

# Human - Nature: A Darwinian Psychology of Environmental Sustainability

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# Key publications

- Griskevicius, V., Cantu, S., & Van Vugt, M. (2012). The evolutionary bases for sustainable behavior. *Journal of Public Policy and Marketing*
- Griskevicius , V., Tybur, J., Delton, A., & Robertson, T. (2011). The influence of mortality and socioeconomic status on risk and delayed rewards: A life history approach. *Journal of Personality and Social Psychology*.
- Van Vugt, M. (2009), “Averting the Tragedy of the Commons: Using Social Psychological Science to Protect the Environment,” *Current Directions in Psychological Science*, 18, 169-173.
- Van Vugt, M., and C. Hardy (2010), “Cooperation for Reputation: Wasteful Contributions as Costly Signals in Public Goods,” *Group Processes and Intergroup Relations*, 13, 1-11.
- Van Vugt, M. (2001). Community identification moderating the impact of financial incentives in a natural social dilemma: A water shortage. *Personality and Social Psychology Bulletin*, 27, 1448-1449.  
Van Vugt, M., Van Lange, P. A. M., Meertens, R. M. and Joireman, J. A. (1996). Why structural solutions to social dilemmas might fail: A field experiment on the first carpool priority lane in Europe ([link](#)). *Social Psychology Quarterly*, 59 , 364-374.
- Van Vugt, M. (2001), “Community Identification Moderating the Impact of Financial Incentives in a Natural Social Dilemma: Water Conservation,” *Personality and Social Psychology Bulletin*, 25, 731-745.



## The Evolutionary Bases for Sustainable Behavior: Implications for Marketing, Policy, and Social Entrepreneurship

Vladas Griskevicius, Stephanie M. Cantú, and Mark van Vugt

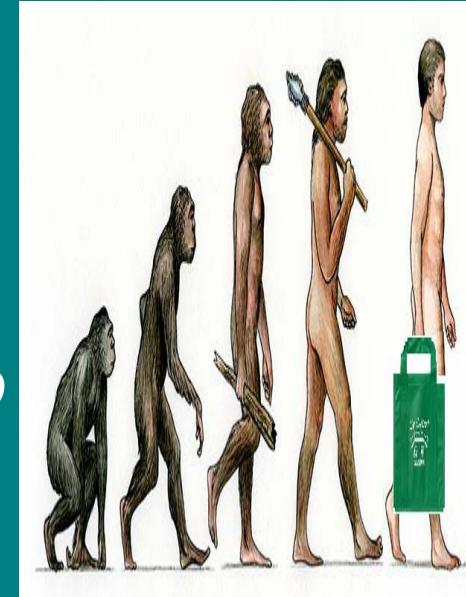
How can evolved human nature be leveraged to help eliminate or alleviate environmental problems? The authors examine the evolutionary bases of destructive and ecologically damaging human behavior. They propose that many modern environmental and social problems are caused or exacerbated by five adaptive tendencies rooted in evolutionary history: (1) propensity for self-interest, (2) motivation for relative rather than absolute status, (3) proclivity to unconsciously copy others, (4) predisposition to be shortsighted, and (5) proneness to disregard impalpable concerns. By considering the evolutionary processes that produced these tendencies, the authors present ways that marketers, policy makers, and social entrepreneurs can harness evolved human tendencies to lessen or even eradicate environmental and social problems. From an evolutionary perspective, optimally effective influence strategies must work with humans' evolved tendencies, rather than ignoring them or working against them.

# The range of our current environmental problems



# Questions

- *Why are people so slow to respond to environmental problems?*
- *Why have interventions to change environmental practices not been terribly effective yet?*
- *How can we bring about enduring changes in human behavioral patterns to foster a sustainable life style based on a sound understanding of human nature?*



# The Myth of the Ecological Noble Savage

- Humans have a long history of causing ecological destruction (Diamond, 2005; Penn, 2003)
  - Mass extinctions of mega fauna at hands of the indigenous people (the Pleistocene Overkill)
  - No relationship between beliefs in the sacredness of nature and sustainable practices in traditional societies (Low, 1996)



