

Spatial Theory in 2-space

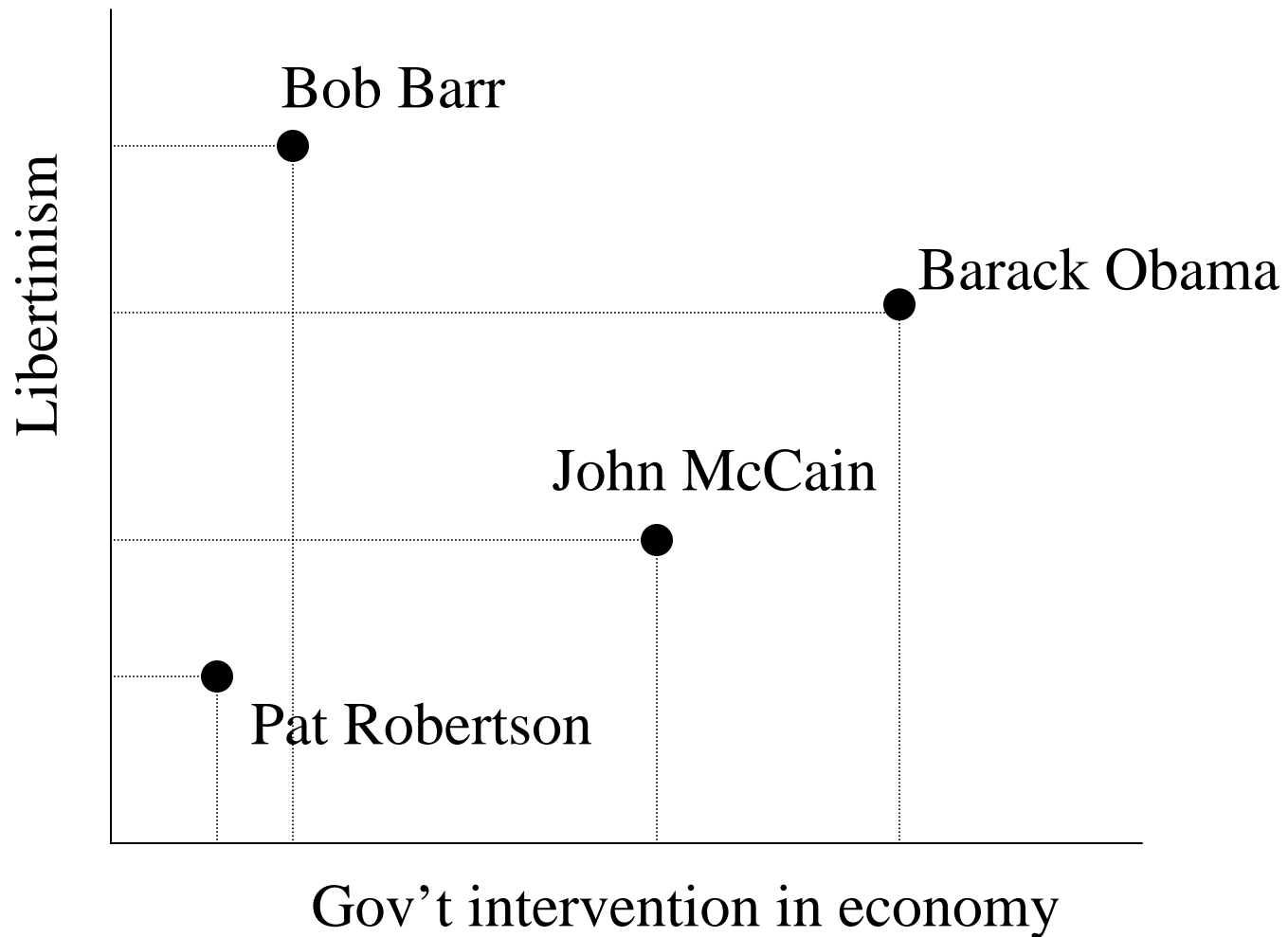
17.251/252

Fall 2008

Throat-clearing

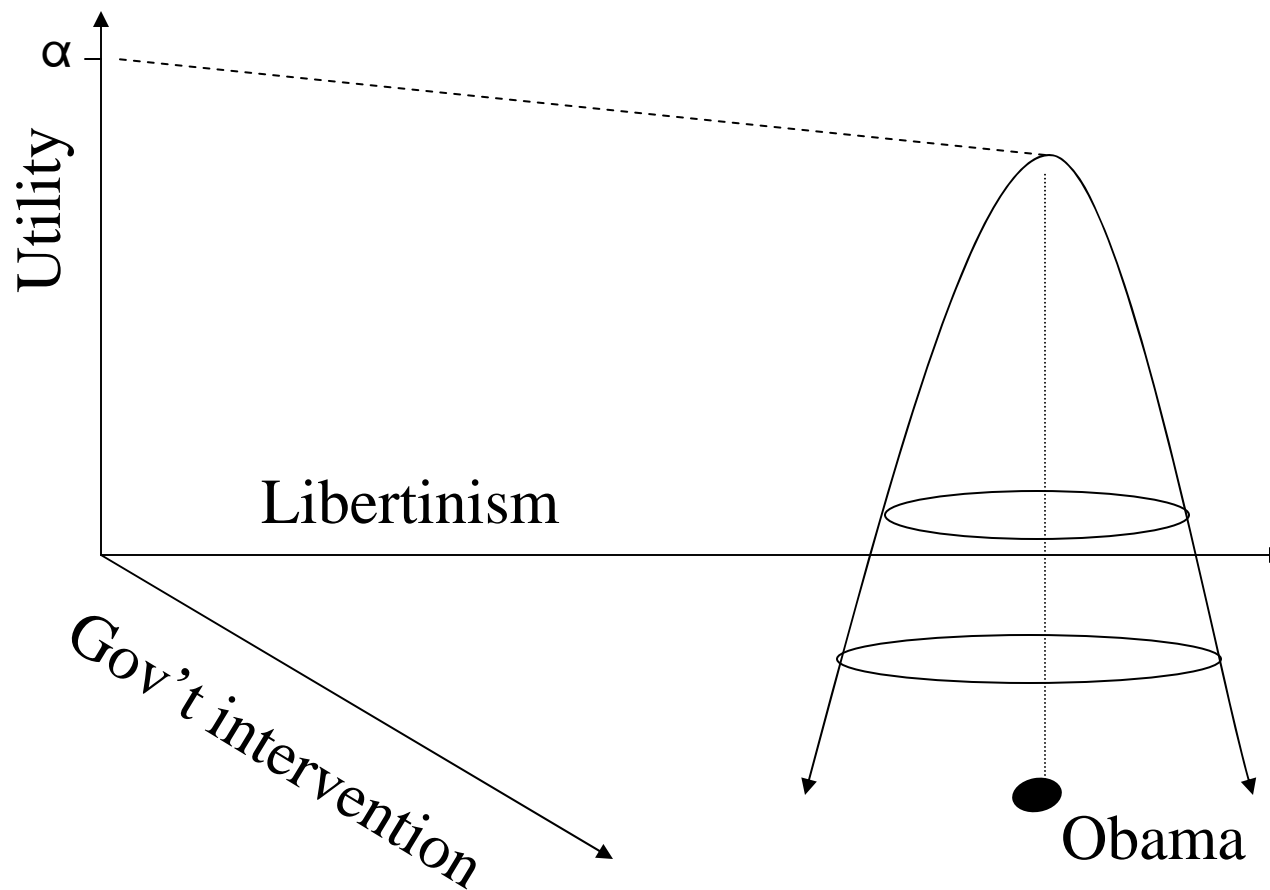
- Fundamental finding of unidimensional spatial model
 - Pure majority rule: the median prevails
 - More generally: the pivot prevails
- Fundamental finding of multidimensional spatial model
 - The center doesn't hold
 - Preferences can't induce equilibria
 - \therefore institutions (or something else) must enter to provide stability

Basic set-up: Ideal points



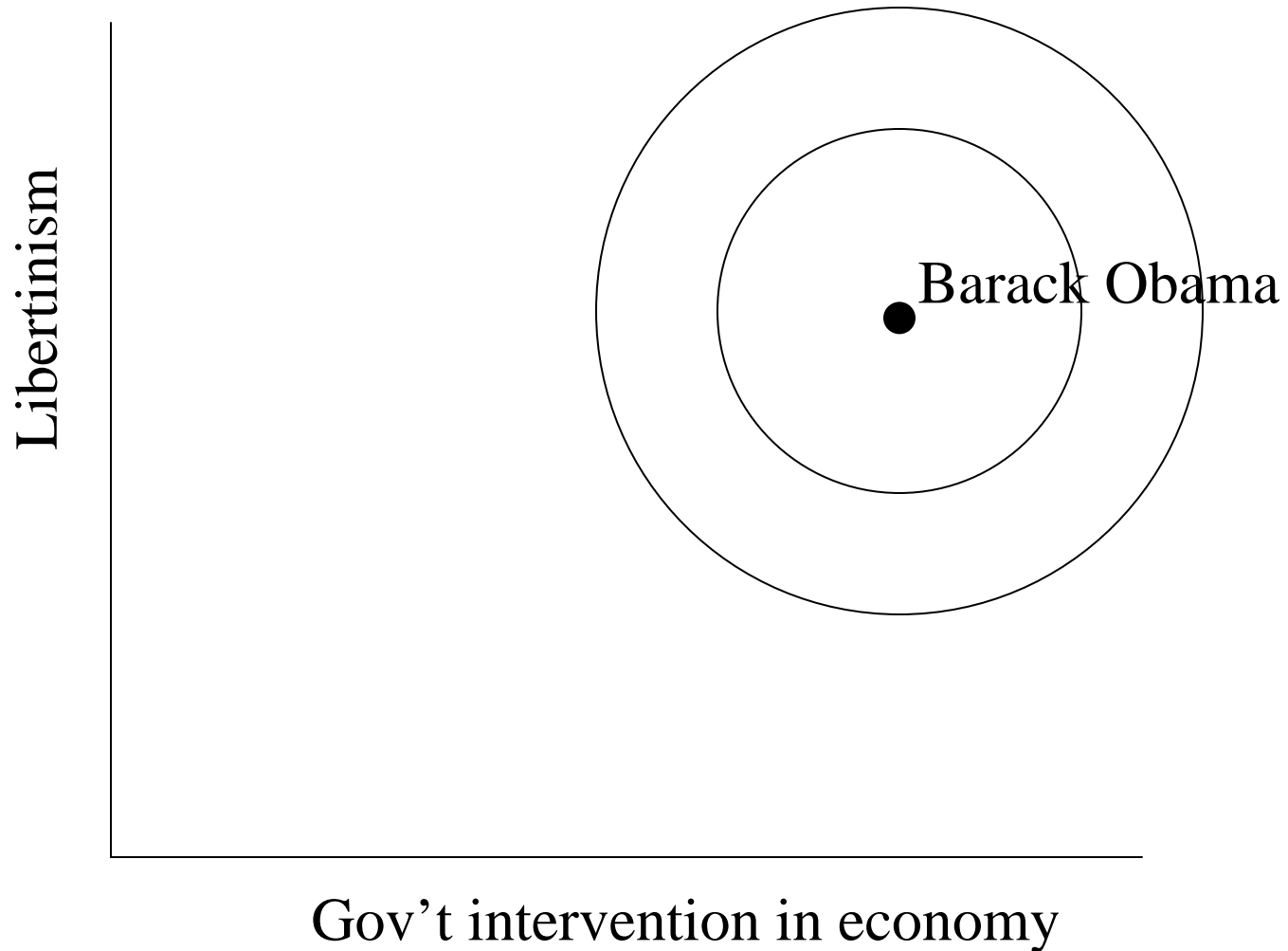
Basic set-up: Utility curves

$$U_{Obama} = \alpha - \beta(x_{Obama} - x)^2 - \gamma(y_{Obama} - y)^2 \pm \delta(x_{Obama} - x)(y_{Obama} - y)$$



