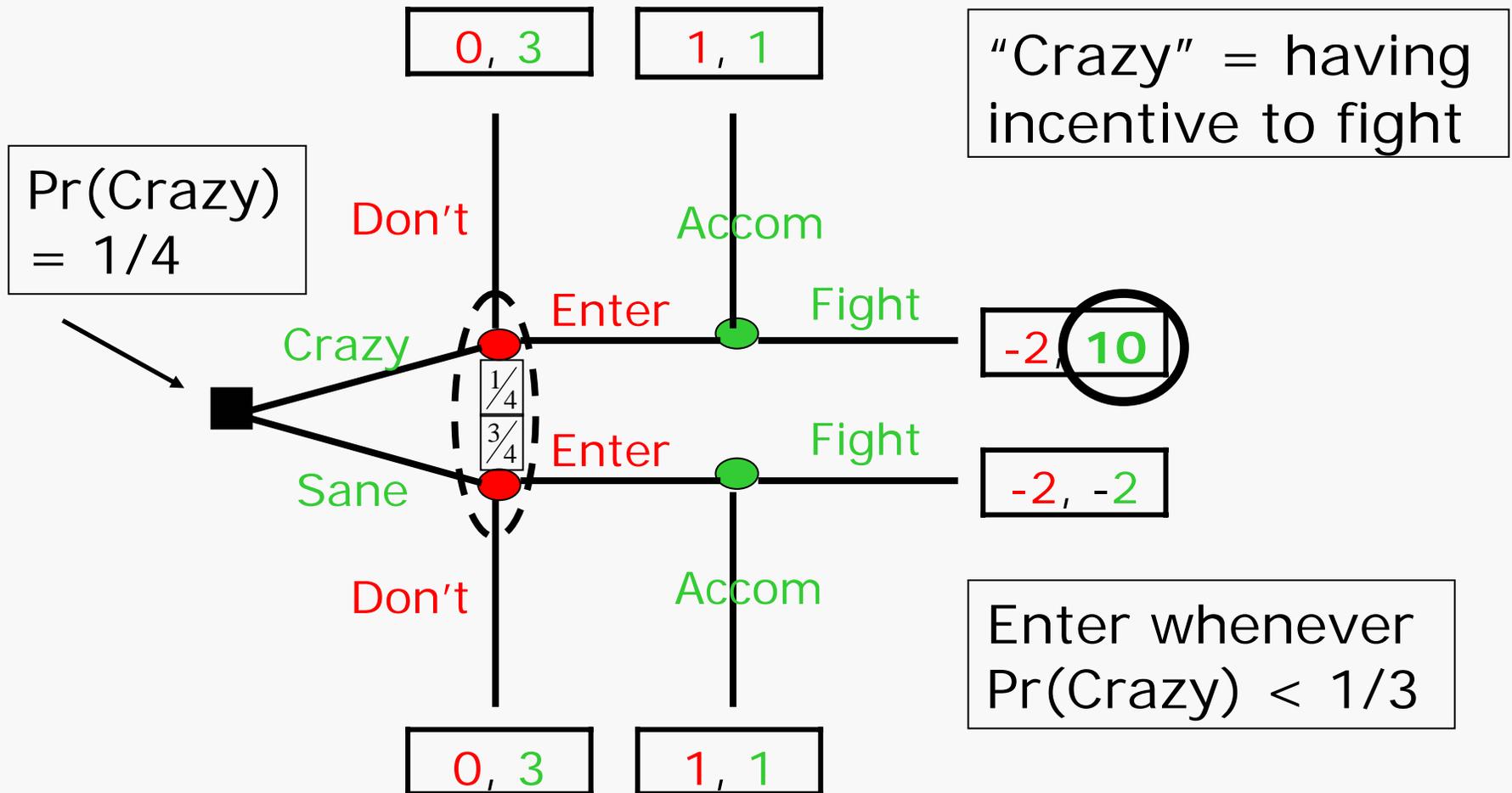
- Suppose incumbent monopolist always faces 80% chance that another entrant will come along
- Does this change things?

