

# Announcements

- If you didn't get an email confirmation that I received your referee report, let me know
- The empirical project is due April 14th at 5pm
- Pay attention to what each part is asking for (tables, figures, amount of explanation, etc.)
- Each part should be presented on its own and numbered (rather than trying to integrate the parts together)
- Graphs and tables should be produced by you from raw data, not reproduced from another source
- Remember to turn it in as a well-formatted pdf

# Time Preference Rates

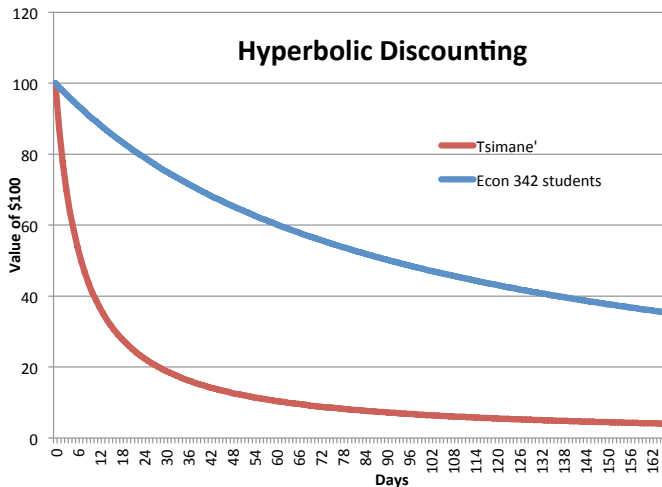
Choice values and associated discount rates for questions used to elicit rates of private time preference for money and food

	Reward values (B\$)		Delay (days)	Rate at indifference	
Question	Today	Later		$k$	$r$
Money					
5	8.0	8.5	157	0.00040	.00039
3	6.7	7.5	119	0.0010	.00095
4	6.9	8.5	91	0.0025	.0023
1	5.5	7.5	61	0.0060	.0051
8	5.4	8.0	30	0.016	.013
7	4.1	7.5	20	0.041	.030
6	3.3	8.0	14	0.10	.063
2	3.1	8.5	7	0.25	.14
Candy					
4	16	17	157	0.00040	.00039
3	13	15	153	0.00101	.00094
1	11	15	61	0.0060	.0051
7	11	16	28	0.016	.013
6	8	15	21	0.042	.030
5	7	17	14	0.102	.063
2	6	17	7	0.26	.15

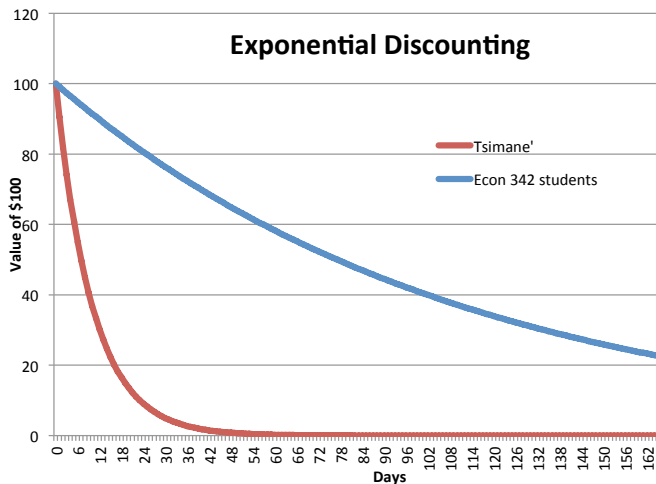
“Rate at indifference” indicates the value of hyperbolic ( $k$ ) and continuously compounded exponential ( $r$ ) discount rates at which immediate and delayed rewards are of equal value.

US\$1.00  $\approx$  B\$6.00.

# Time Preference Rates



# Time Preference Rates



# Time Preference Rates

Relation between impatience and the accumulation of different types of human capital

Explanatory variable	Dependent variable (type of human capital)	
	Schooling	Folk knowledge
Impatience	−0.547 (0.278)**	0.011 (0.004)***
Age	−0.096 (0.017)***	0.001 (0.0003)***
Male	1.592 (0.542)***	0.024 (0.012)***
$R^2$	0.31	0.39
$n$	406	309