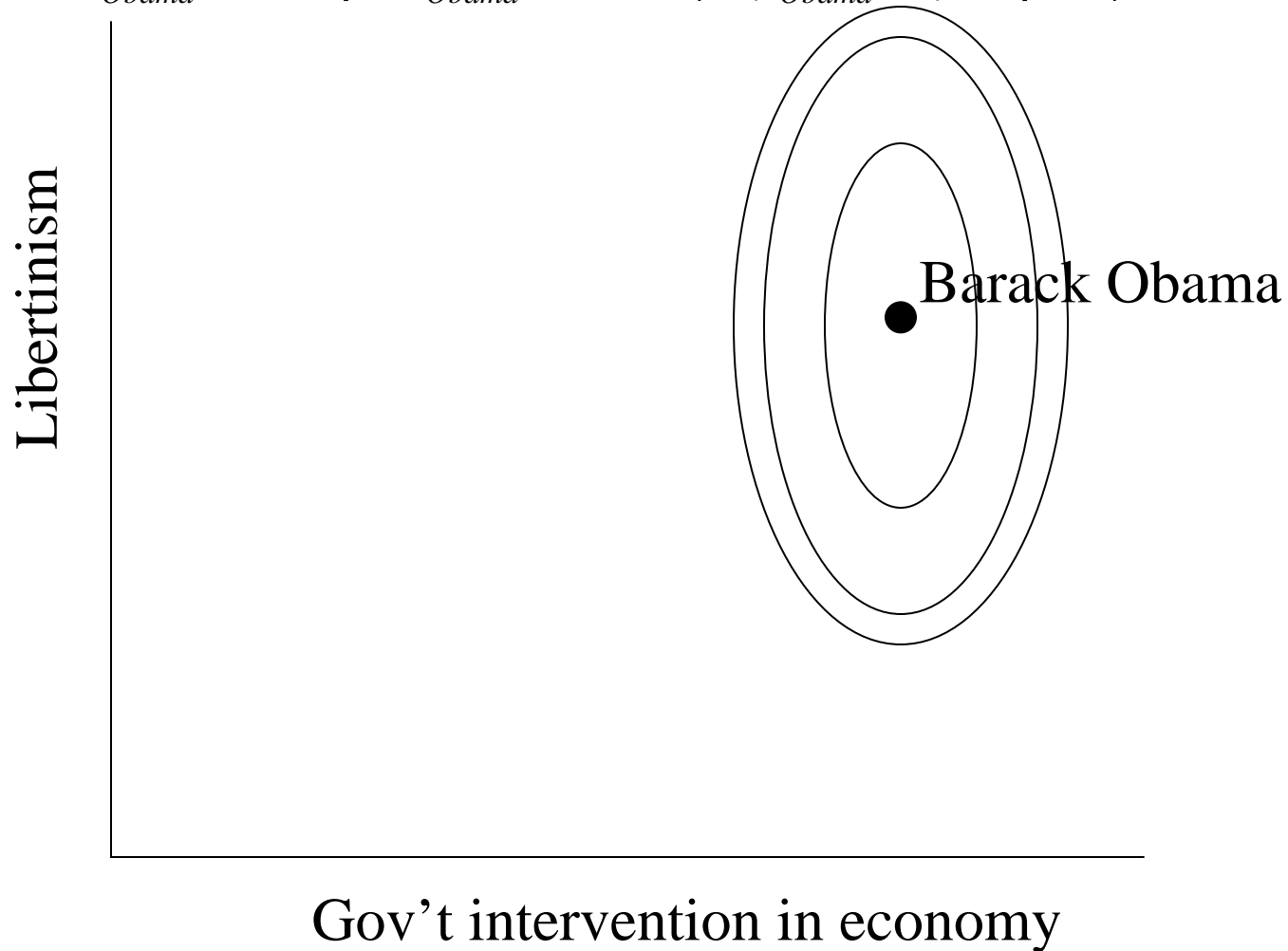
Basic set-up: Indifference curves

$$U_{Obama} = \alpha - (x_{Obama} - x)^2 - (y_{Obama} - y)^2$$



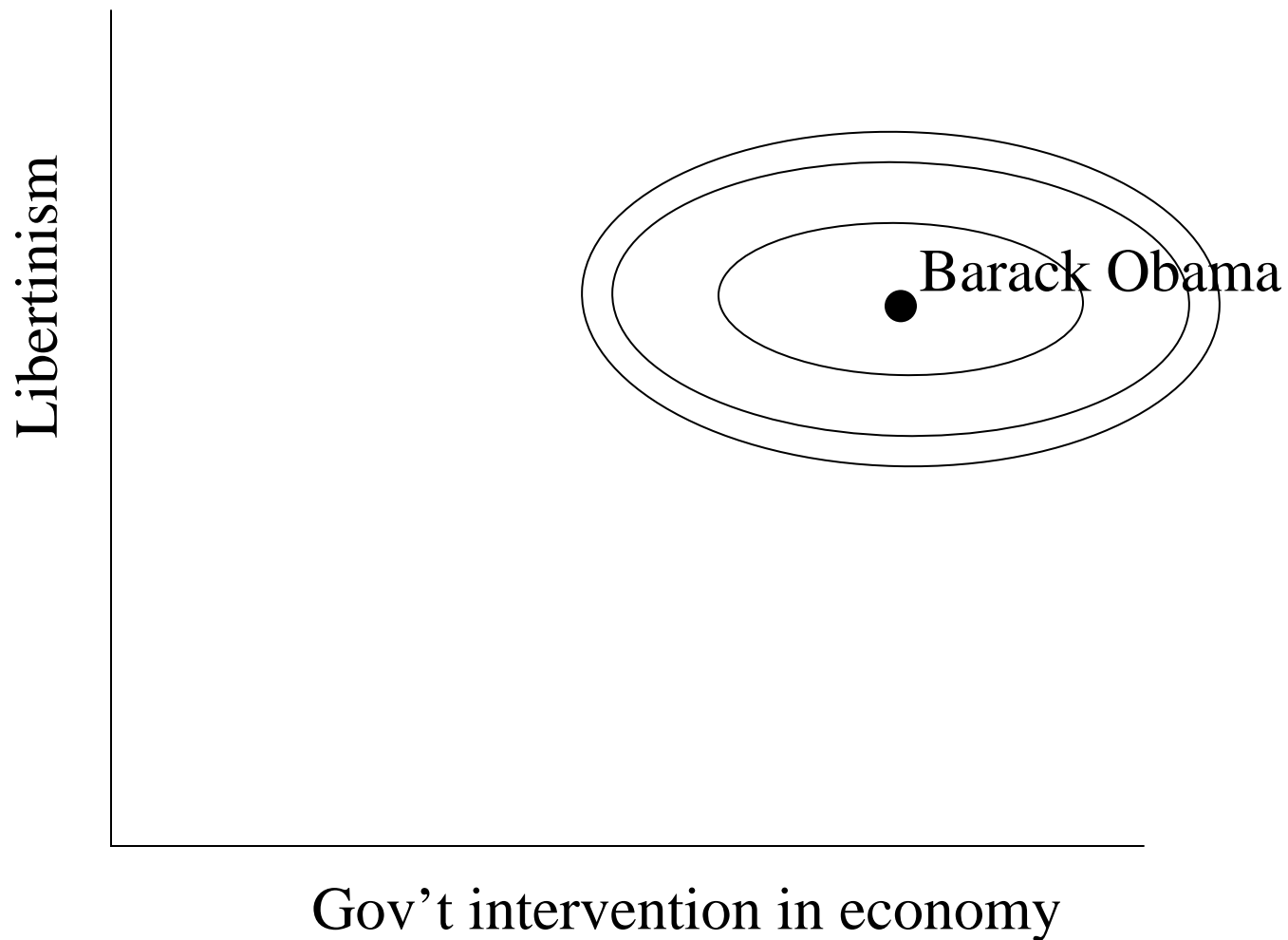
Basic set-up: Indifference curves

$$U_{Obama} = \alpha - \beta(x_{Obama} - x)^2 - \gamma(y_{Obama} - y)^2, \beta > \gamma$$

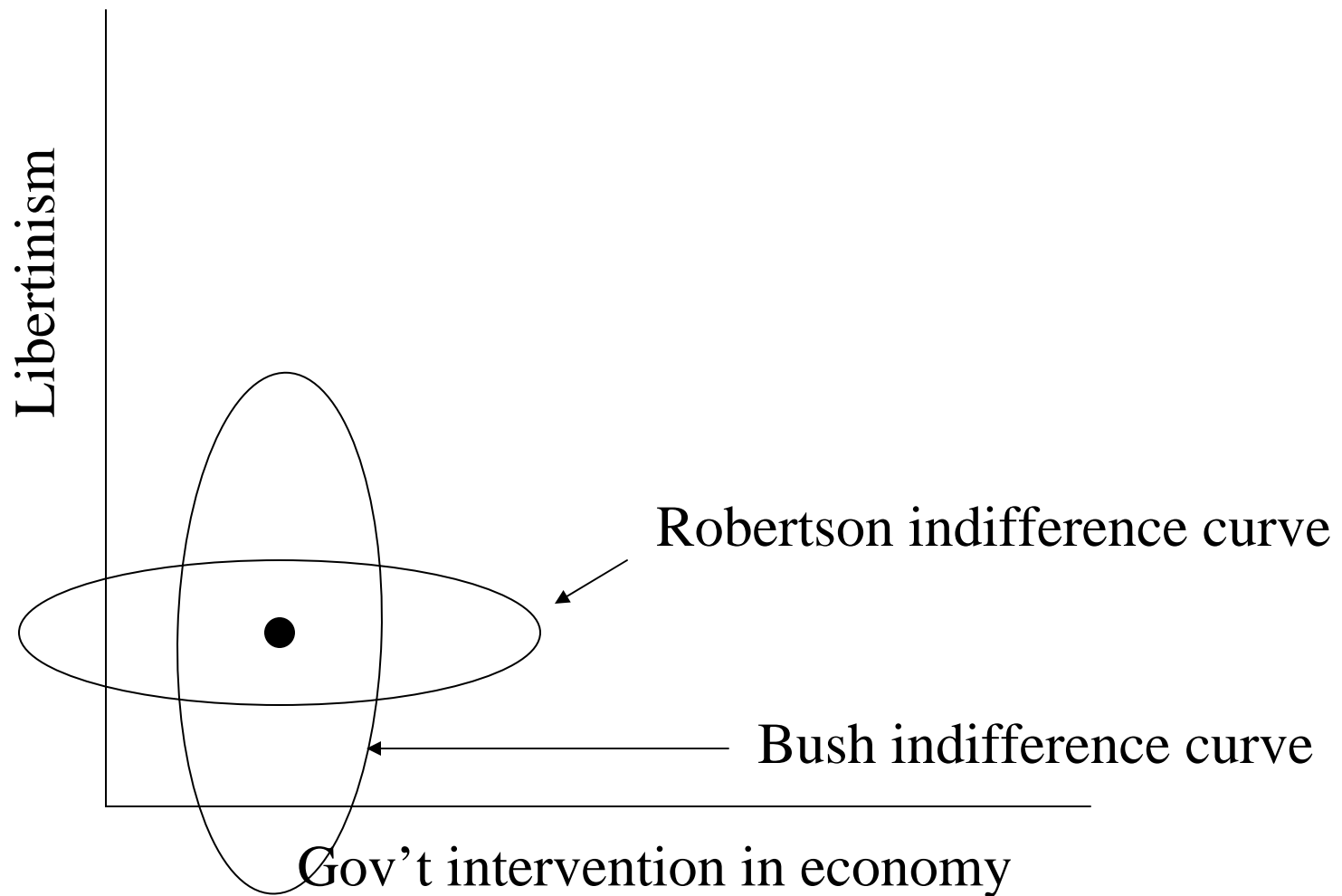


Basic set-up: Indifference curves

$$U_{Obama} = \alpha - \beta(x_{Obama} - x)^2 - \gamma(y_{Obama} - y)^2, \beta < \gamma$$



