

# From Games to Evolution

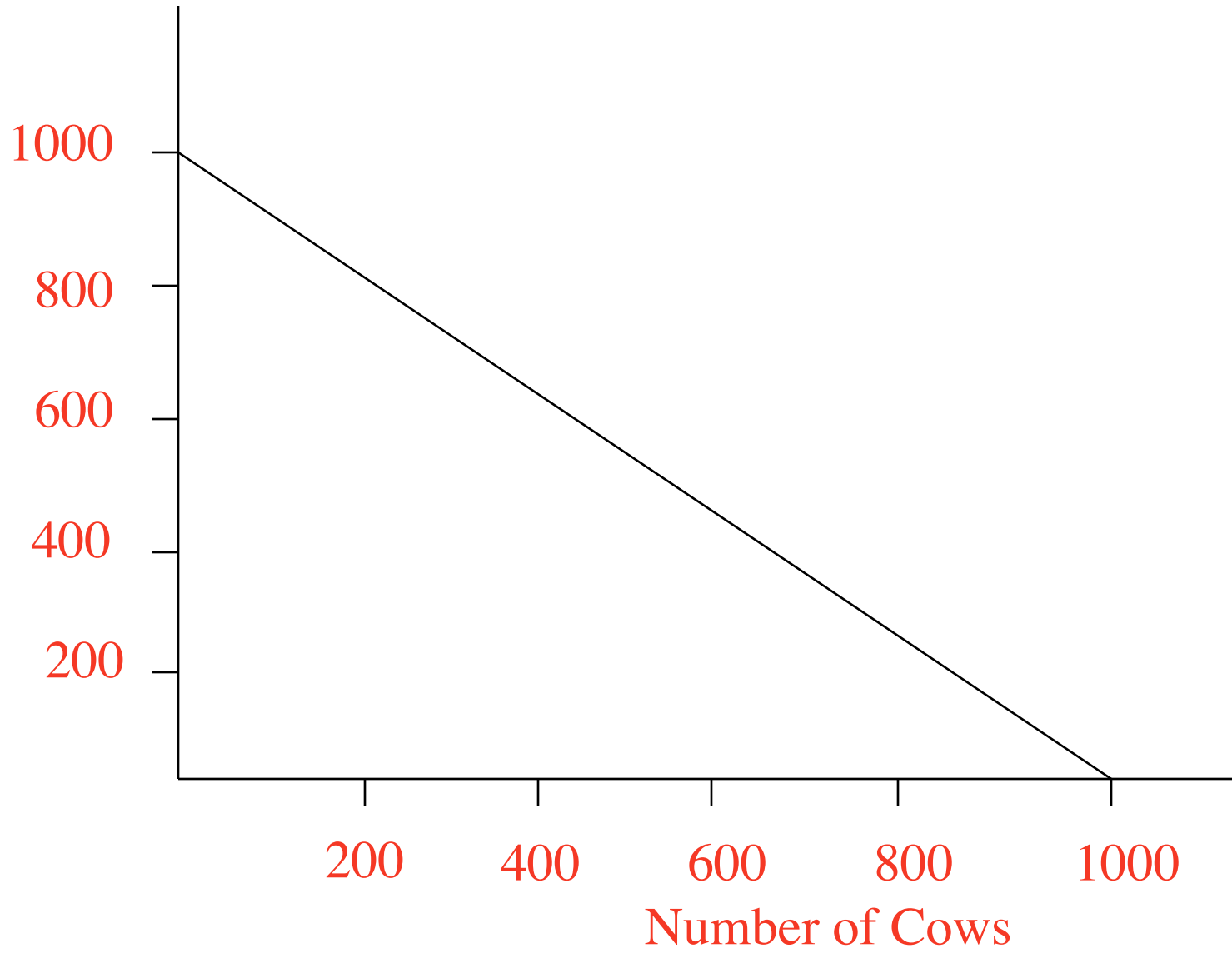
Behavioral Game Theory:

The “Let’s Meet in Paris” Game

# I Don't Want to Play!

- The “tragedy of the commons”
- Game theoretic analysis of emotions
- Ceding control: opting out of the game

Quarts  
Per Cow



My N	Total N	My Quarts	Total Quarts	Qts/Cow
1	100	900	90,000	900
2	200	1600	160,000	800
3	300	2100	210,000	700
4	400	2400	240,000	600
5	500	2500	250,000	500
6	600	2400	240,000	400
7	700	2100	210,000	300
8	800	1600	160,000	200
9	900	900	90,000	100

Common sense says that victory goes to the side with the most intelligence, self-interest, coolness, options, power, and clear lines of communication. Common sense is wrong. Each of these assets can be a liability in contests of strategy (as opposed to contests of chance, skill, or strength), where behavior is calculated by predicting what the other guy will do in response....