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

# Time Preference Rates

- Back to the main point of Reyes-Garcia et al., “The Origins of Monetary Income Inequality: Patience, Human Capital, and Division of Labor”
- Their basic argument:
  - In a self-sufficient society, patience is exogenously determined and people rely on folk knowledge for human capital
  - With the establishment of schools, patient and impatient people sort themselves
  - Patient and impatient people start to acquire different types of human capital, different jobs and different outcomes
  - This leads to divergence within a society (income inequality)
- Clark is going to tell a somewhat related story about differences in traits and economic development across countries

# Driving Social Evolution

- Clark is focusing on these traits that seem to be important for economic growth: education, patience, etc.
- Perhaps a necessary condition for industrialization is having a large enough percentage of the population possessing these economic virtues
- This raises the question of how these traits are developed and how they arise or spread throughout the occupational distribution
- Clark's main focus is on how these traits diffuse throughout the population, arguing that the diffusion process is all about fertility patterns

# Simple Example of Diffusion Process

- Let's say there are three groups making up a population: A, B and C
- Group A has growth-promoting characteristics
- All three groups initially have 100 people in them
- However, group A is growing at 10 people every generation, group B is staying the same size and group C is shrinking by 10 people every generation
- What percentage of the population in each generation has the growth-promoting characteristics?

# Simple Example of Diffusion Process

Generation	A	B	C	Percentage with Trait
1	100	100	100	33
2	110	100	90	37
3	120	100	80	40
4	130	100	70	43
5	140	100	60	47
6	150	100	50	50
7	160	100	40	53
8	170	100	30	57

# Simple Example of Diffusion Process

- We can think of the bottom third of the income distribution as the lower class, the middle third as the middle class and the top third as the upper class
- After the first generation, the growth-promoting characteristics begin to diffuse to the middle class
- After roughly ten generations, the growth-promoting characteristics have diffused throughout the entire middle class
- If we assume that some upward mobility exists, this diffusion process would be even quicker
- Note that this depends on the upper class not being able to expand to accommodate all of the extra kids

# Driving Social Evolution

- This social evolution story requires establishing a couple of key empirical facts:
  - Those relevant economic virtues (education, patience, etc.) are most prominent among wealthier individuals
  - Wealthier individuals have higher fertility rates than poorer individuals in England
  - Wealthier individuals don't have higher fertility rates than poorer individuals in other societies
- We've already looked at links between literacy, numeracy, patience and wealth
- Let's take a look at Clark's evidence on fertility rates

# Evidence of Fertility Rates and Income

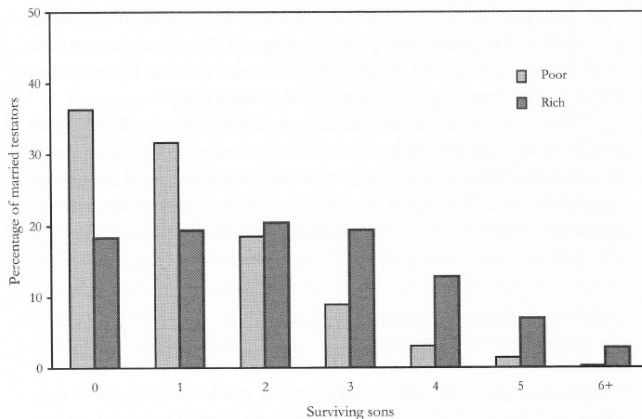
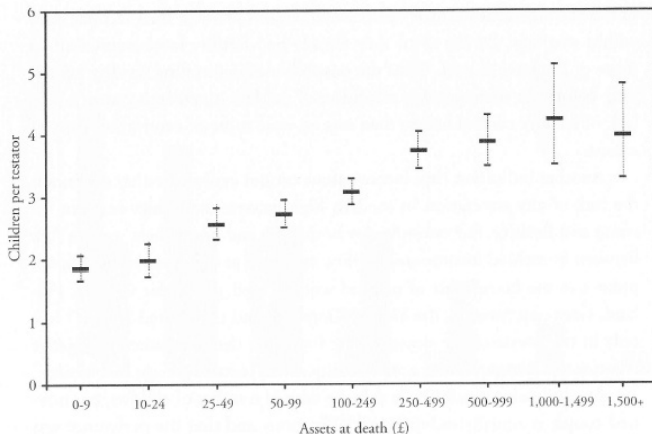


Figure 14.8 Percentage of men with particular numbers of sons, England, 1585–1638.

# Evidence of Fertility Rates and Income



**Figure 14.7** Surviving children as a function of wealth in England, circa 1620. The bands for each wealth class show the range of values within which we can be 95 percent confident that the true numbers of surviving children per testator lay.