Why it matters: Pat Robertson vs. George Bush



The Simple Euclidean System: The Equation

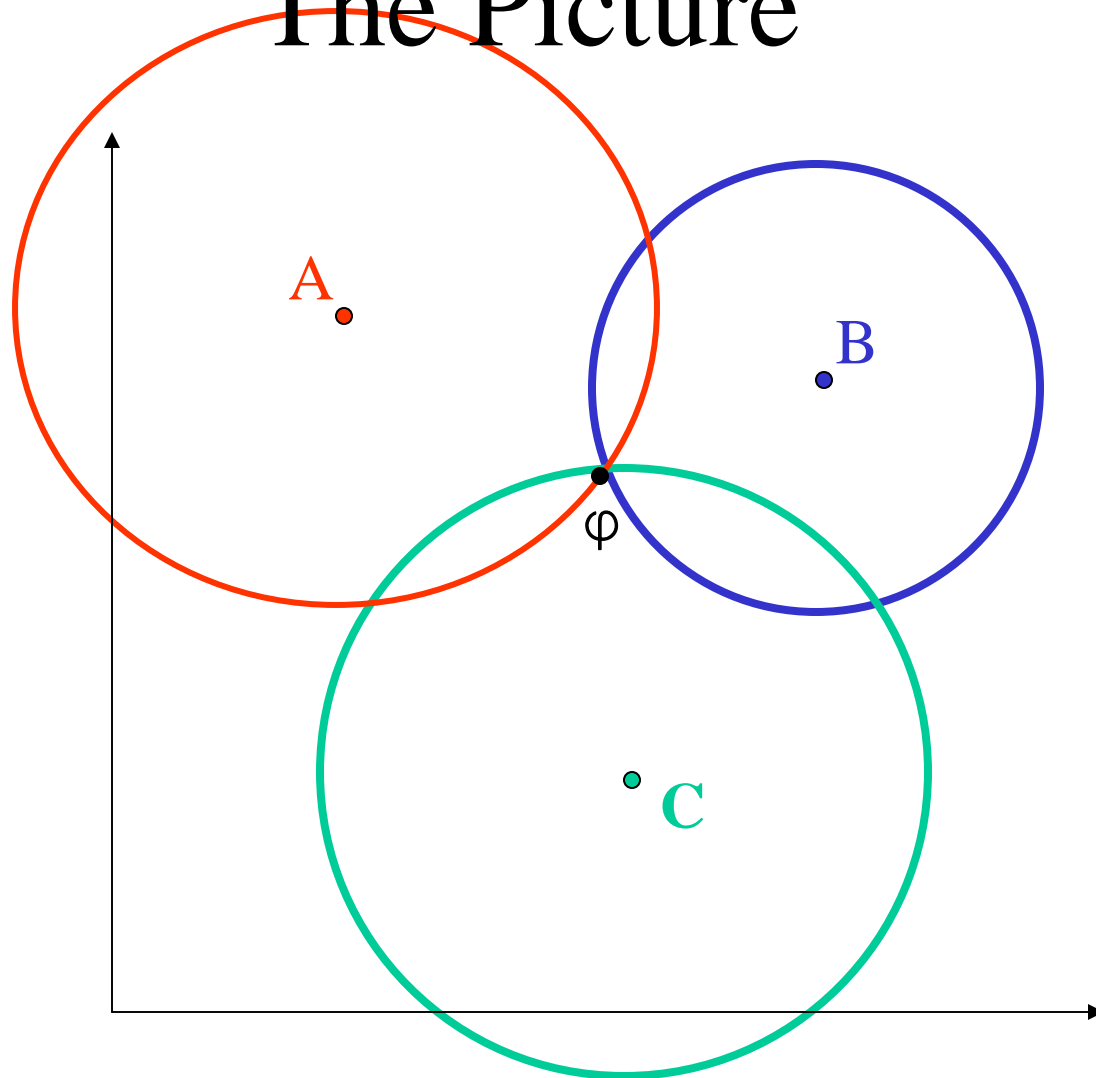
$$U_i = a - (x_i - x)^2 - (y_i - y)^2$$

The Simple Euclidean System: The Picture

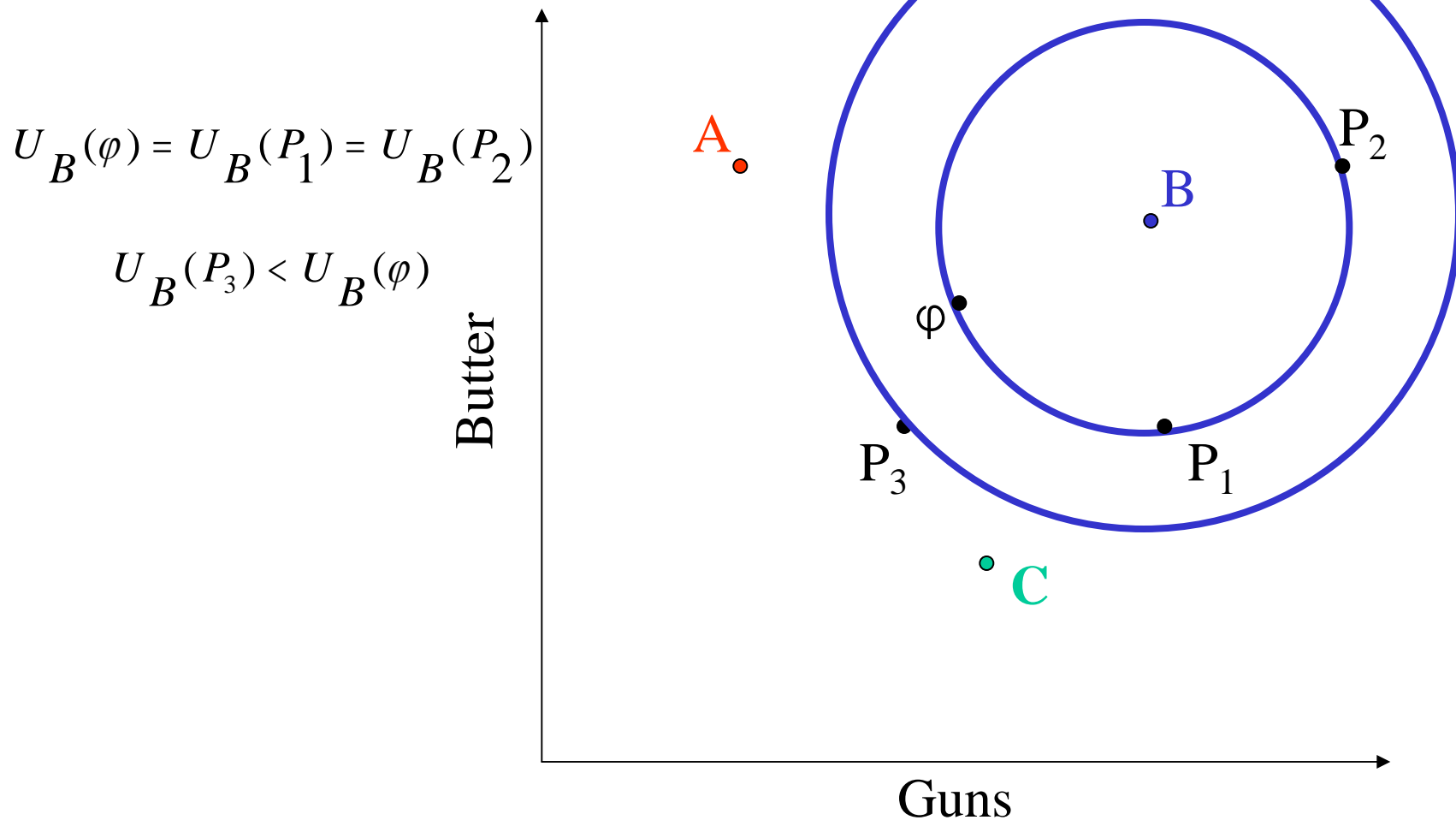
Ideal points

Status quo

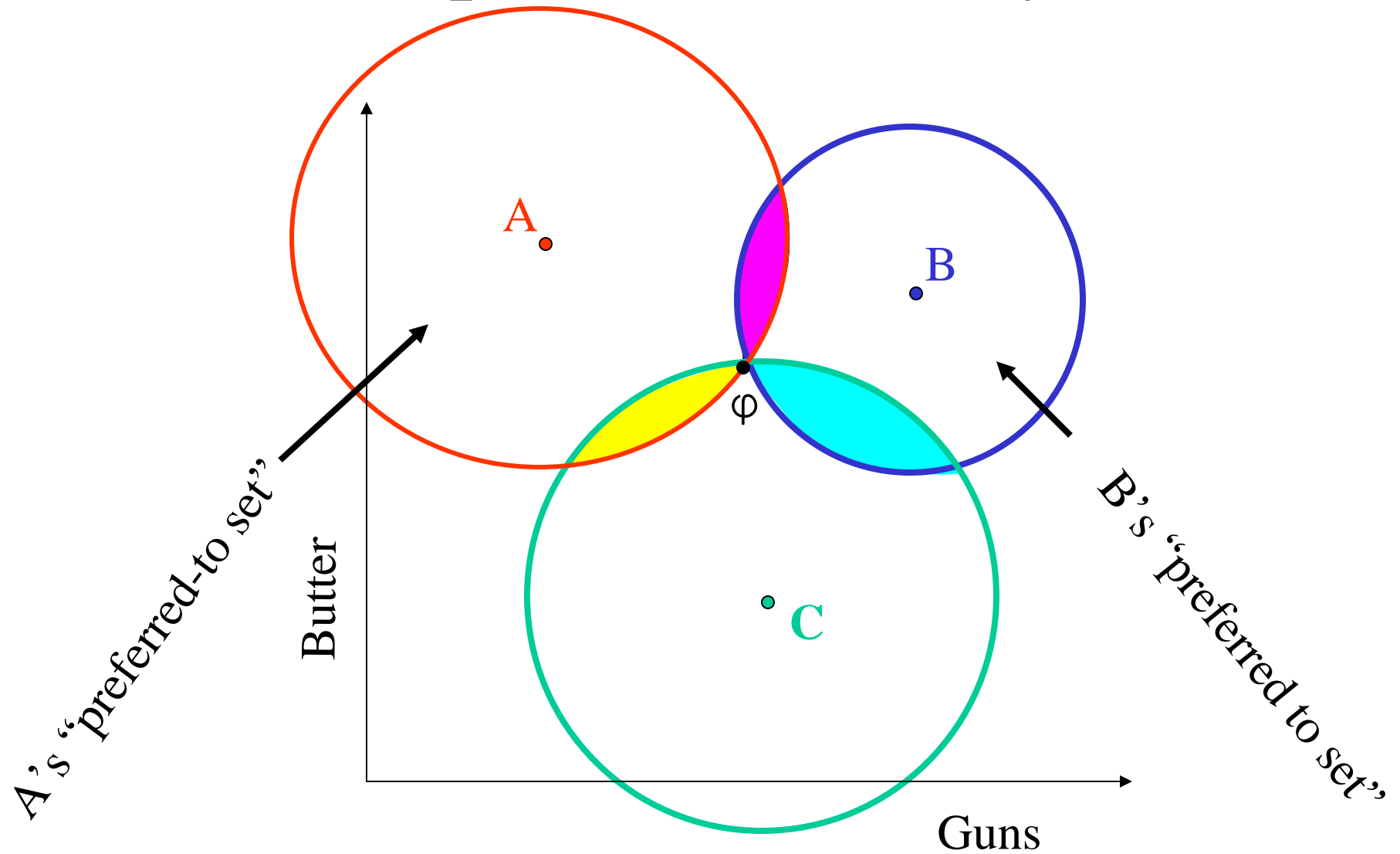
Indifference
curves



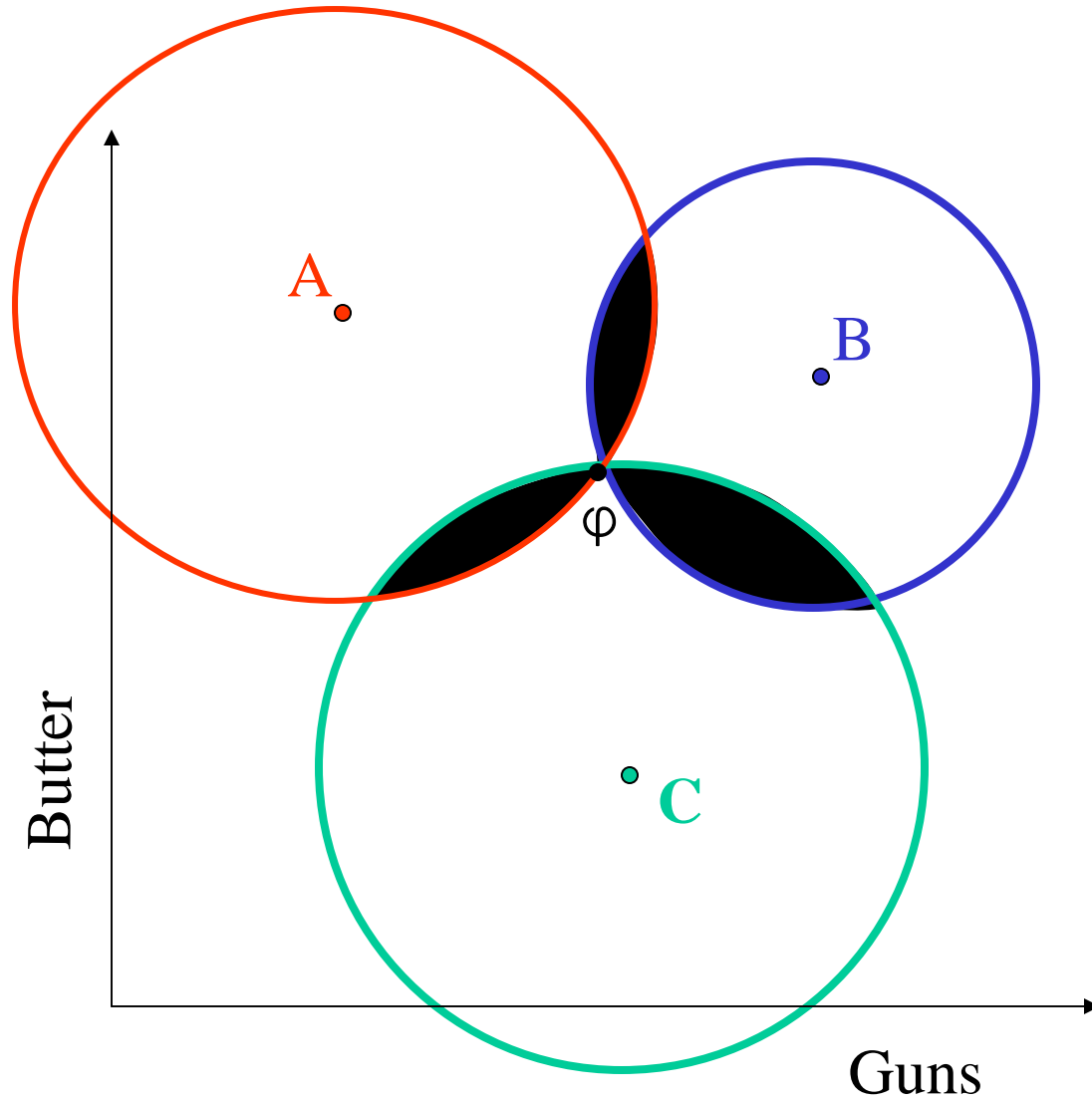
The Simple Euclidean System: Preference relations