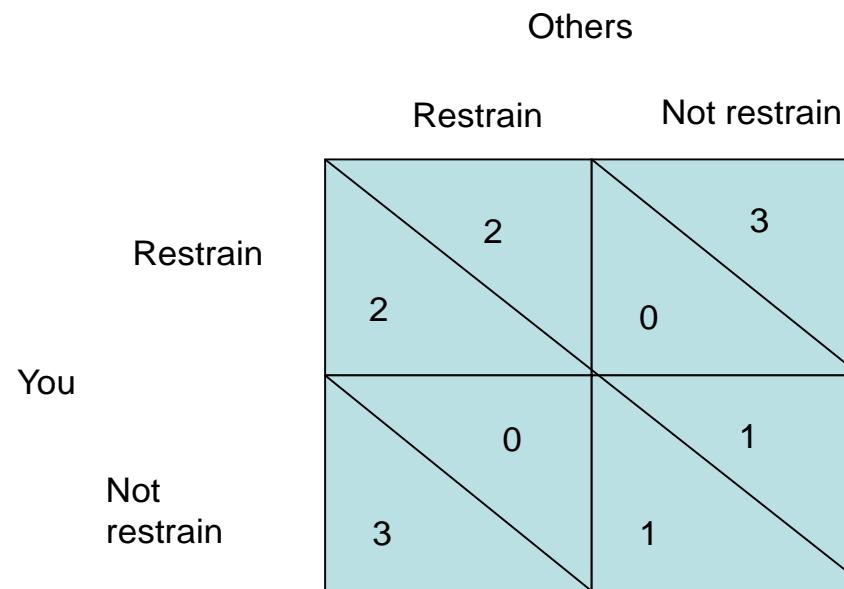
The Easter Island Tragedy

# “Big Five” social psychological explanations for unsustainable practices

1. Humans have evolved to prioritize self-interest above the collective interest
2. Humans value the present over the future
3. Humans are motivated by relative status
4. Humans copy what others are doing
5. Humans are adapted to ancestral, not modern environments



# Overfishing as Social Dilemma



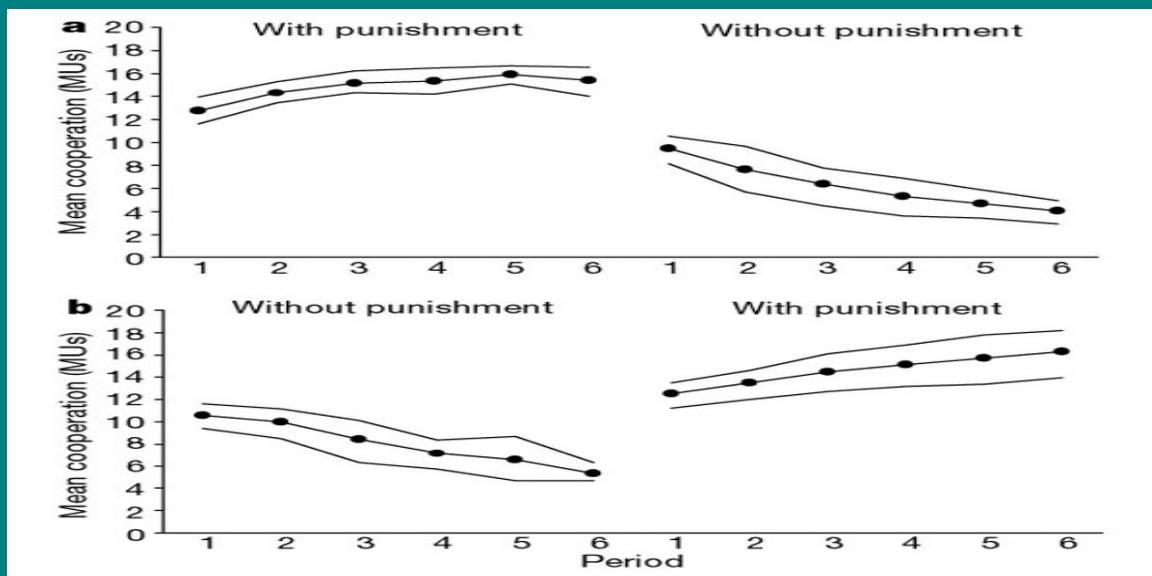
# 1. Prioritizing self-interest

Tragedy of the Commons:

Human mind evolved to prioritize personal over collective interests

*Why environmental policies can fail*

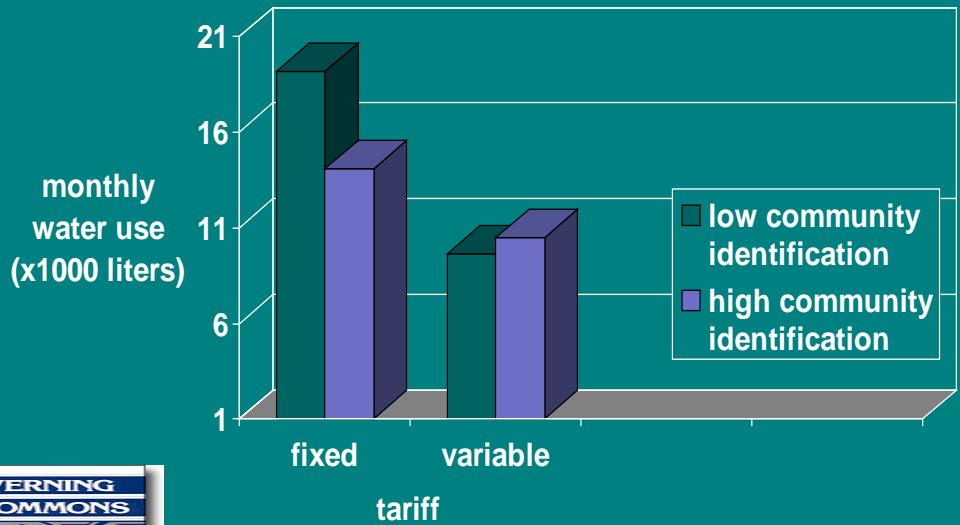
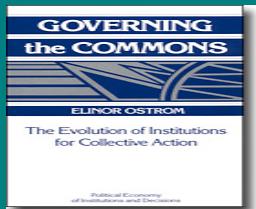
**Persuading people to value societal interests above their personal interests is exceedingly difficult**