# Evidence of Fertility Rates and Income

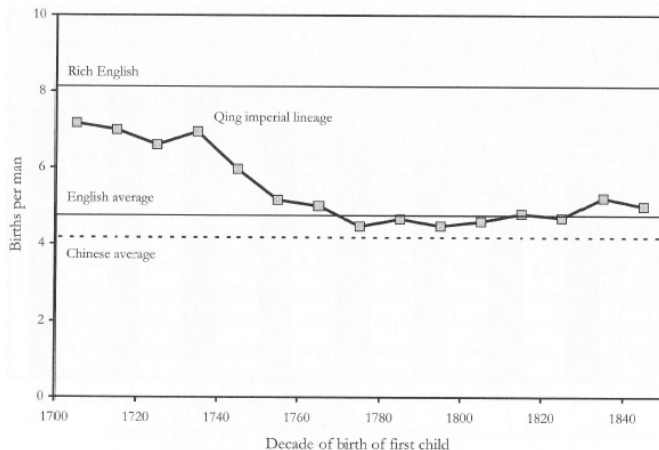
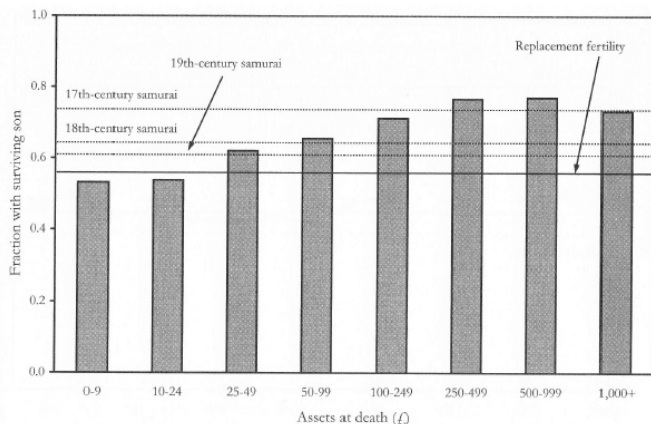


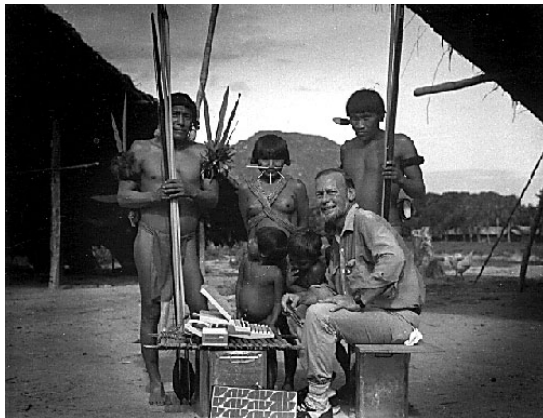
Figure 13.4 Male total fertility rate for the Qing imperial lineage.

# Evidence of Fertility Rates and Income

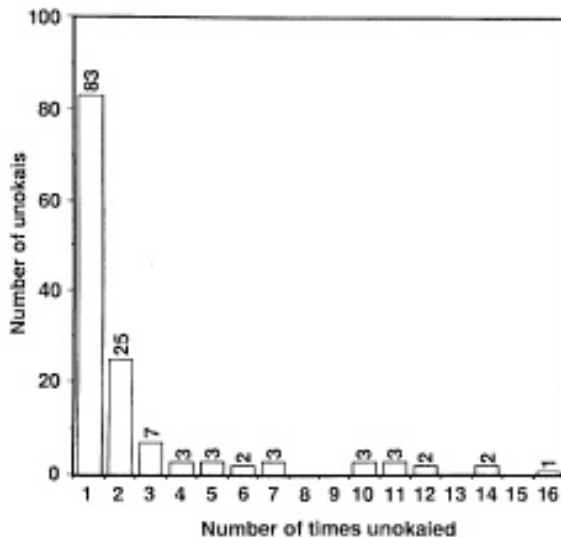


**Figure 13.3** Samurai net fertility by century compared to English net fertility 1620–38 by size of bequest.

# A Counterexample: the Yanomamo



# Chagnon's Study of the Yanomamo



# Marriage and the Yanomamo

Ages	<i>Unokais</i>			Non- <i>unokais</i>		
	<i>n</i>	Num- ber of wives	Average number of wives	<i>n</i>	Num- ber of wives	Average number of wives
20–24	5	4	0.80	78	10	0.13
25–30	14	13	0.93	58	31	0.53
31–40	43	49	1.14	61	59	0.97
>41	75	157	2.09	46	54	1.17
Total	137	223	1.63	243	154	0.63