# Reputation in Repeated Games

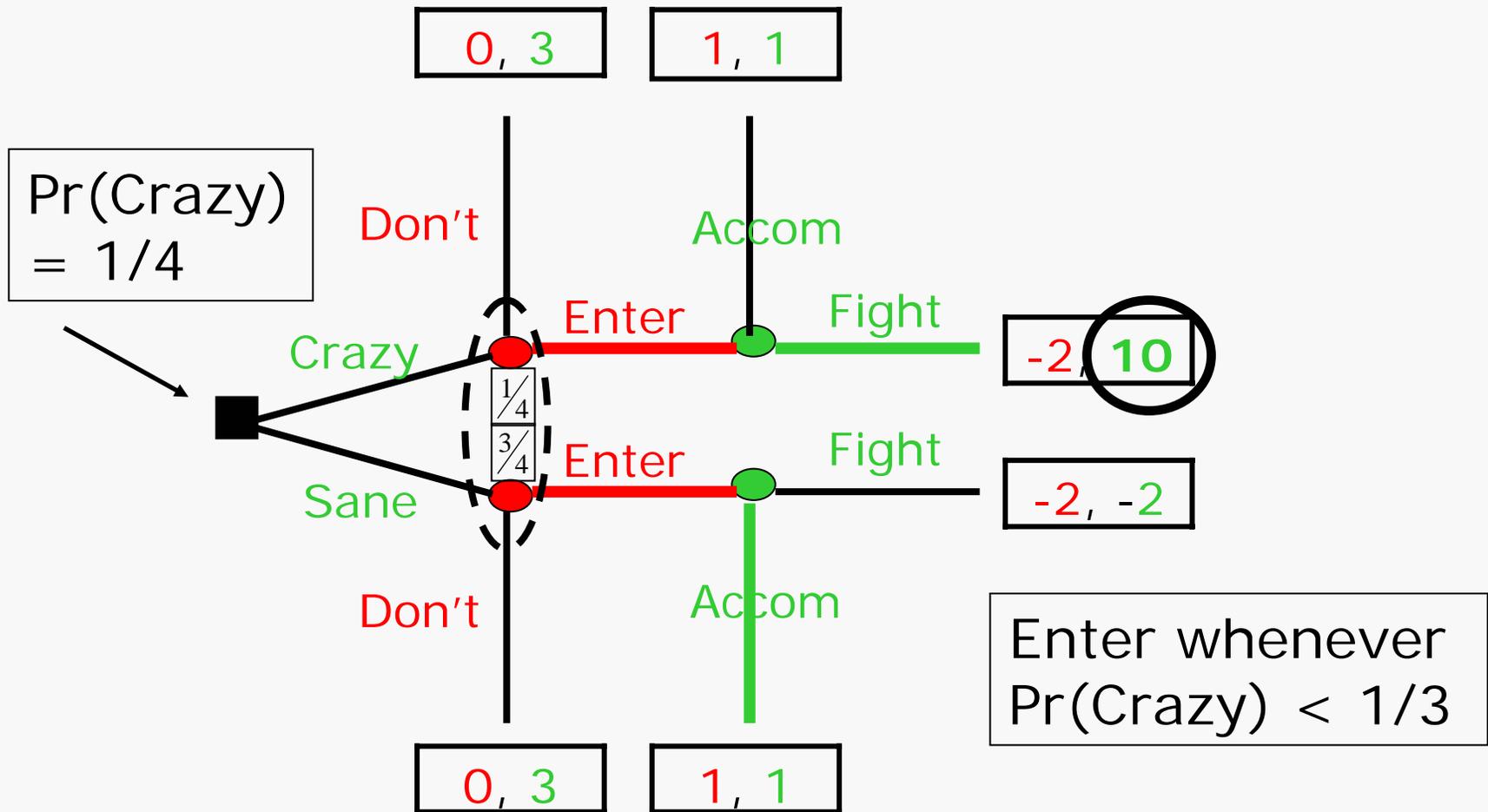


- Fighting **costs 3 today**
- If Fighting deters next entrant and the one after that, etc.. it has **benefit 2 in every future period**
  - benefit  $2(.8 + .8^2 + \dots) = 2(1/.2 - 1) = +8$
- Fighting rational if it preserves "reputation"