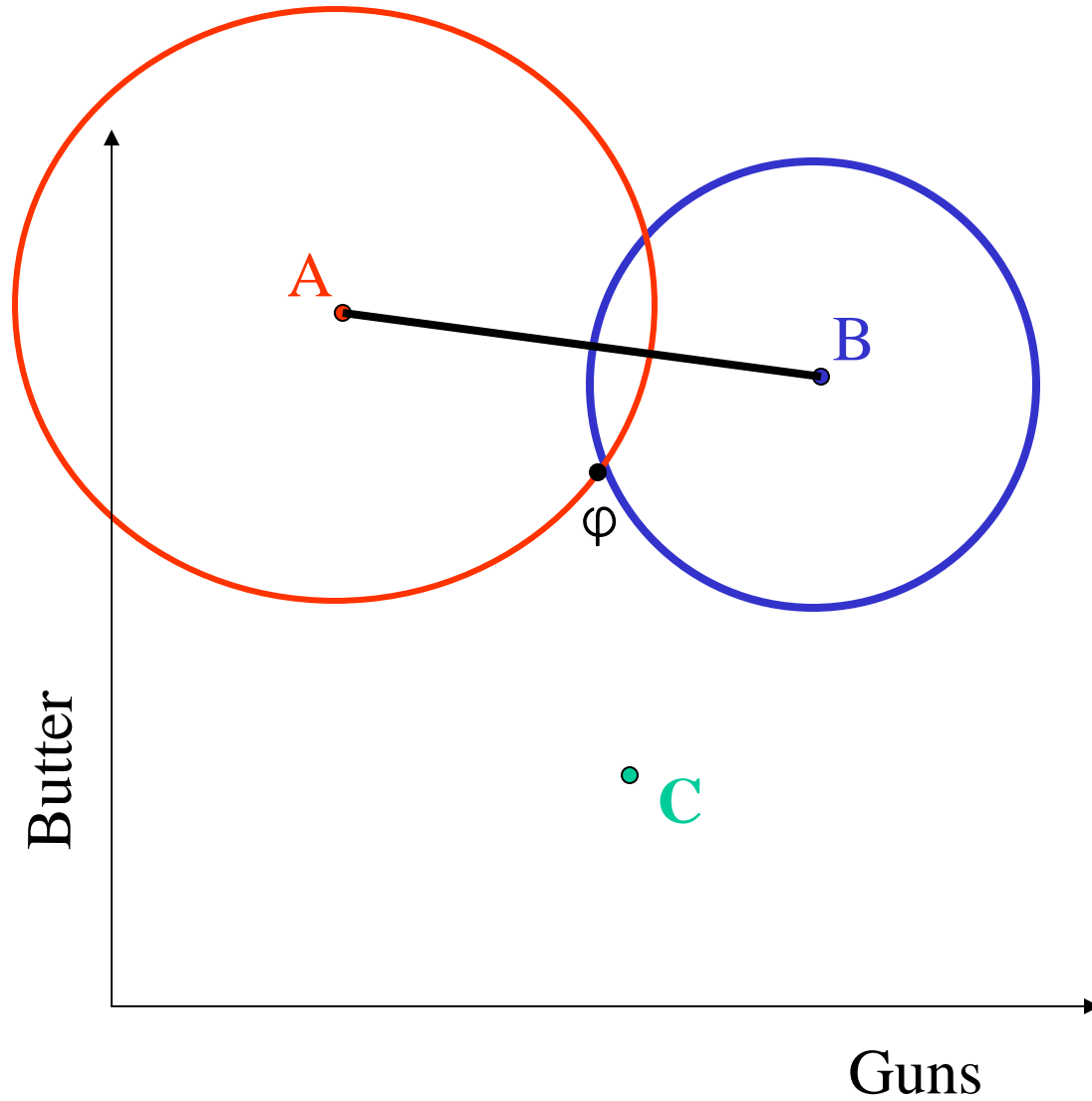
The Simple Euclidean System



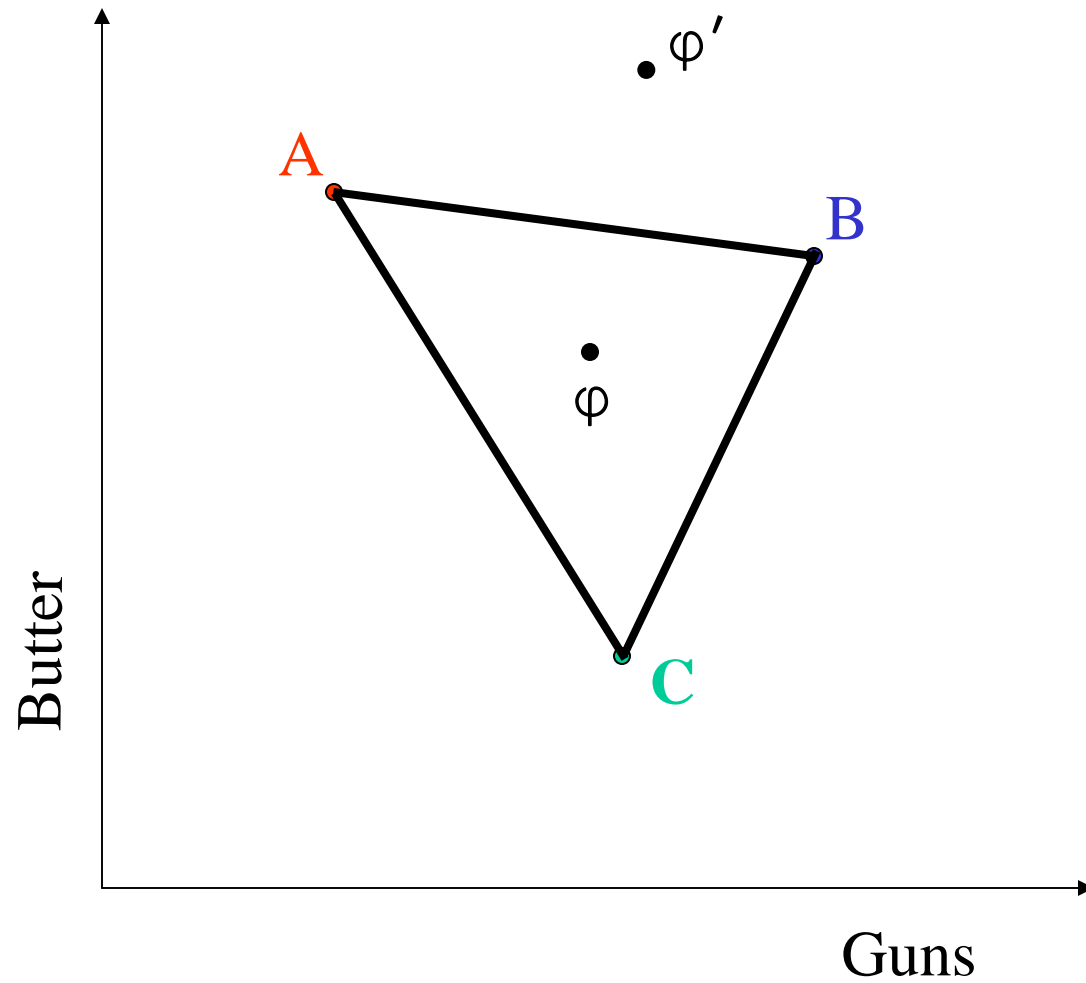
The Win Set, $W(\varphi)$



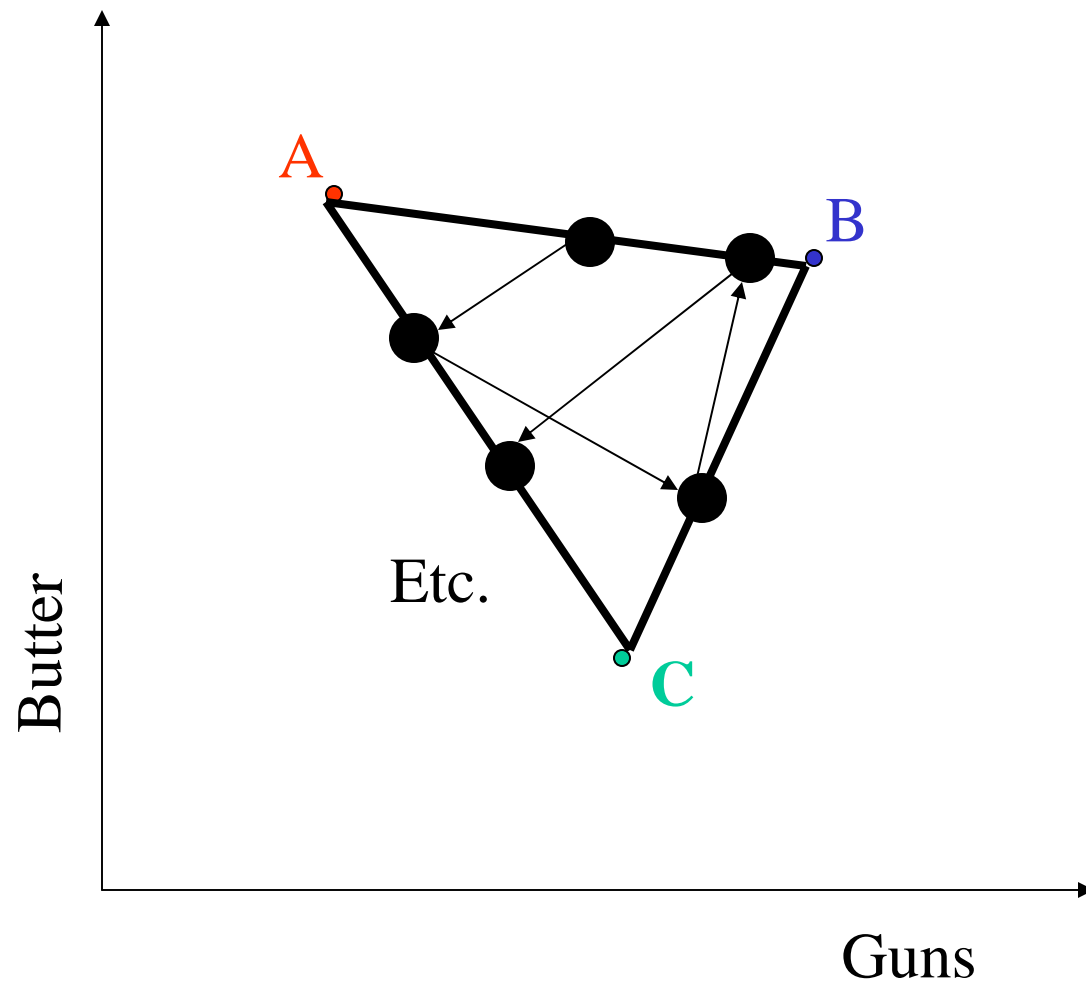
The Contract Curve



The Pareto Set



You are always off a contract curve



McKelvey Chaos Theorem

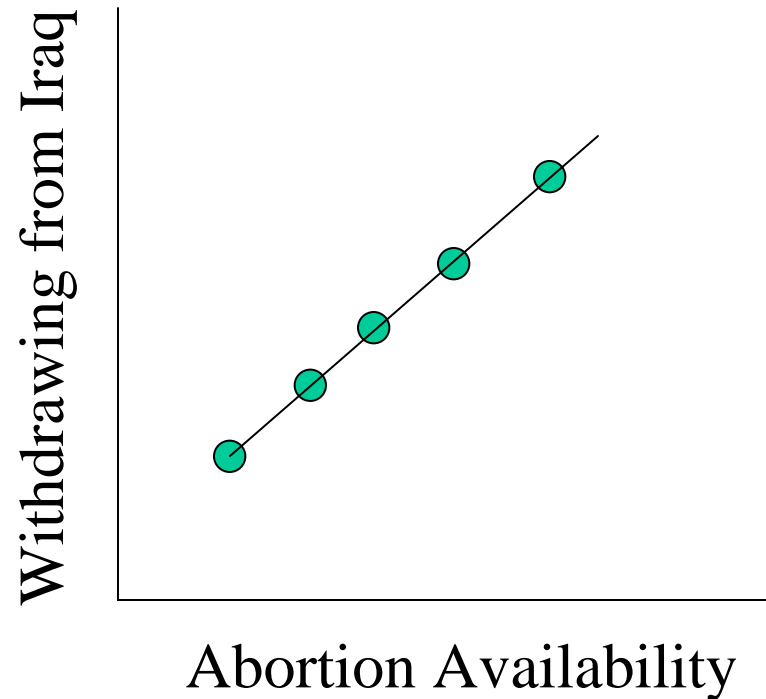
- With multiple attributes and multiple decisionmakers
 - There is no equilibrium of tastes
 - Anything can happen
 - I.e., the median voter result doesn't hold
- This is really important

What Might Induce Stability?