# Fertility and the Yanomamo

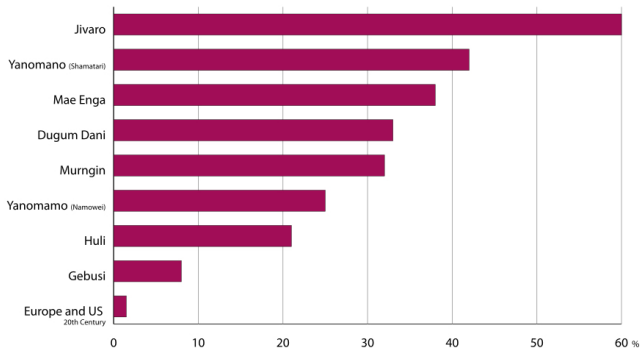
Ages	<i>Unokais</i>			<i>Non-unokais</i>		
	<i>n</i>	Num- ber of off- spring	Average number of offspring	<i>n</i>	Num- ber of off- spring	Average number of offspring
20–24	5	5	1.00	78	14	0.18
25–30	14	22	1.57	58	50	0.86
31–40	43	122	2.83	61	123	2.02
>41	75	524	6.99	46	193	4.19
Total	137	673	4.91	243	380	1.59

# Fertility and the Yanomamo

## Percentage of male deaths caused by warfare

Sources: Keeley, Lawrence (1996). *War Before Civilization: the Myth of the Peaceful Savage*. New York: Oxford University Press. as referenced in Pinker, Steven (2002). *The Blank Slate*. New York: Penguin.

SOCIETY / TRIBE



# Brief Recap of Clark's Thesis

- Clark points to a social evolution as underlying the Industrial Revolution
- What distinguished England from other countries at the time of the Industrial Revolution was a higher prevalence of behaviors and attitudes conducive to economic growth (education, patience, thrift, etc.)
- The reason the behaviors and attitudes were more prevalent had to do with fertility patterns

# Brief Recap of Clark's Thesis

- Education, patience, and other characteristics were most prominent among the wealthy
- The wealthy had substantially more children than the poor, leading to downward mobility among the wealthy offspring
- This downward mobility led to the diffusion of the desirable behaviors and attitudes throughout the income distribution
- Eventually you have a population capable of industrialization

# Critiquing Clark

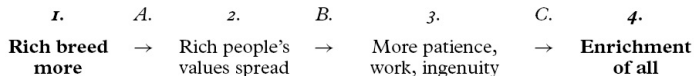
- *A Farewell to Alms* has received a substantial amount of criticism both within economics and in the popular press
- The *European Review of Economic History* devoted an entire issue to critiques of the book (several are posted on Blackboard if you want to see them)
- Robert Allen has a review in which he essentially tries to refute just about every aspect of the book (also posted on Blackboard)
- The social evolution arguments draw the most criticism but other aspects of the book often come under fire as well
- We'll quickly review Deirdre McCloskey's critique

# McCloskey's Critique of Clark

- Clark is trying too hard to make shifts in norms and culture have a purely economic and evolutionary basis
- Focus on numerical data limits what he can actually say
- “Not the commercial virtues inherited by people but the virtues praised by people is what’s required.”
- Non-Europeans did quite well when they moved to places in which bourgeois values are honored
- The biological diffusion process is too quick (other critiques say the opposite)

# McCloskey's Critique of Clark

**The Clark hypothesis: Rich people are better and drive out the poor**



# McCloskey's Critique of Clark

## The Classes and the Virtues

Aristocrat Patrician	Peasant Plebeian	Bourgeois Mercantile
pagan	Christian	secular
Achilles	St. Francis	Benjamin Franklin
pride of being	pride of service	pride of action
honor	duty	integrity
forthrightness	candor	honesty
loyalty	solidarity	trustworthiness
courage	fortitude	enterprise
wit	jocularly	humor
courtesy	reverence	respect
propriety	humility	modesty
magnanimity	benevolence	consideration
justice	fairness	responsibility
foresight	wisdom	prudence
moderation	frugality	thrift
love	charity	affection
grace	dignity	self-possession
subjective	objective	conjective

*From McCloskey, "Bourgeois Virtue", 1994*

# McCloskey and Bourgeois Virtue

- So how is McCloskey establishing the 'virtues praised by people'
- A typical economist approach would be to say let's see which virtues get priced more highly in markets
- But is this a sensible approach given McCloskey's bigger question?
- Is it even possible to find markets that price virtues?