How do you persuade someone that you will not pay more than \$16,000 for a car that is really worth \$20,000 to you? You make a public, enforceable \$5,000 bet with a third party that you won't pay more than \$16,000. As long as \$16,000 gives the dealer a profit, he has no choice but to accept....

Because an expensive threat works both ways, it can lead to a cycle of self-incapacitation. Protesters attempt to block the construction of a nuclear power plant by lying down on the railroad tracks leading to the site. The engineer, being reasonable, has no choice but to stop the train. The railroad company counters by telling the engineer to set the throttle so that the train moves very slowly and then to jump out of the train and walk beside it. The protesters must scramble. Next time the protesters handcuff themselves to the tracks; the engineer does not dare leave the train. But the protesters must be certain the engineer sees them in enough time to stop. The company assigns the next train to a nearsighted engineer.

- Pinker, *How the Mind Works*

# Emotions as Game-Theoretic Strategies





# Evolutionary Psychology: Some Themes to Start With

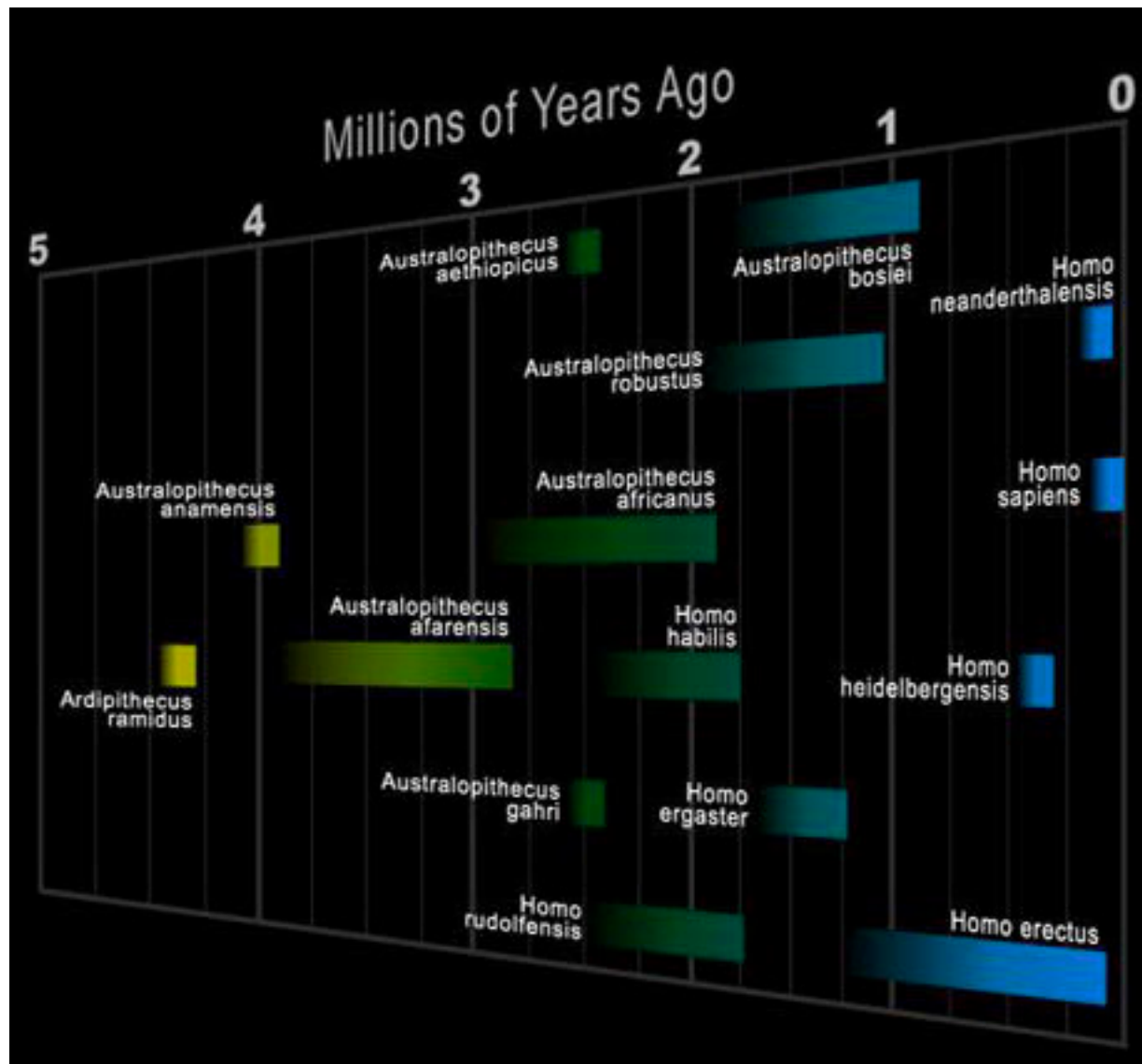
- Empiricism vs. Rationalism (or “nurture vs. nature”): against the blank slate
- Evolutionary reasoning as (sometimes, but not always) teleological
- Evolutionary reasoning and its relationship to a broader challenge to “classical” cognitive science