(Fehr & Gachter, 2002)

# 1. Harnessing (genetic) self-interest

- Kinship
  - Highlight one's genetic interest (face morphs)
  - Use real or fictitious kin labels in campaigns ("Mother Nature")
- Reciprocal altruism
  - Towel reusage in hotels
- Group selection
  - Create strong communities; Elinor Ostrom approach (e.g., Maine lobster fisheries)



(Van Vugt, 2001)

# Averting the tragedy of the commons: The 4I model

**TABLE 1**

*Four I's: Core Motives and Foci of Interventions for Successful Commons Resource Management and Potential Constraints*

Focus of intervention	Core motive	Description	Aim of intervention	Potential constraint
Information	Understanding	The need to understand the physical and social environment	Reducing environmental and social uncertainty	Global environmental problems are inherently uncertain.
Identity	Belonging	The need for positive social identity	Improving and broadening one's sense of community	Resource competition between communities increases overuse.
Institutions	Trusting	The need to build trusting relationships	Increasing acceptance of commons rules and institutions	Authorities are not always seen as legitimate and fair.
Incentives	Self-Enhancing	The need to improve oneself and increase one's resources	Punishing overuse and rewarding responsible use	Economic incentives undermine intrinsic motivation to conserve.

# What do you choose?

(A) 10 pounds today

or

(B) 15 pounds next week

## 2. Valuing the present over the future

*Why environmental policies can fail*

Temporal discounting:

The human mind evolved to prioritize immediate rewards as discounting the future had enormous benefits in our past

**Persuading people to value future rewards more than immediate rewards may be difficult**

## 2. Valuing the Present and the Future

- Life history perspectives
  - Offer safe and stable environments (especially for children)
- Sex differences in discount rates
  - Women prefer to date men who are green and fit (Gotts & Van Vugt, 2011)
  - Men discount the future more than women