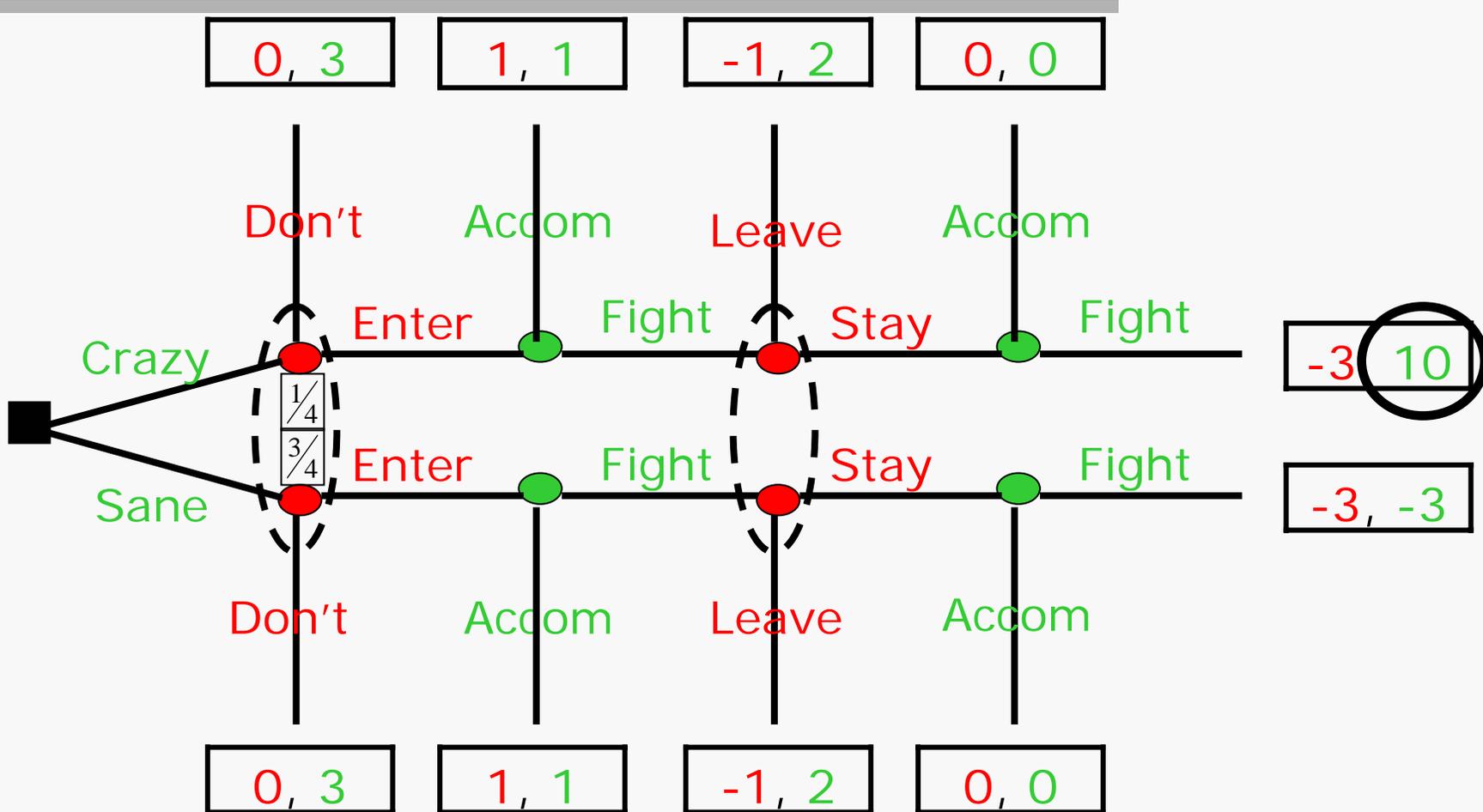
# "Craziness" to Deter Entry



# Not Crazy Enough ...



# Responding to "Craziness"



- What is the sequential equilibrium of this game?

# In-Class Game

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Crazy(?) Incumbent Game

# Crazy(?) Incumbent: Rules

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- Incumbent learns whether it is “Crazy” or “Sane”
  - “Crazy” incumbents love to fight
- Sequence of decisions
  1. Entrant – Enter?
  2. If so, Incumbent – Fight?
  3. If so, Entrant – Stay?
  4. If so, Incumbent – Fight?
    - In last stage, only Crazy want to Fight.

# Crazy(?) Incumbent: Payoffs

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- See handout for details

# Get Crazy!

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We will play in sets of five people

- one Entrant
- four Incumbents

The Entrant may Enter any/all of the four markets

One of the four Incumbents is Crazy!

