Humans are by Nature Political Animals: New Evidence and Arguments

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Outline

1. Political attitudes and political sophistication
2. “Machiavellian Intelligence”
3. Mirror neurons as a basis for social cognition
4. The “default state network”
5. Evidence from functional brain imaging
6. Political values and biology
7. Coalitional cognition
8. Conclusion
What subject in school is political thinking most similar to?

Language & Reading
Math
Recess
Social Studies
Art
Science
History
Theories of Political Attitudes and Political Sophistication

Political Sophistication

In analyzing early political survey data, Phillip Converse discovered that levels of knowledge about politics varied widely. Those with higher levels of knowledge about the basic facts of politics also had a strong tendency to be more consistent with their political attitudes.

Non-Attitudes: Converse (1964)

“There is first a `hard core' of opinion on a given issue, which is well crystallized and perfectly stable over time. For the remainder of the population, response sequences over time are statistically random.”
Theories of Political Attitudes and Political Sophistication

“True Attitudes”: Achen (1975)

“[T]he weak original correlation is demonstrated not to lie, not with the variability of the respondents, but with the fuzziness of the questions and other errors of measurement.”

Answering Questions: Zaller (1992)

Novices & Sophisticates are “averaging across the considerations that happen to be salient at the moment of the response.”
Measuring Political Sophistication

Here are a few questions about government in Washington. Many people don't know the answers to the questions, but even if you're not sure I'd like you to tell me your best guess.

Who has the final responsibility to decide if a law is Constitutional or not… is it the President, Congress, or the Supreme Court?

And whose responsibility is it to nominate judges to the Federal Courts… the President, Congress, or the Supreme Court?

What are the first ten amendments to the Constitution called?

Which party currently has the most members in the House of Representatives in Washington, D.C.?

And which party has the most members in the U.S. Senate?

Which one of the parties is more conservative than the other at the national level, the Democrats or the Republicans?

How much of a majority is required for the U.S. Senate and House to override a presidential veto -- a bare majority (50% plus one), a two-thirds majority, or a three fourths majority?
Machiavellian Intelligence
Pictures from my trip to the zoo...
More pictures from my trip to the zoo
Machiavellian Intelligence Hypotheses

Percent neocortex in brain mass
Machiavellian Intelligence Hypotheses

• “Theory of mind” -- I think that you think that I think …
  – (Premack 1978; Orbell 2004)

• Social monitoring -- constantly shifting alliances requires continual monitoring of the social environment
  – (Chance and Mead 1953; de Waal 1998)
Mirror neurons as a basis for social cognition
Mirror neurons

- Mirroring Behavior - motor and premotor activation in same neurons during action as well as action observation.
- Mirroring Emotion - insula activation when smelling a disgusting smell as well as when observing another smelling a disgusting smell.
- Mirroring Cognition - activation in neurons when I see you do an action, as well as when I believe that you are going to do an action.
Subjects

• Six Democratic Club Members

• Six Republican Club Members

• Six Political Novices
Questions Experiment

<table>
<thead>
<tr>
<th>Political</th>
<th>Non-Political</th>
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<tbody>
<tr>
<td>The government in Washington should: Encourage adoption by banning abortion</td>
<td></td>
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<tr>
<td>I should: Take shorter showers to conserve water.</td>
<td></td>
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</tbody>
</table>
Questions Experiment

Twelve Questions Per Cell in the Experimental Design

Question  Answer  Rest

Question  Question  Question  Question  Question  Question  Question  Etc...

12  12  12  12  12  12  12  12

Six Minutes Total
28 Questions
Political Questions Results

Z statistic images were thresholded using clusters determined by $Z>2.3$ and a (corrected) cluster significance threshold of $P=0.05$. This cluster has 520 voxels with a $P$ value of 0.0001 and a maximum $Z$ score of 4.68 located at (-4, -54, 24) in the Talairach space.
The “default state network”

Meta-analysis of task independent decreases

Gusnard & Raichle (2001)
“Default State Network”

• Normally during a “cognitive task” the parts of the brain involved in that task **increase** in their neural activity as the brain goes from rest to task.

• However, the medial prefrontal and medial posterior cortices **decrease** in neural activity as the brain goes from rest to task.

• With one exception …
Social cognition

Watching social interactions

Making personal moral judgments


Greene et al. (2001)
Answering questions

Medial prefrontal cortices

Percent BOLD Signal Change

Novice Sophisticate Novice Sophisticate
Political Non-Political

Percent BOLD Signal Change

Novices Sophisticates Novices Sophisticates
Political Non-Political
What subject in school is political thinking most similar to?
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Political Faces

- Salient
- Non-Salient

Political
- Political
- Non-Political

Non-Political
- Salient
- Non-Salient
Political Sophisticates

Answering Political Questions  
Viewing Political Faces
Evidence for mirror neurons

Normal Subjects
Imitating Faces

Political Sophisticates
Viewing Political Faces

Carr et al. 2003
Political values and biology

Prairie voles

Montane voles
Political values and biology

32% of the variance in political attitudes appears to be genetically heritable according to Alford, Funk, Hibbing (2005).
Applying Your Political Values

People are sure of their values, but they are unsure about how to apply them to problems of national politics.

Coalitional cognition in chimpanzees
Coalitional cognition in humans

House 70 (1927-28)

House 74 (1935-36)

House 79 (1945-46)
Coalitional Complexity in Simulated Humans

QuickTime™ and a GIF decompressor are needed to see this picture.
Simulation of the Evolution of Machiavellian Intelligence

(Orbell et al 2004)
Simulation of the Evolution of Machiavellian Intelligence

(Orbell et al 2004)
“Everyday politics”
Conclusion

• Our “Machiavellian intelligence” evolved with our need for navigating more complex social organizations.
• “Mirror neurons” facilitate social cognition by enabling us to represent the behavioral, emotional, and cognitive states of others.
• The “default state network” appears to fit key characteristics described by the “Machiavellian intelligence” literature.
• Human use the default state network for solving problems of “everyday politics” and sophisticates can use it to solve problems of national politics.
• We are all political sophisticates, some just need assistance mapping the values we use in “everyday politics” to problems of national politics.