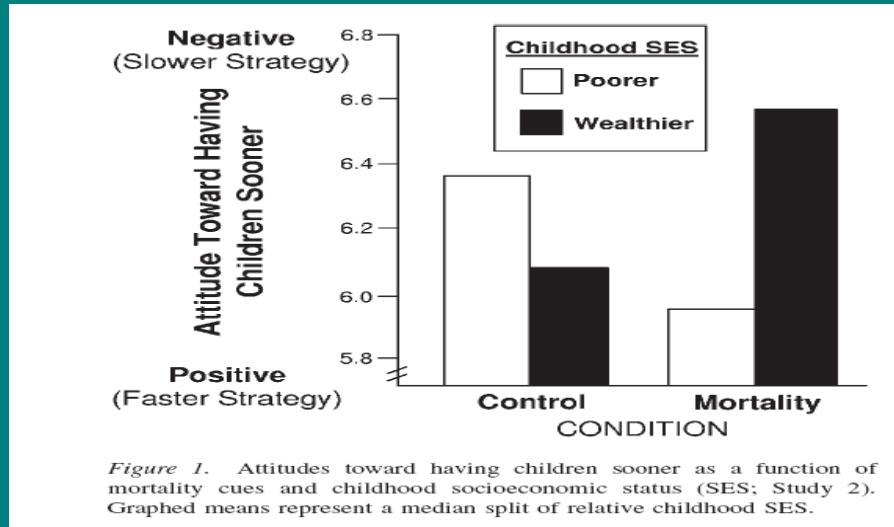
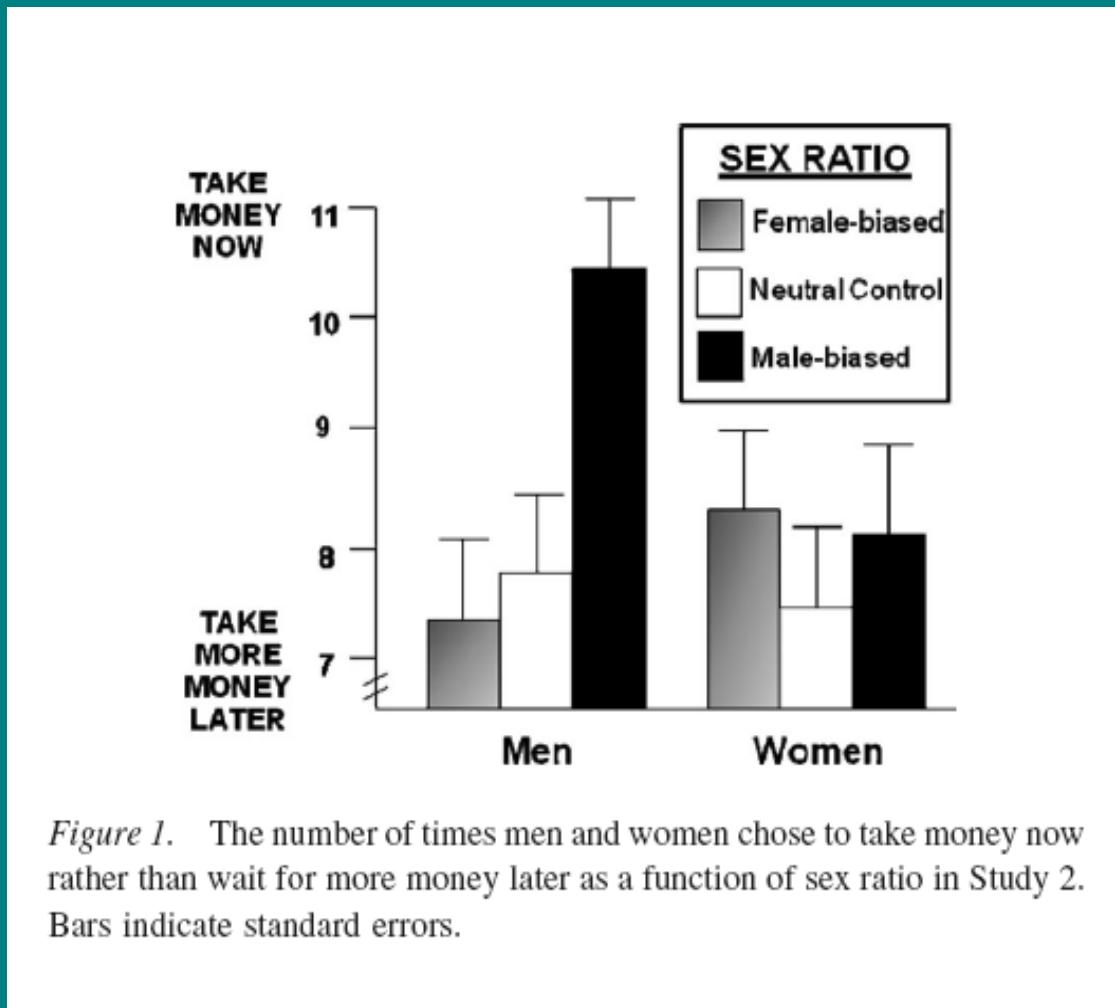


Figure 1. Attitudes toward having children sooner as a function of mortality cues and childhood socioeconomic status (SES; Study 2). Graphed means represent a median split of relative childhood SES.



# Sex ratios affect discount rates (men only)



*Figure 1.* The number of times men and women chose to take money now rather than wait for more money later as a function of sex ratio in Study 2. Bars indicate standard errors.

# What do you choose?

(A) a 200 square meter home in a neighborhood of 300 square meter homes,

or

(B) a 150 square meter home in a neighborhood of 100 square meter homes.

### 3. Prioritizing relative over absolute status

- Desire for status: Keeping up with the Joneses as fundamental motive (Frank, 1985; Van Vugt, 2006)

*Why environmental policies can fail*

**Persuading people to be content with their current status or behave in ways that lower their status are likely to fail**