- Tastes
- Uncertainty
- Impatience
- Rules

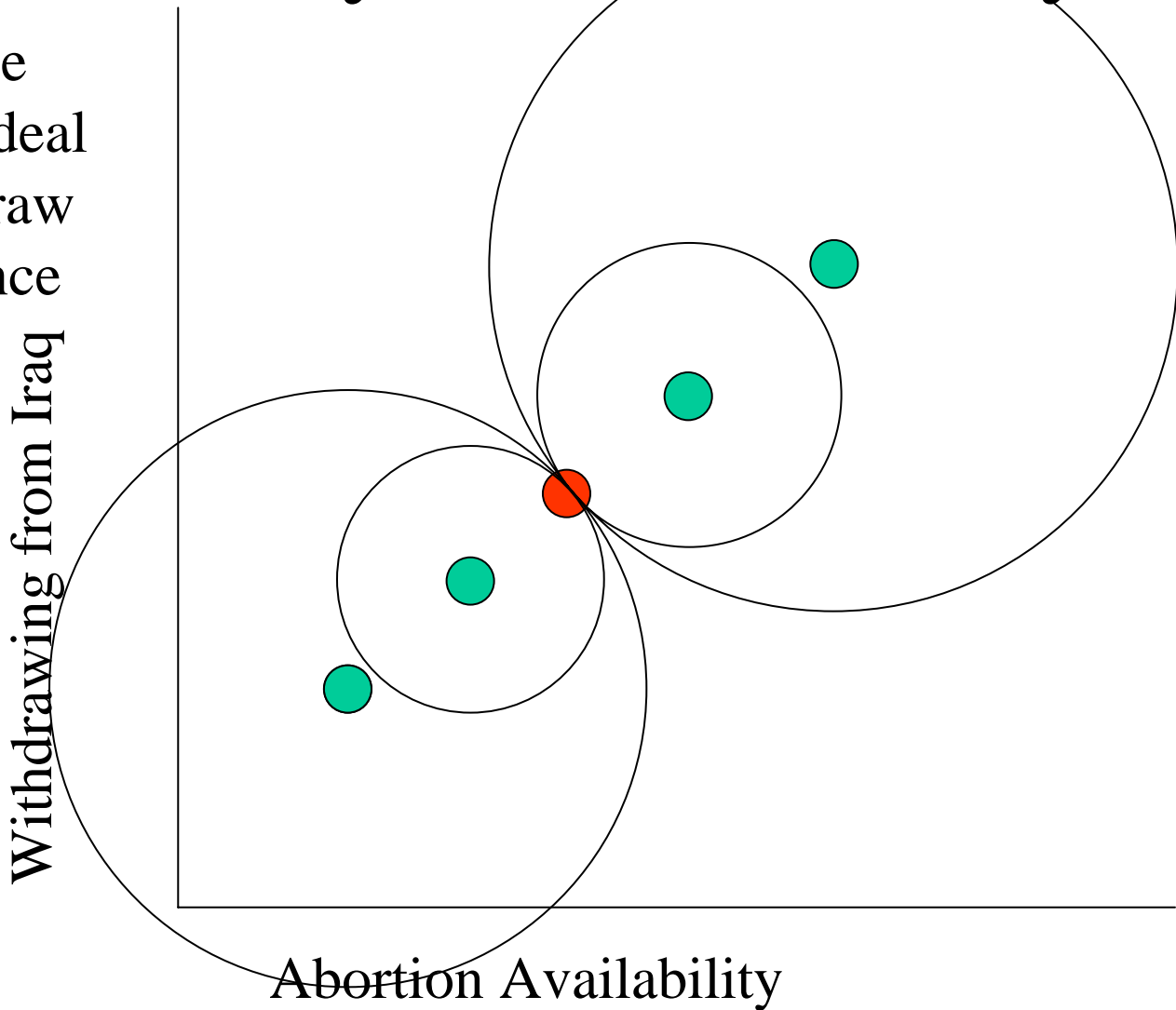
Tastes may induce stability

- Ideology
- “Median in all directions”

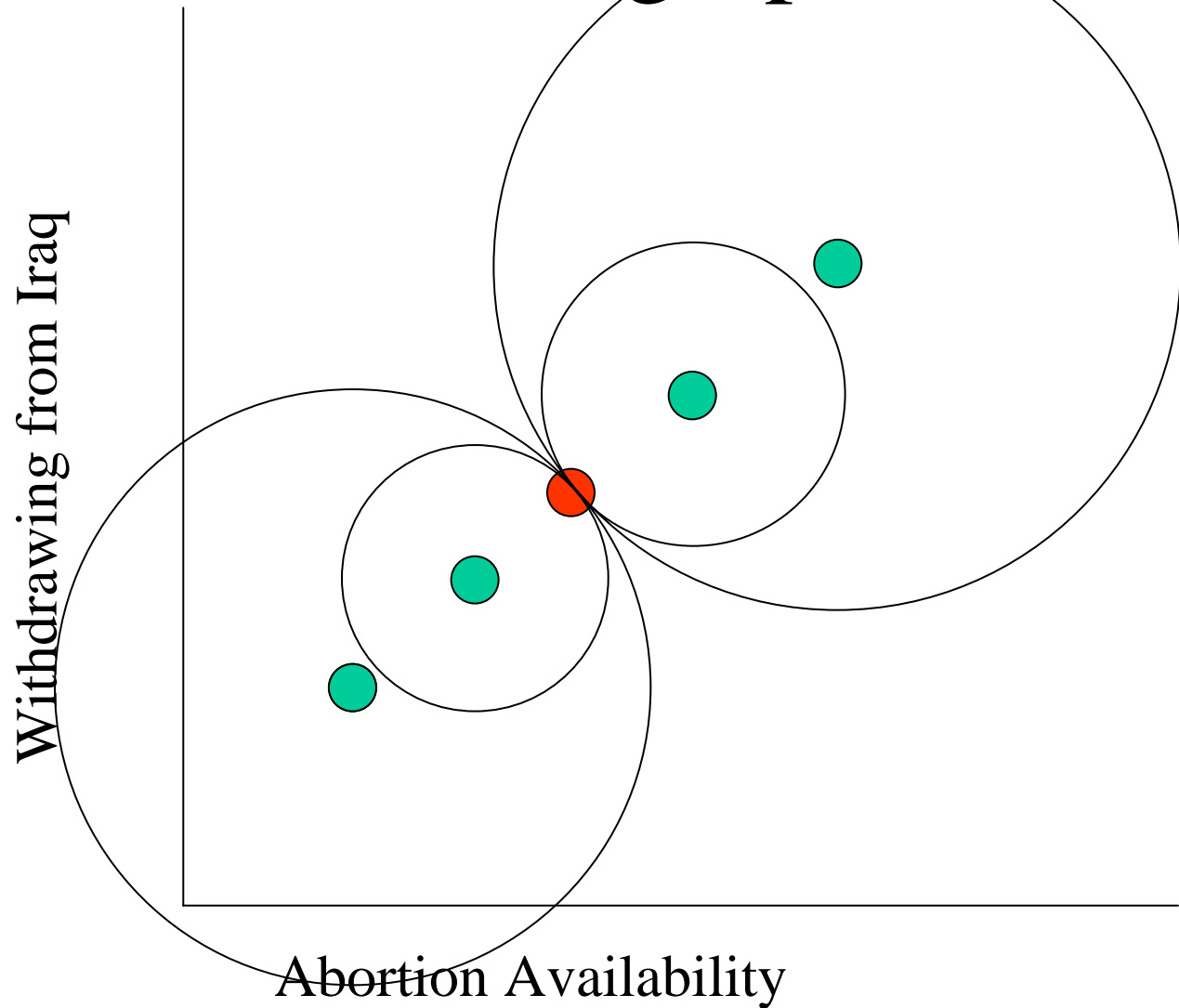


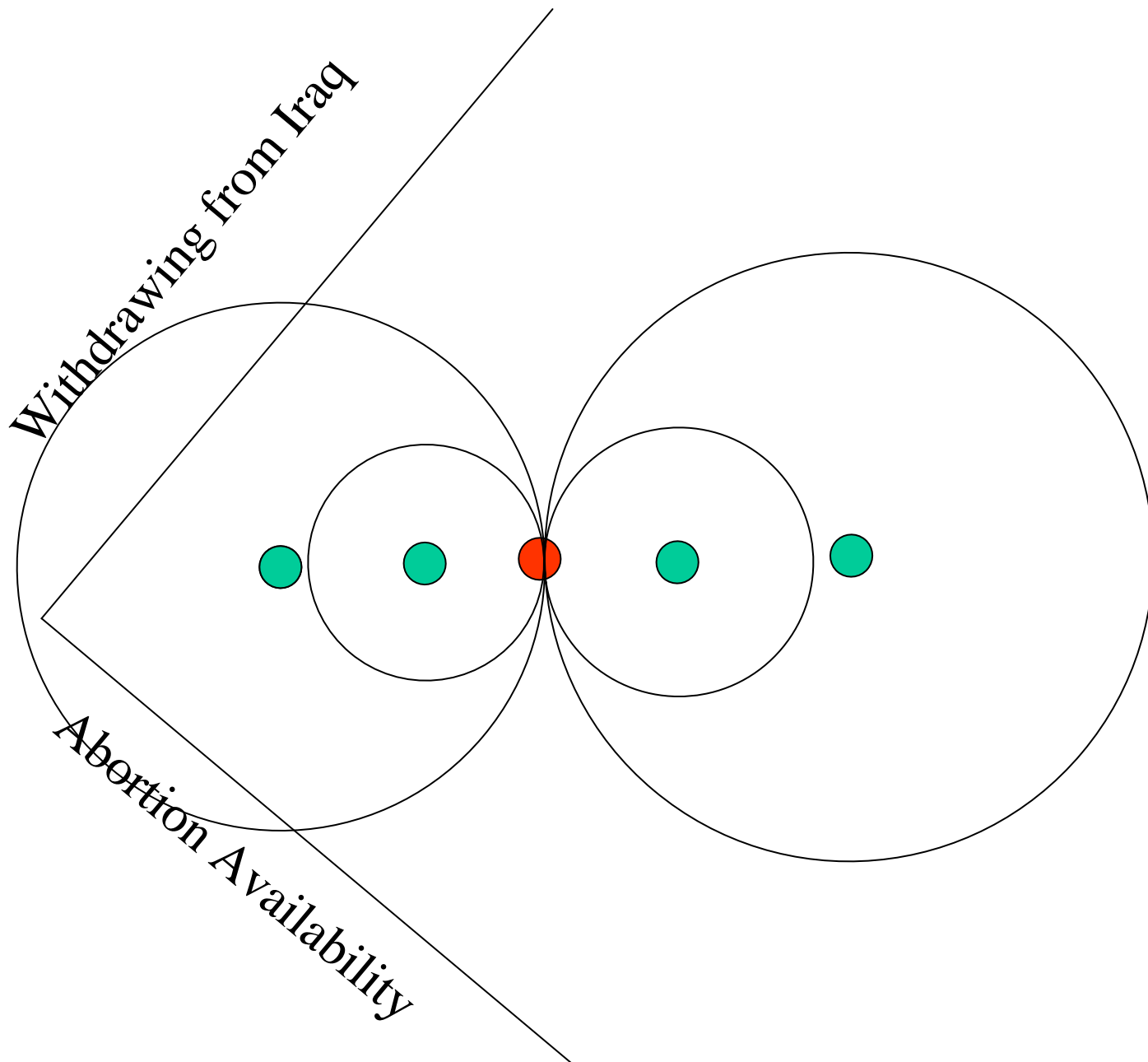
Tastes may induce stability

(Make s.q. the “median’s” ideal point, then draw the indifference curves)