# Get Crazy!

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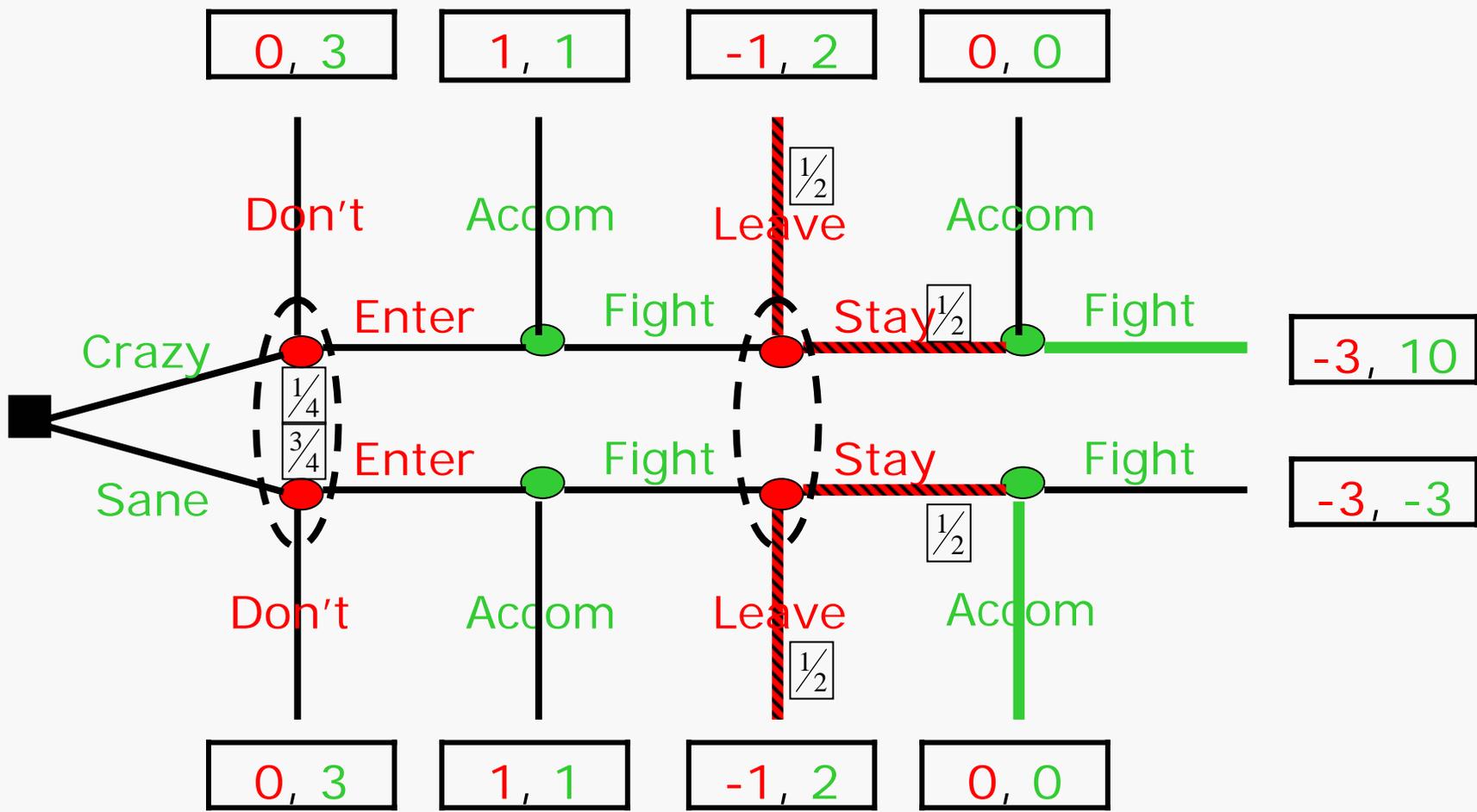
- First, each Incumbent will learn whether it is Crazy or Sane
  - not allowed to credibly reveal this
- Next, Entrant decides which (if any) of the four markets to enter
- In markets with entry, Incumbents decide whether to fight
- In markets with fighting, Entrant decides whether to stay
- In markets with Entrant staying, Incumbent decides whether to Fight

# Sane Act Crazy

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- Some (but not all!) Sane must Fight
  - if all Fight, entrant will Stay for sure
  - if none Fight, entrant will Leave for sure
- So, Sane must be indifferent to Fighting
- This requires that the entrant must Leave with probability  $1/2$  after Fight