**ENG** *The Original  
Siamese Twins*  
& **BACHANG**



*4 People in One Book*

**D A V I D   R .   C O L L I N S**



# The Selfish Gene

- Altruism
- Kin preference (and other familial relationships)
- Sex
- Death





# Complications to “Easy Adaptationism”

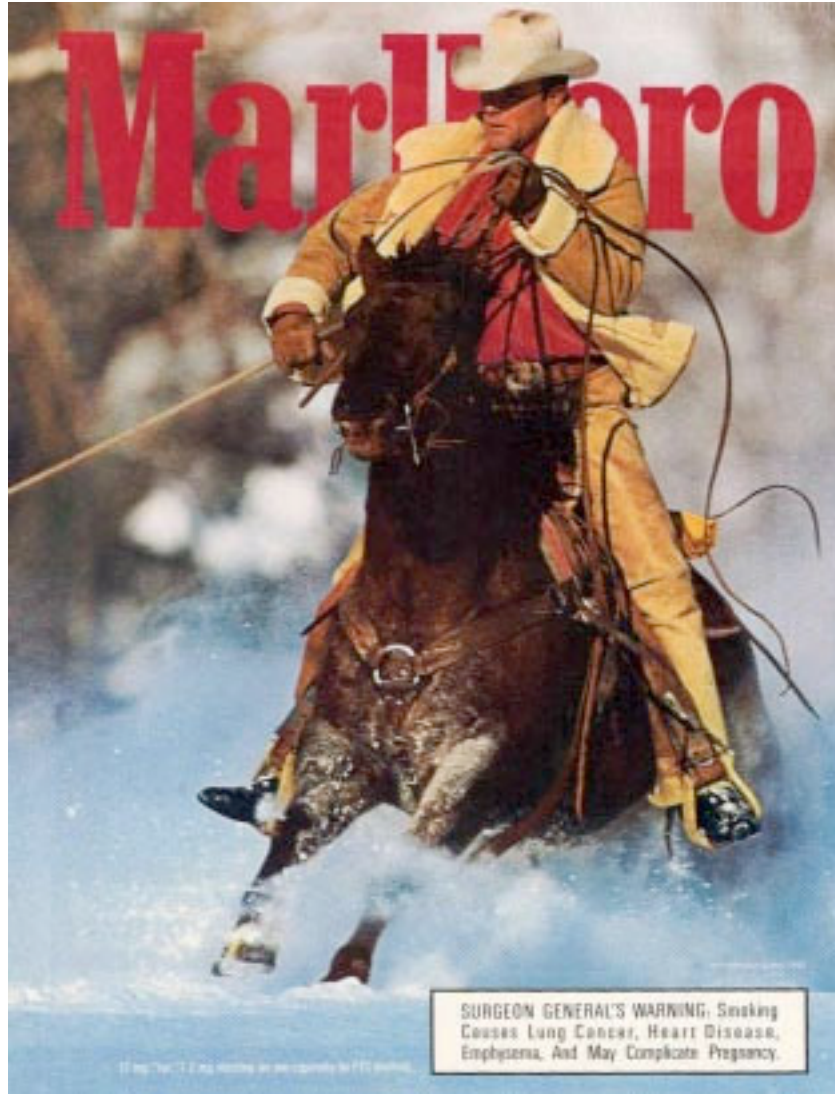
- Genetic drift
- The “environment of evolutionary adaptation” (EEA)
- Natural selection vs. sexual selection
- Cultural vs. genetic effects