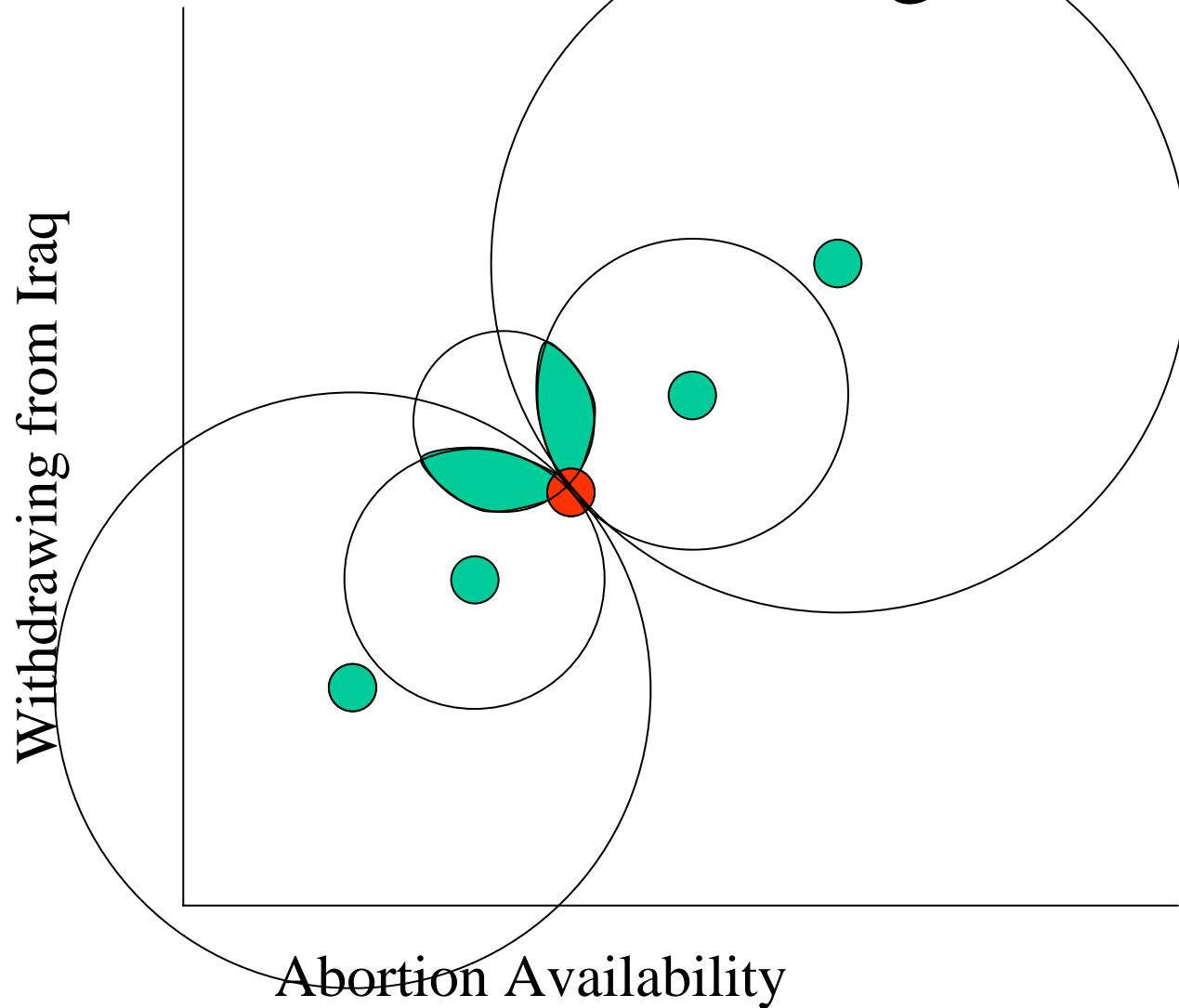


(Rotate this graph)

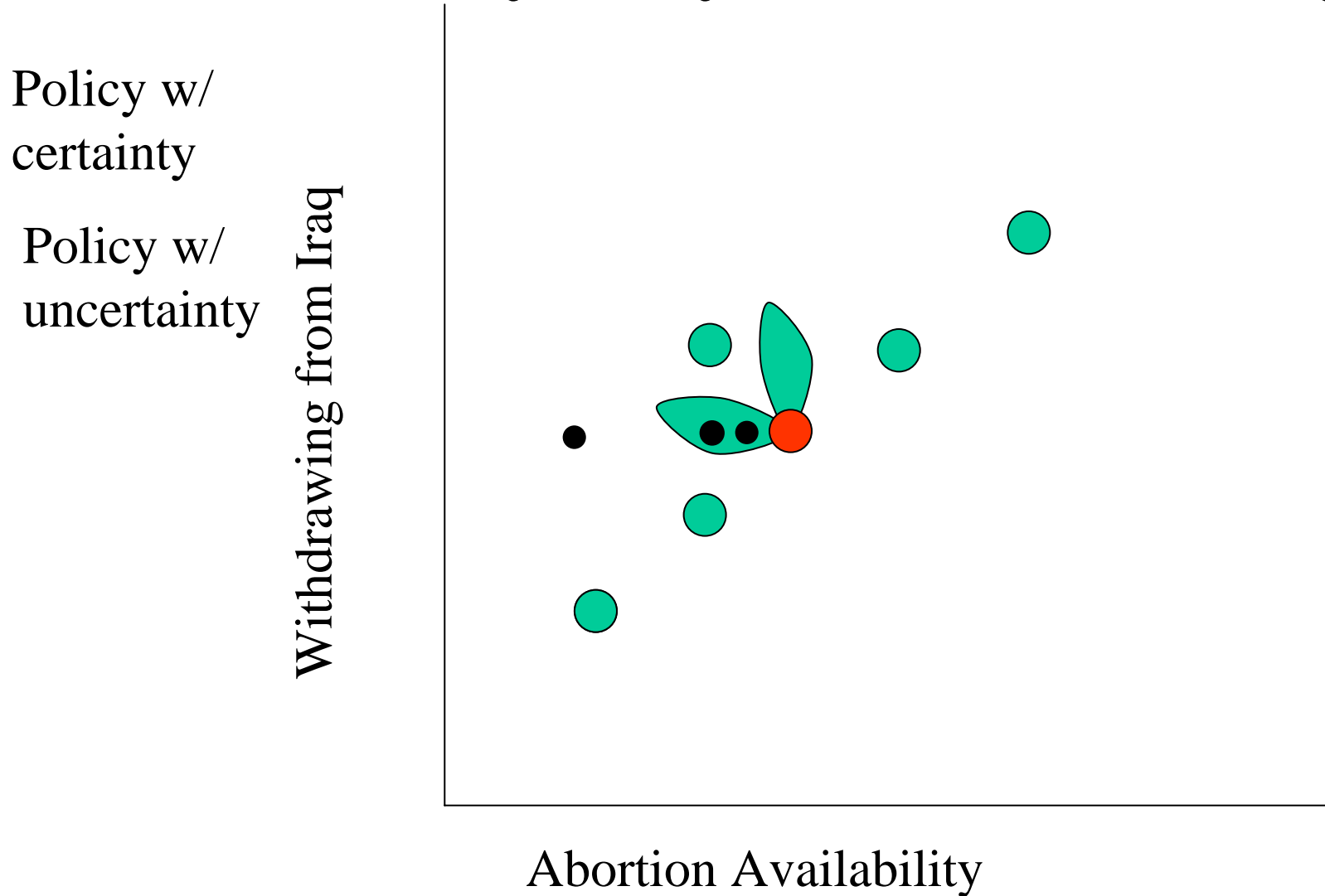




The result is knife-edged



Uncertainty may induce stability



Impatience may induce stability

- Rubenstein bargaining

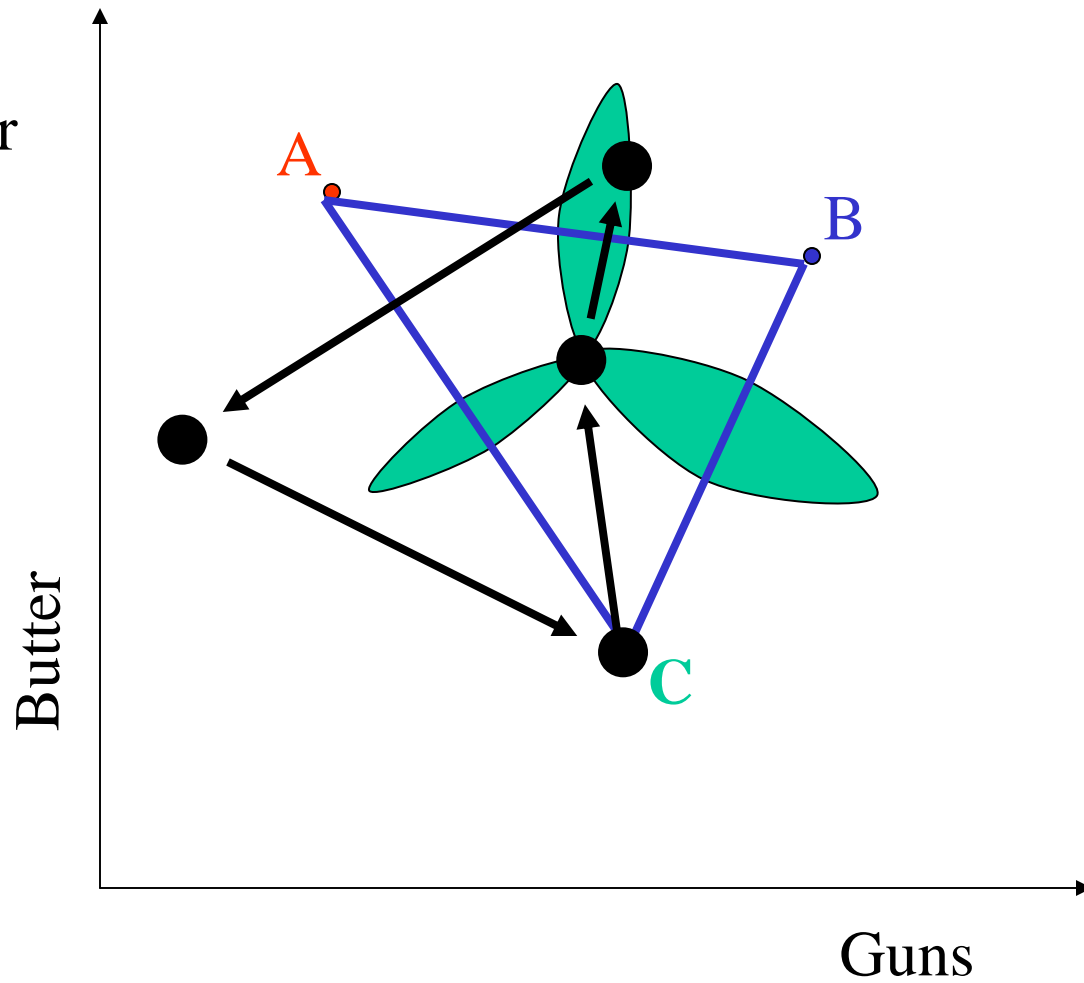
$$U_{i,t} = [\alpha - \beta(x_i - x)^2 - \gamma(y_i - y)^2](1 - \delta)^t$$