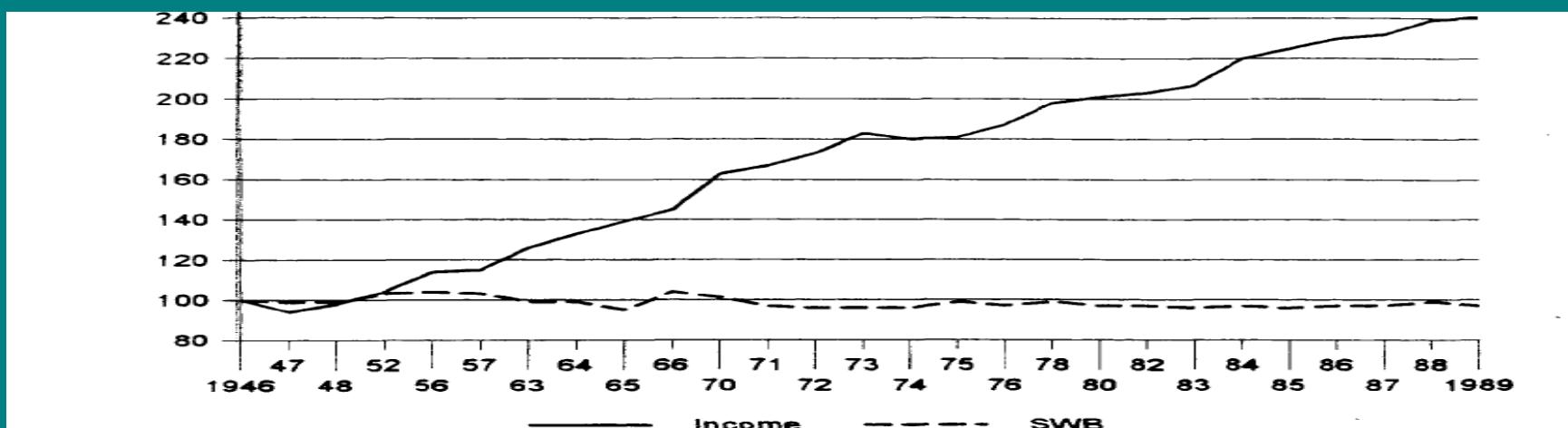
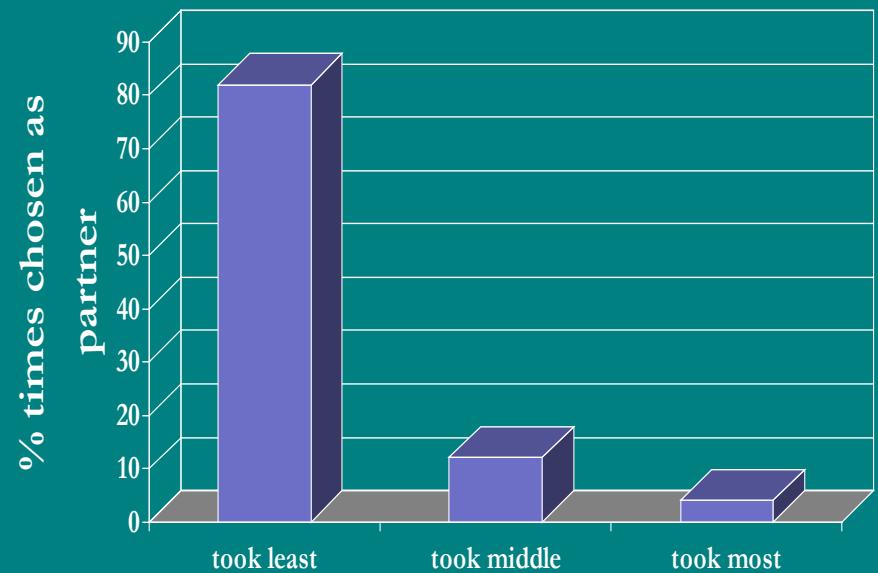
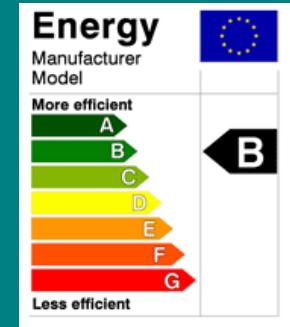