# The Million Dollar Question: Will Entrant Enter?

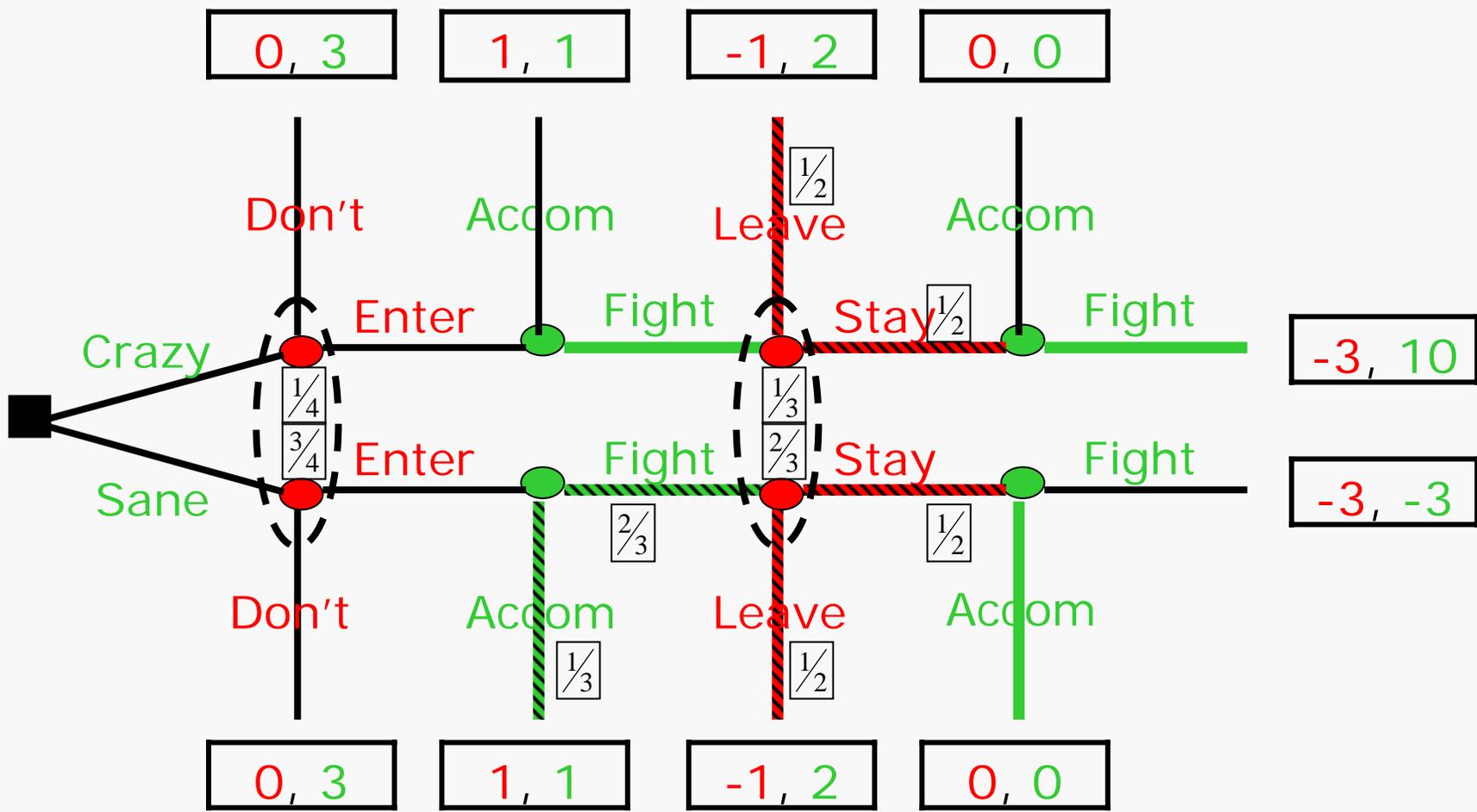


# Entrants Blink

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- Some (but not all!) entrants must Leave
  - if all Leave, Sane will Fight for sure
  - if none Leave, Sane will Accom for sure
- Entrant must be indifferent to Leaving
- This requires that incumbent be Crazy with probability  $1/3$  *conditional on Fight*
  - so 50% of 75% Sane will Fight

# The Million Dollar Question: Will Entrant Enter?



# Entrant Stays Out

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- What happens if entrant enters?
  - all Crazy Fight (25%) plus 2/3 of the Sane Fight (50%)
  - *only get Accomodation 25%*
- Entrant should stay out
- What tips the balance is that Entrant must worry about both:
  1. Crazy opponents
  2. Sane opponents *acting* crazy (!)

# Summary

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- Reputation can help establish credibility in repeated games if losing reputation is costly:
  - lost “mystique”
  - others know you aren't Crazy