Rules may induce stability

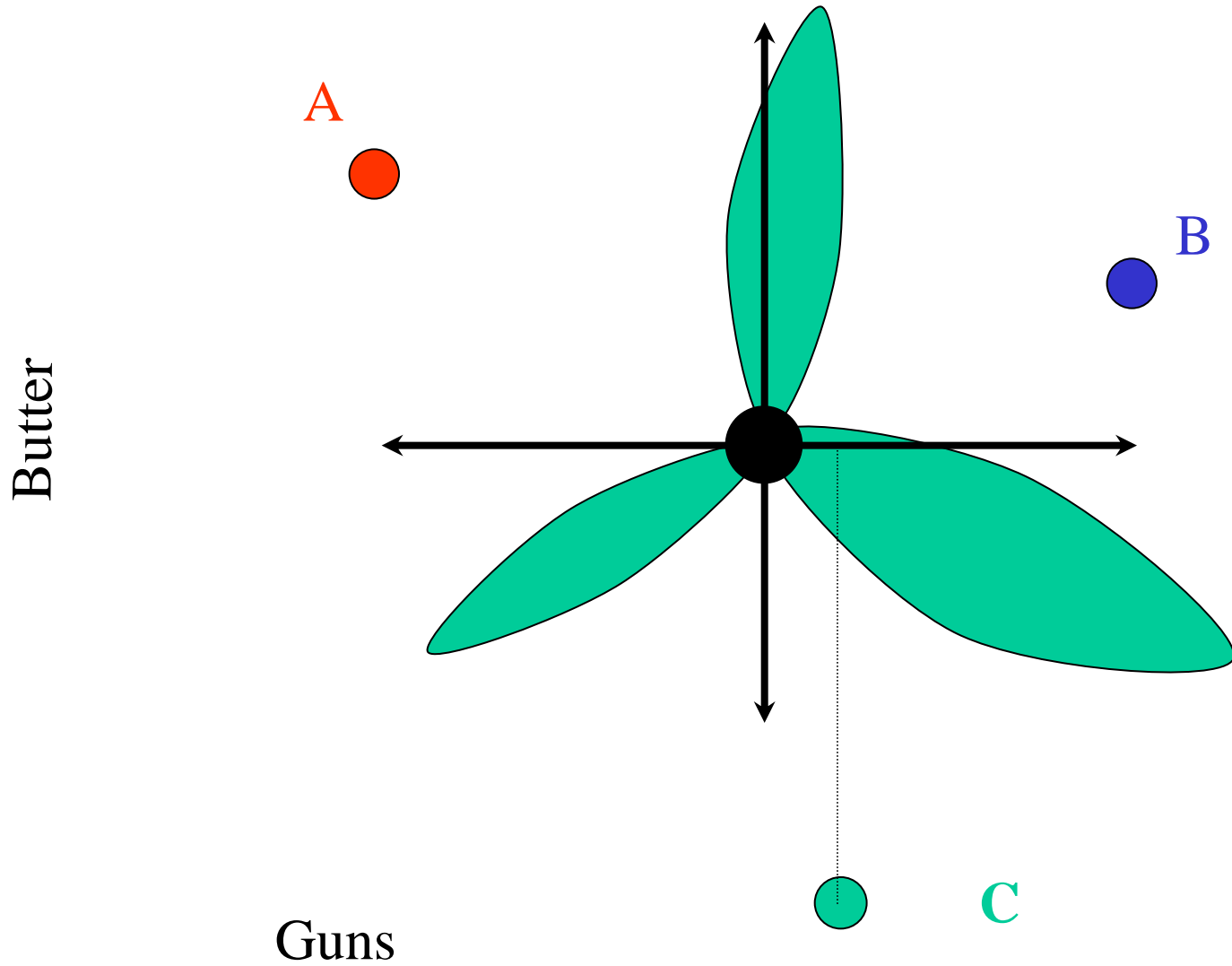
- Floor rules, e.g.
 - vote on status quo last
 - Not stability so much as guarding against “anything can happen”
 - Germaneness rules
- Committees