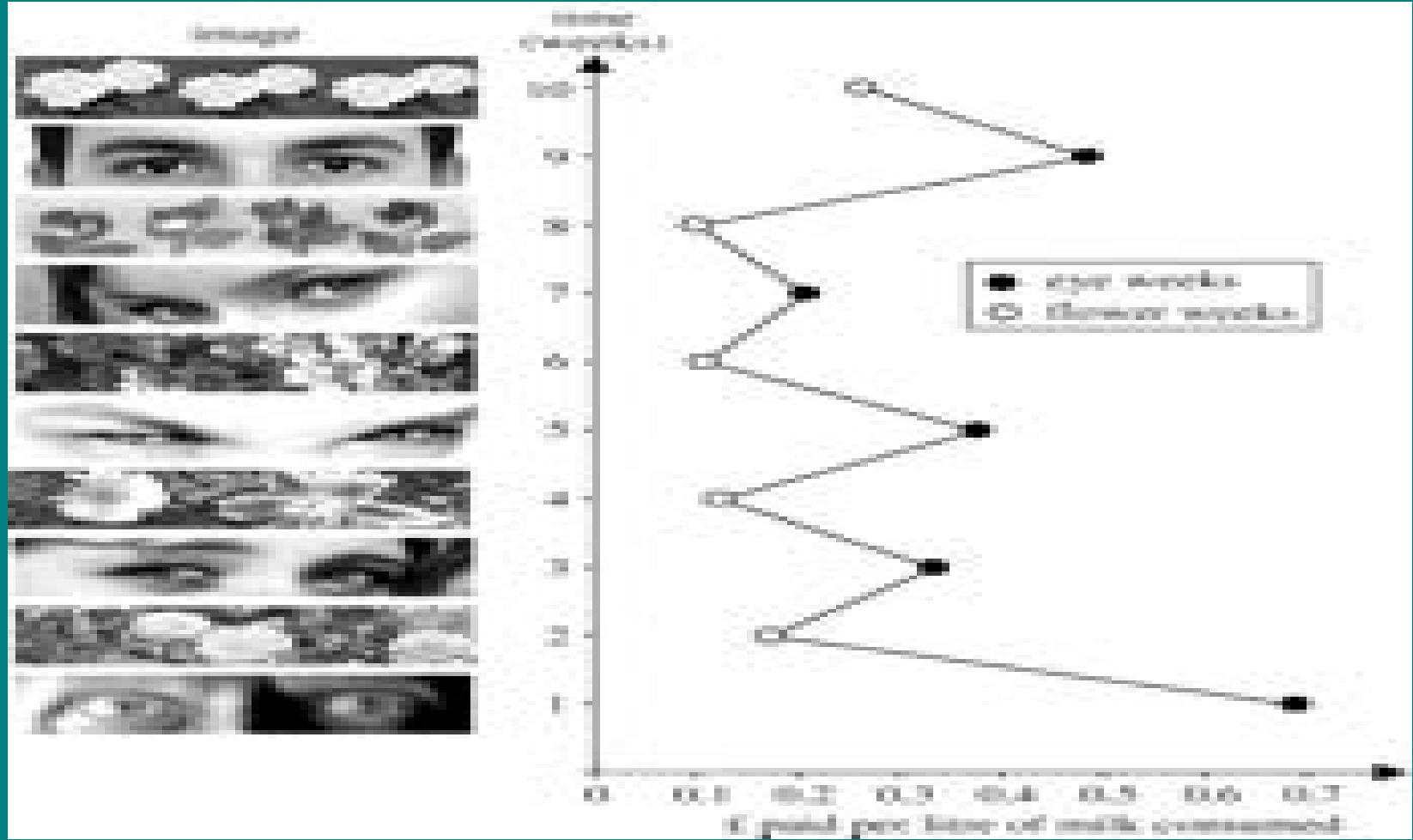
Figure 1. United States income and subjective well-being (SWB), 1946–1989. Income is percentage of after-tax disposable personal income in 1946 dollars (adjusted for inflation). Subjective well-being is reports of happiness as percentage values of the 1946 values.

### 3. Improving the status of green behaviors

- Costly signaling: Green” choices as peacock’s tails
- *Competitive environmentalism*
  - Visible signs and tags for green options
  - “Green” guys finish first (Hardy & Van Vugt, 2006),



# Power of Reputations: The eyes have it

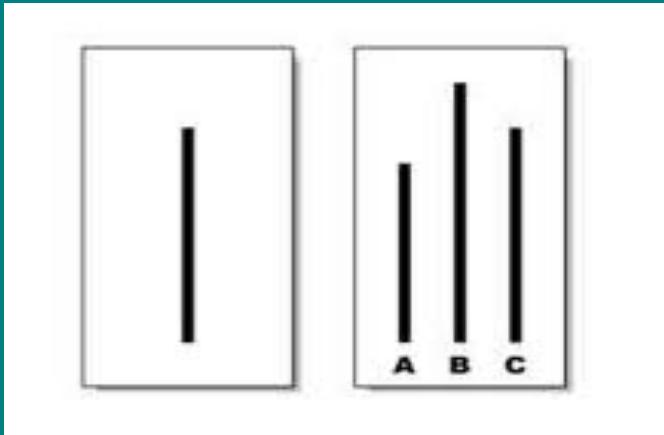


# 4. Copying others

Conformity:

The human mind has evolved to imitate  
others

-- even when they know they are wrong  
(Asch, 1956)



*Why environmental policies  
can fail*

**Persuading people to  
behave environmentally  
because they ought to  
do so is likely to fail if  
people are not  
convinced others are  
behaving this way**

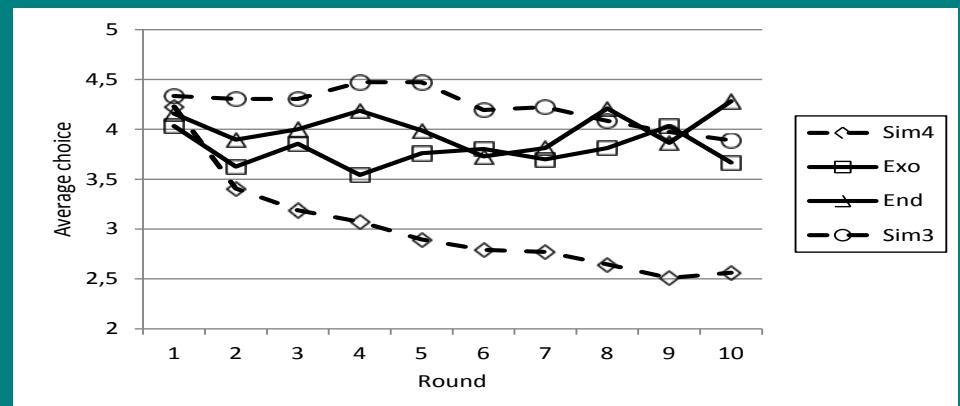


# Copying others to spur sustainable behaviours

- Cultural evolution: Evolved copying biases produce local environmental norms (memes)
- Follow the majority
  - Show that environmental behavior is normal (Petrified forest; Cialdini, 2003)
- Follow green norms
  - Social approval techniques (OPOWER);
- Follow green opinion leaders (Van Vugt & Ahuja, 2011)