“Self-handicapping” as an element of sexual selection





Marlboro

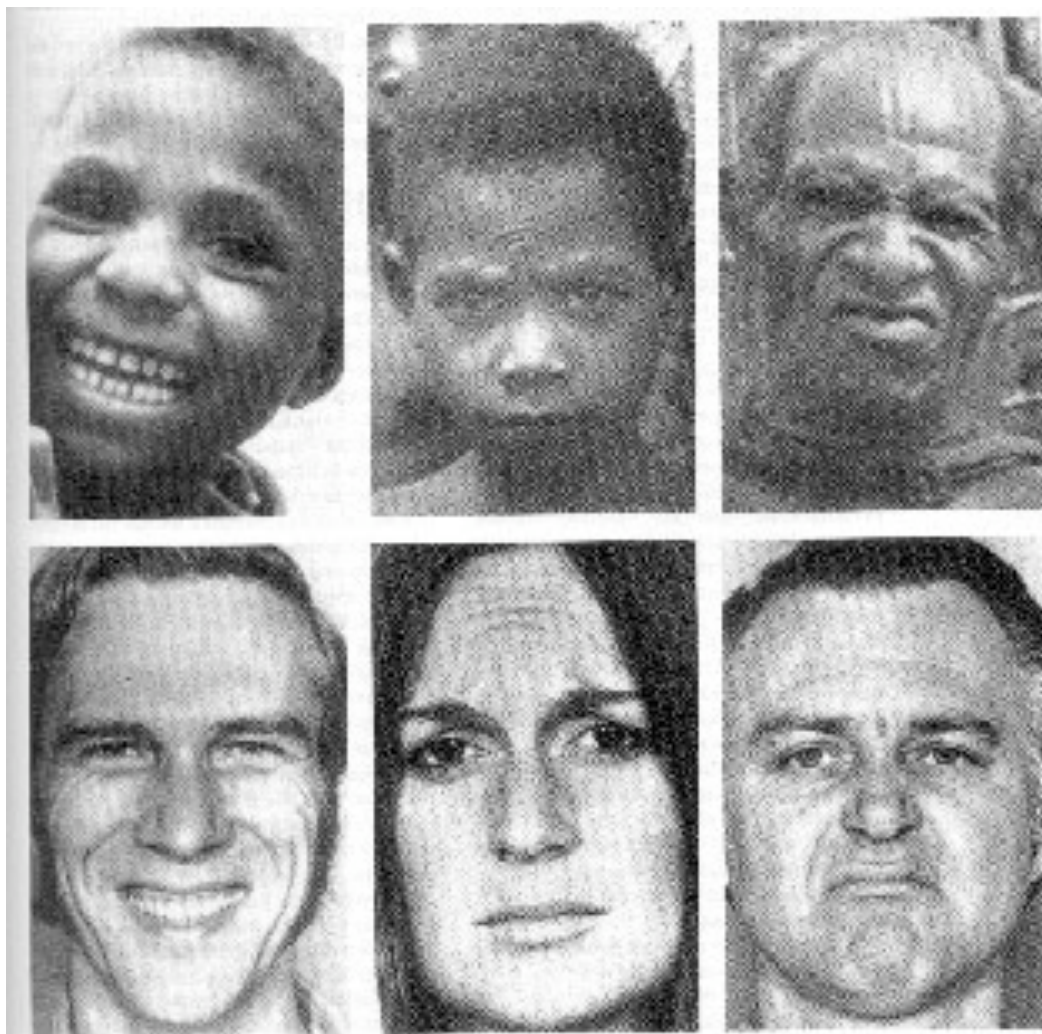
**SURGEON GENERAL'S WARNING: Smoking Causes Lung Cancer, Heart Disease, Emphysema, And May Complicate Pregnancy.**

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# Evolutionary Accounts of...

- Aesthetics
- Judgment and decision making
- Emotions (rage, joy, sorrow, etc.)
- Language (... and the issue of modularity)





# Evolutionary Psychology: Potential Pitfalls

- The problem of “just-so stories”
- How to find evidence? And how good is the evidence, anyhow?
- Genes and “memes” as alternative (and sometimes contrasting) self-reproducing agents
- The “eugenics” movement as a warning sign