Status quo last

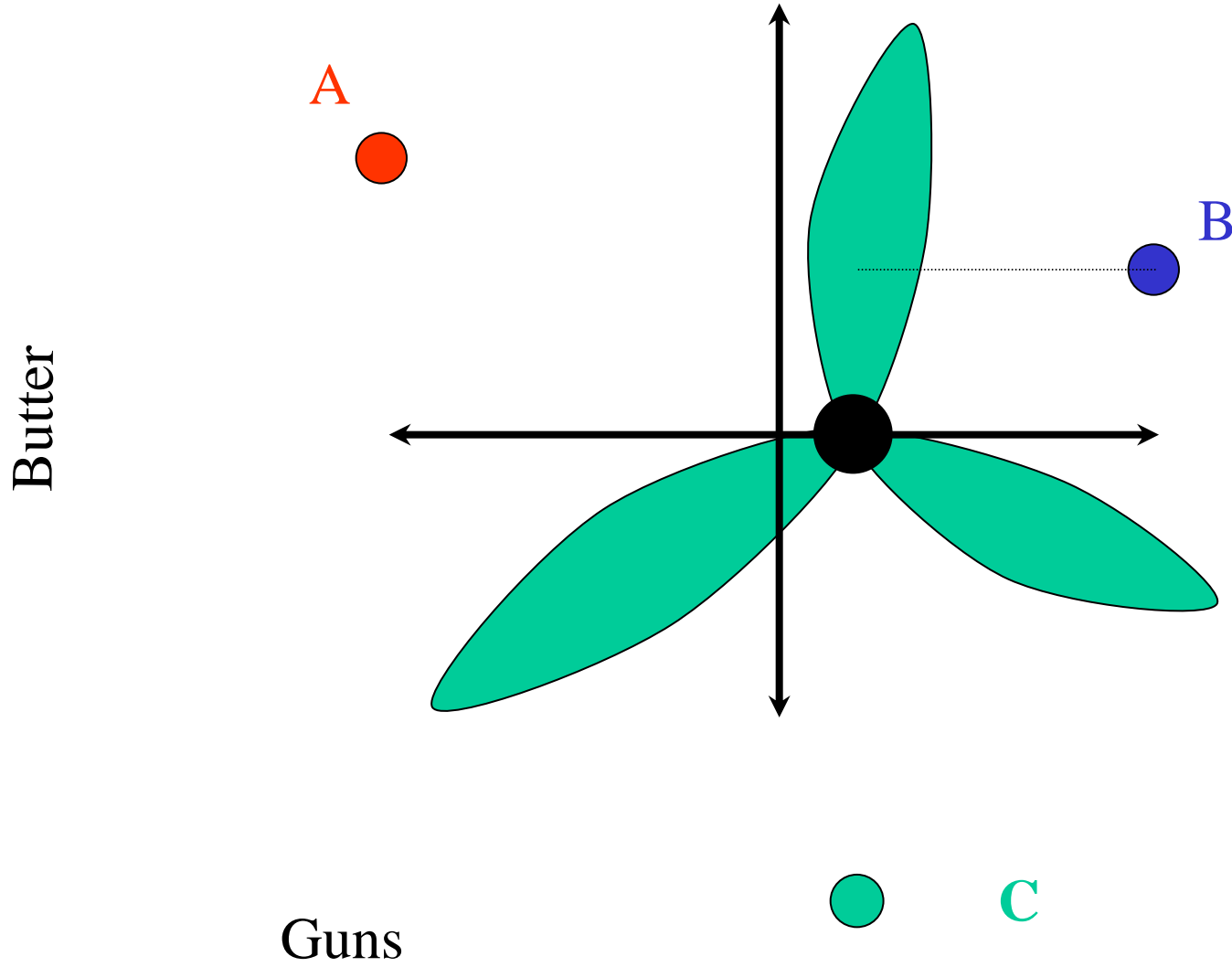
“C” is Speaker



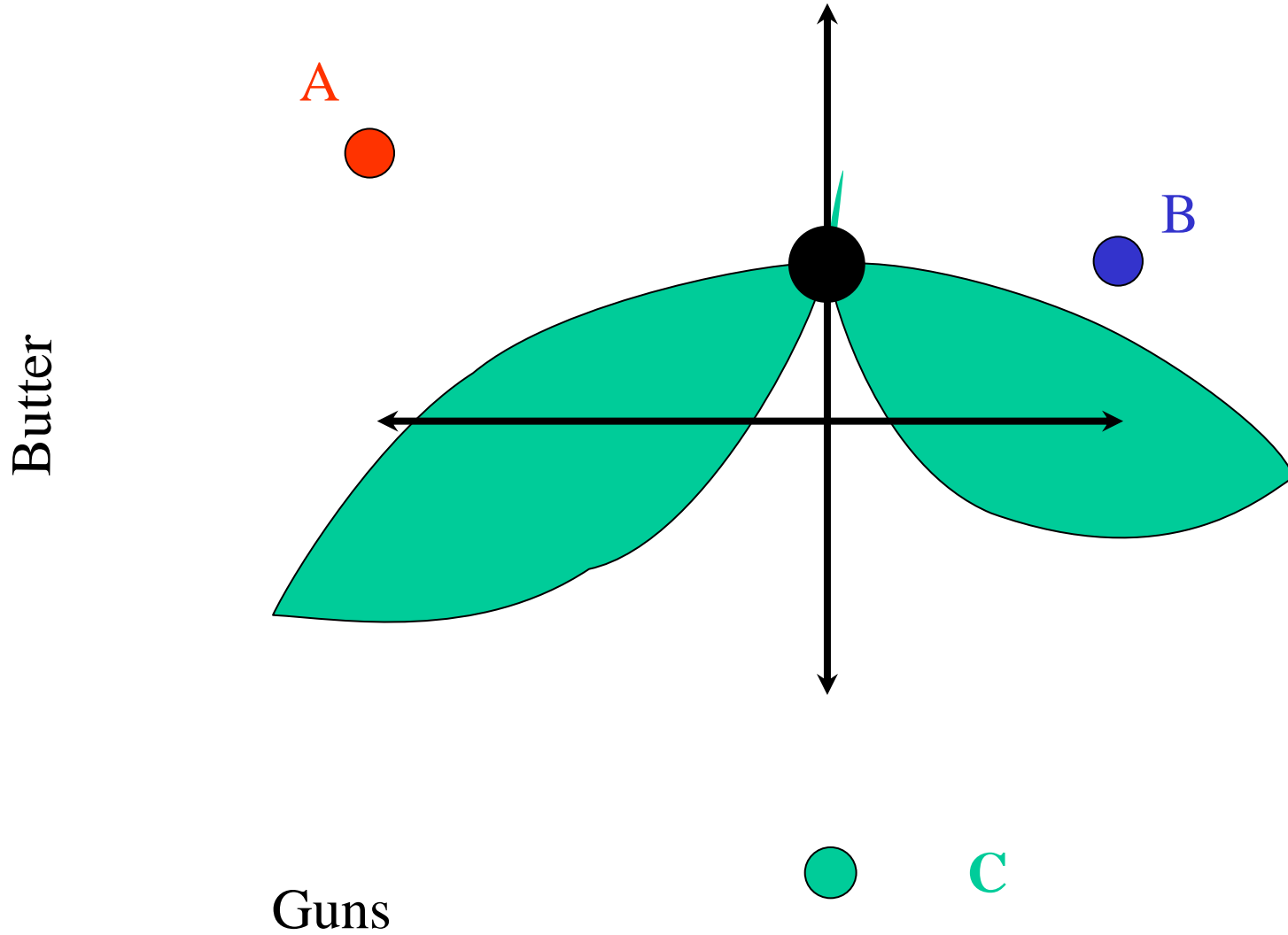
Germaneness



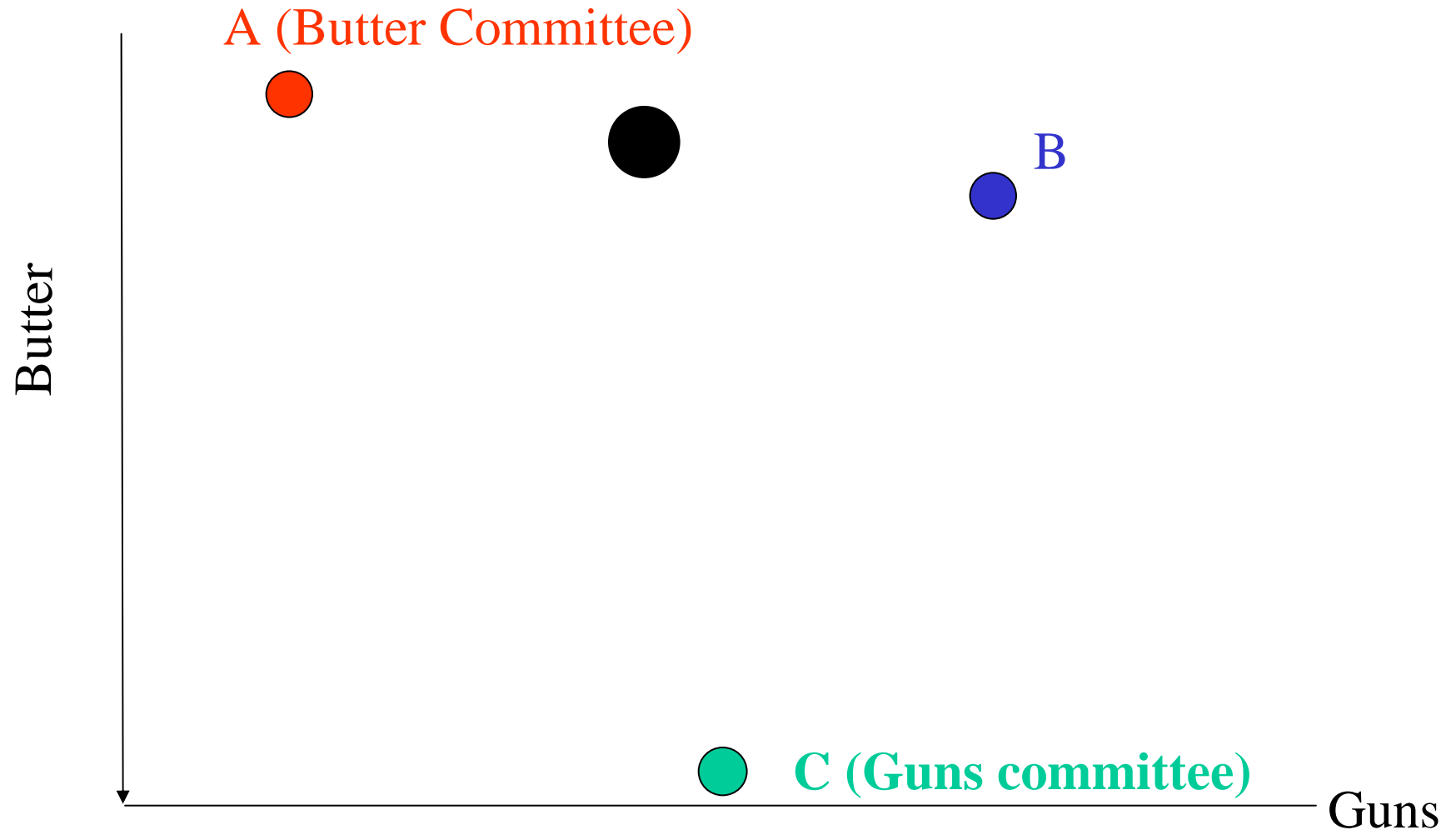
Germaneness



Germaneness



Committees (and subcommittees) reduce policy dimensionality



Stability-inducing powers of leaders and committees

- Committees reduce dimensionality
- Committees and leaders have agenda-setting powers

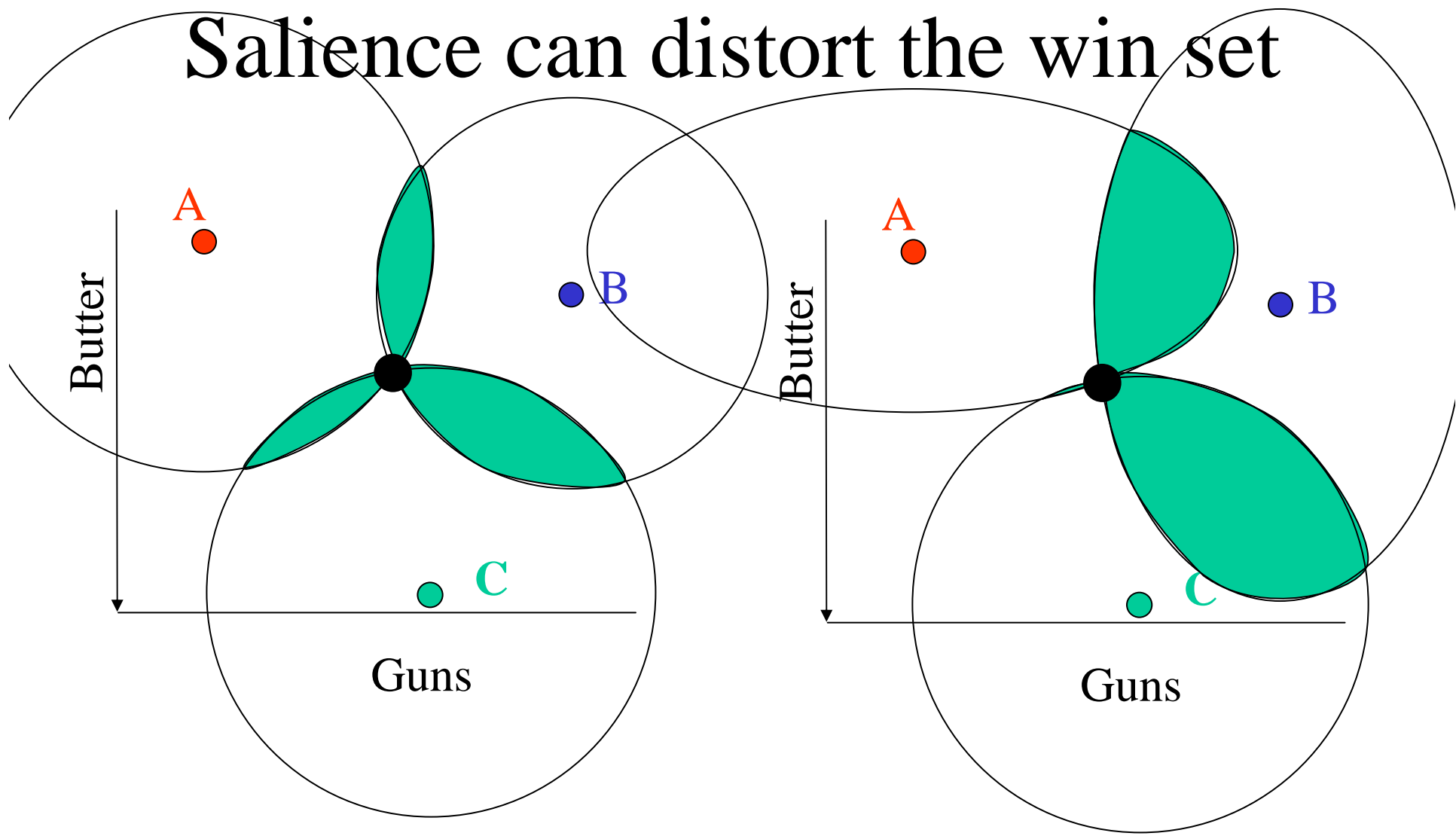
Examples of Multidimensionality in Action

- Informal decisionmaking
- Riker's "heresthetics"
 - Heresthetics: the strategic introduction of "extraneous" issues

Unresolved Issues

- Salience
- Sophistication

Saliience can distort the win set



Sophisticated Voting

- The strategy of preferring one alternative at time t even through the immediate alternative is better, in order to prevent an *even worse* outcome in the future

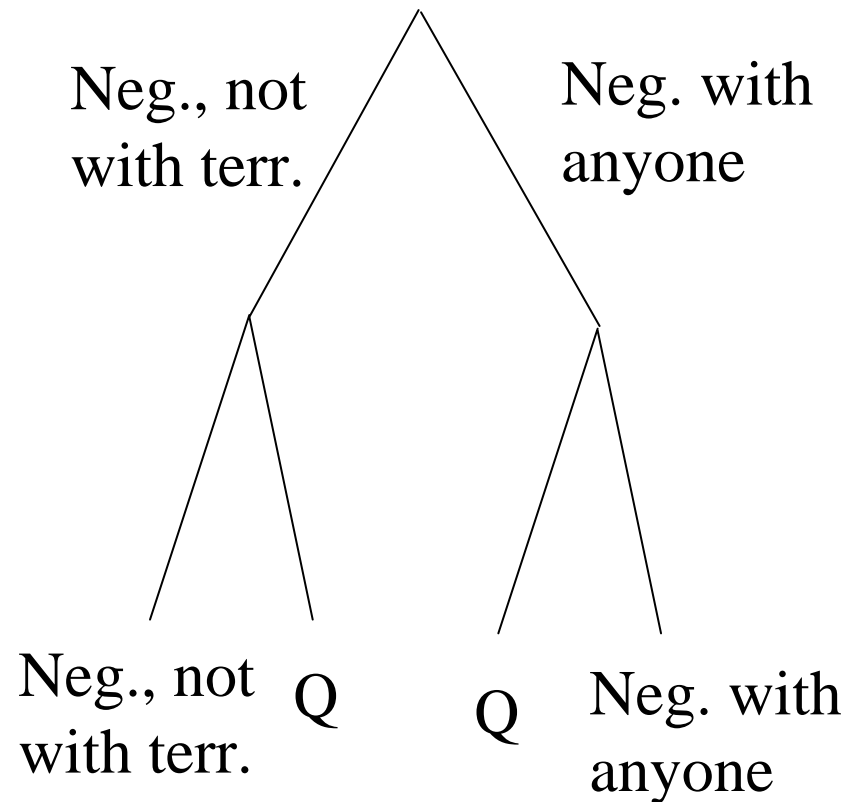
Sophisticated Voting Example

Democrats	Hawkish R	Dovish R
Negotiate with anyone	Don't negotiate	Negotiate, but not with terrorists
Negotiate, but not with terrorists	Negotiate with anyone	Don't negotiate
Don't negotiate	Negotiate, but not with terrorists	Negotiate with anyone

Note that a majority prefers negotiating, but not with terrorists, over not negotiating

Agenda

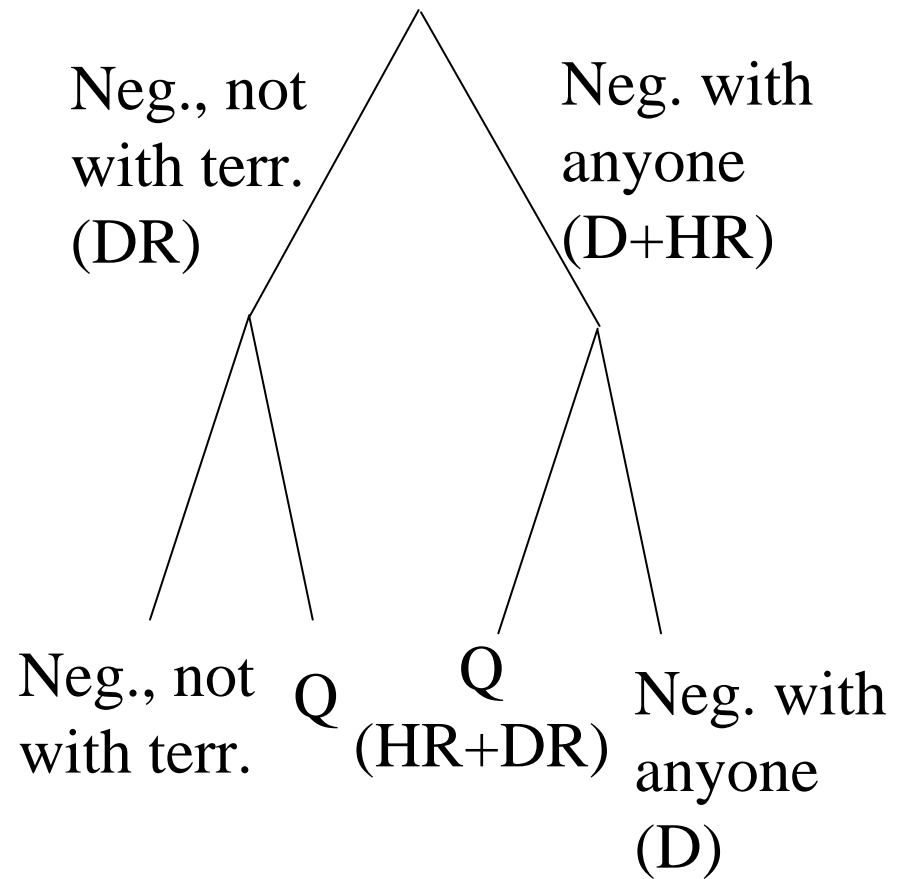
- Add “proviso” to negotiation strategy
- If the proviso passes, pair the negotiation strategy proviso against the status quo (continue no negotiation)
- If the proviso fails, pair the negotiation strategy against the status quo



Agenda

Democrats	Hawkish R	Dovish R
Negotiate with anyone	Don't negotiate	Negotiate, but not with terrorists
Negotiate, but not with terrorists	Negotiate with anyone	Don't negotiate
Don't negotiate	Negotiate, but not with terrorists	Negotiate with anyone

The proviso passes
 The amended negotiation fails,
even though a majority would have favored the original strategy over the status quo



Outcome

- The proviso passes
- The amended treaty fails, *even though a majority would have favored the original treaty over the status quo*
- How to save ourselves? Sophistication
 - Backward induction

Agenda

Democrats	Hawkish R	Dovish R
Negotiate with anyone	Don't negotiate	Negotiate, but not with terrorists
Negotiate, but not with terrorists	Negotiate with anyone	Don't negotiate
Don't negotiate	Negotiate, but not with terrorists	Negotiate with anyone