**Figure 2:** The average choice by treatment and round.



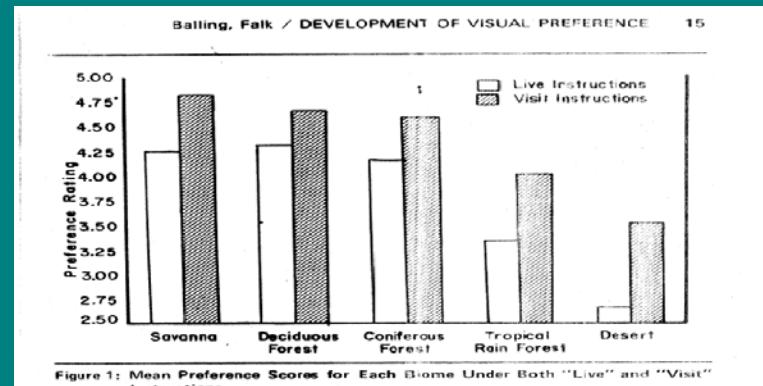
# 5. Mismatch between ancestral and modern environments

- Mismatch:
- The human mind is adapted to ancestral environments and is perhaps slow to respond to evolutionary novel threats
  - innate fear of snakes and spiders; Ohman & Mineka, 2000)
  - Inbuilt preference for savannah landscapes (Falk, 1982)



*Why environmental policies can fail*

**People are not easily persuaded by environmental threats that they cannot feel, hear, smell, touch or see**



# 5. Presenting information to match ancestral mechanisms

- Evolutionary Mismatch theory
  - Present distant environmental problems in concrete, frequentist terms (ecological rationality)
  - Interventions to elicit visceral responses to environmental problems (disgust studies)
- Unleash Biophilia
- Exposure to nature is rewarding (Wilson, 2006)
  - Growing up in city increases social stress (Lederbogen et al., 2011)

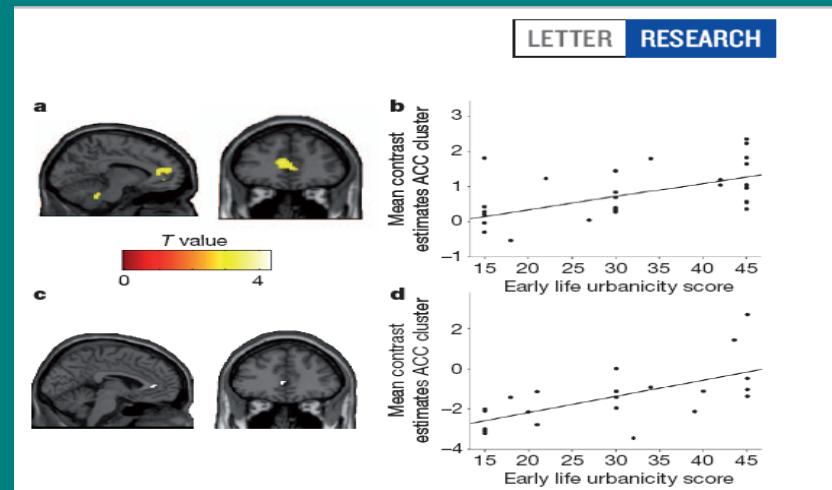
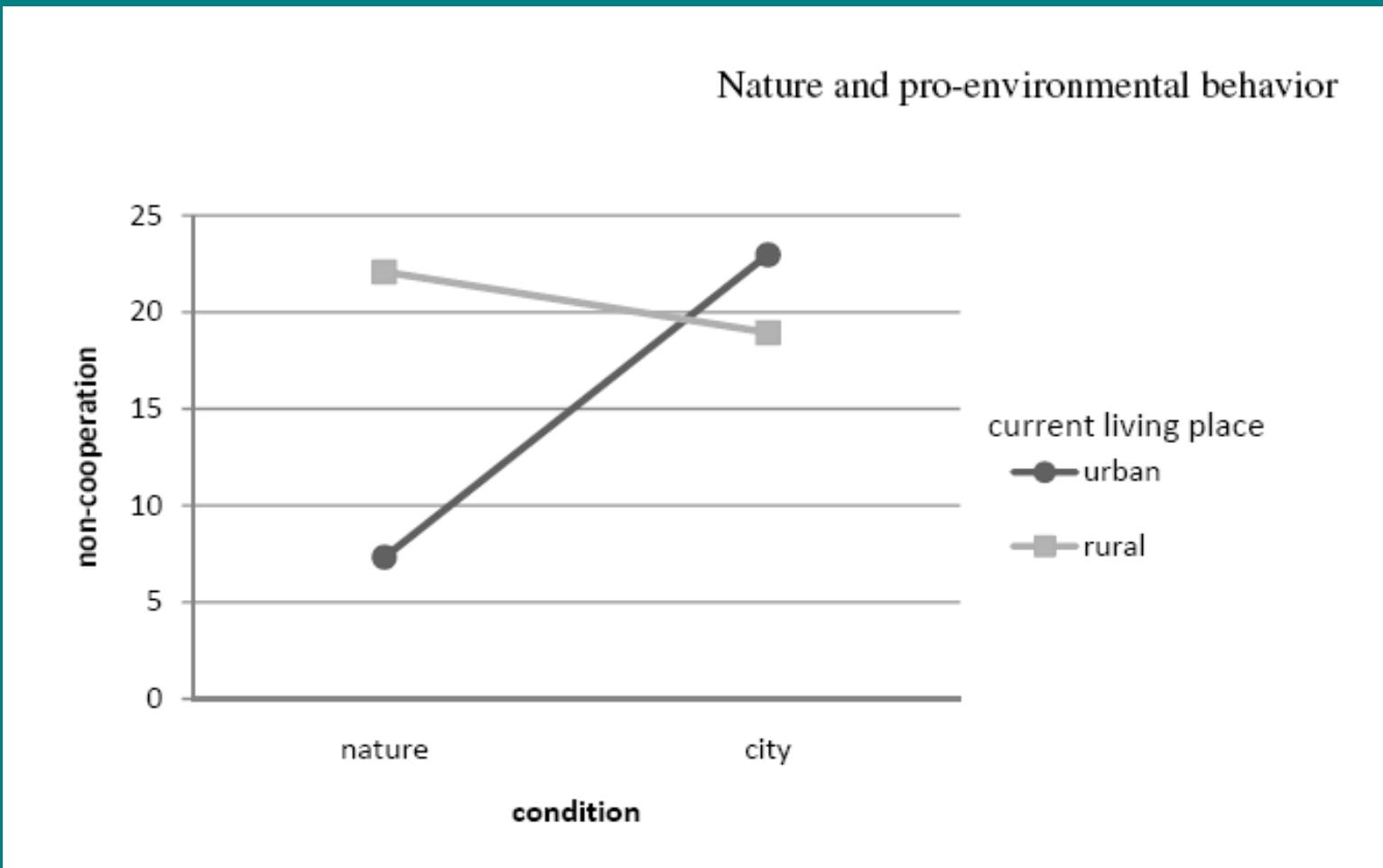


Figure 2 | Relationship between early life urbanicity scores and pACC activation. a, Discovery study ( $N = 32$ ):  $T$  map of significant correlations between stress-related activations (in the experimental versus control contrast)

# Nature promotes cooperation (among city folks)



# Interventions

People differ

Some are more selfish or impulsive than others, (Van Vugt et al., 1995)

- Tailored marketing approach

Cultures differ

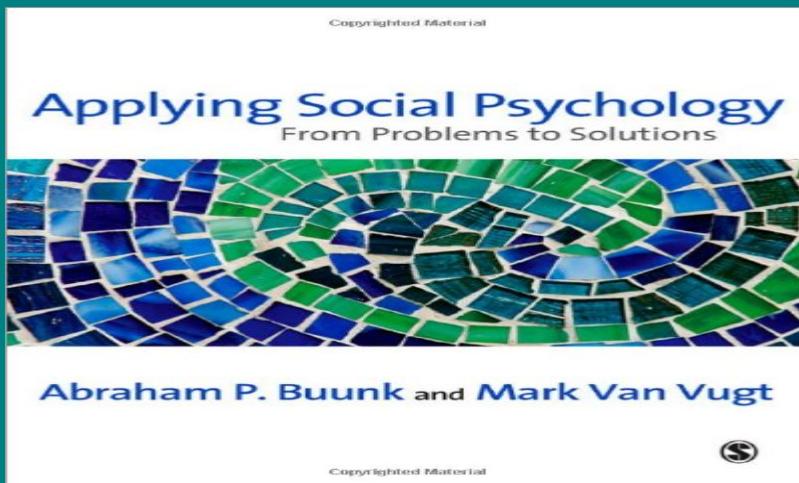
Some are more individualistic than others

- **Political obstacles**

Democratic governments are more concerned with tackling immediate rather than future problems

**PATH model to develop sustainable interventions based on social psychology**

- (1) Problem – define problem**
- (2) Analysis – search explanations**
- (3) Test – do research**
- (4) Help – develop intervention (strategy, channel, costs)**



# Thank You!



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