# Pricing Virtue

FIGURE 1: RECIPIENT PREFERENCES

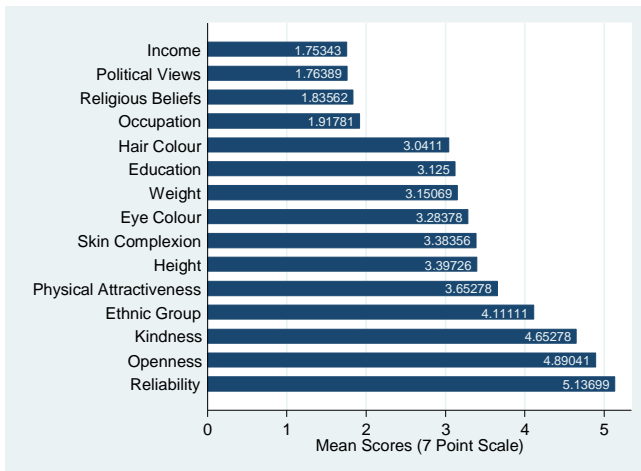


Table 1

## Prevalence of Brideprice in Contemporary Societies

Country	Years	Paid a brideprice	# Observations
Rural China	1950–2000	79%	451
Urban China	1933–1987	9%	586
Taiwan	1940–1975	53%	964
Rural Thailand	1950–1978	93%	248
Urban Thailand	1950–1978	79%	395
Cairo (Egypt)	1940–1976	93%	919
Damascus (Syria)	1940–1976	84%	1164
Kinshasa (Zaire)	1940–1976	96%	694
Tororo (Uganda)	1940–1976	95%	781
Urban Iran	1971–1991	99%	511
Uganda	1960–1996	73%	1657
Rural Uganda	1960–1980	98%	155
Rural Uganda	1980–1990	88%	364
Rural Uganda	1990–1996	65%	226
Urban Uganda	1960–1980	96%	93
Urban Uganda	1980–1990	79%	379
Urban Uganda	1990–1996	46%	440
Turkey	1944–1993	29%	6519
Rural Turkey	1960–1975	46%	127
Rural Turkey	1975–1985	37%	205
Rural Turkey	1985–1998	23%	286
Urban Turkey	1960–1975	34%	210
Urban Turkey	1975–1985	24%	367
Urban Turkey	1985–1998	12%	650

*Source:* Information for rural China comes from Brown (2003); for urban China, from Whyte (1993); for Taiwan, from Parish and Willis (1993); for Thailand refer to Cherlin and Chamratrithirong (1988). Statistics for cities of Egypt, Syria, Zaire, and Uganda are from Huzayyin and Acsádi (1976), and for Iran, see Habibi (1997). The data used for the statistics from Uganda and Turkey are from the Demographic Health Surveys.

*Table 2*  
**Prevalence of Dowry in Contemporary Societies**

<i>Country</i>	<i>Years</i>	<i>Paid a dowry</i>	<i># Observations</i>
Rural India	1960–1995	93%	1217
Rural India	1970–1994	94%	1842
Rural Pakistan	1970–1993	97%	1030
Pakistan	1986–1991	87%	1300
Rural Bangladesh	1945–1960	3%	2303
Rural Bangladesh	1960–1975	11%	3367
Rural Bangladesh	1975–1990	44%	3745
Rural Bangladesh	1990–1996	61%	1065
Rural Bangladesh	2003	76%	1279

*Source:* Information for the first sample from rural India comes from the NCAER (National Council of Applied Economic Research, India) data provided by Vijayendra Rao. The second sample is from the Survey on the Status of Women and Fertility (SWAF) by the Population Studies Center, University of Pennsylvania. For Pakistan, the first sample is from the SWAF, the second from the surveys of the World Bank's Living Standards Measurement Study. The Bangladesh data for the earlier years is from the Matlab RAND Family Life Surveys; the final sample, for the year 2003, is from Suran, Amin, Huq, and Chowdury (2004).

*Table 3*  
**Marriage Transfers from the Groom's Side**

<i>Society</i>	<i>Time period</i>	<i>Average payments</i>	<i>Magnitude of average payments</i>
<b>Germanic Tribes:</b>			
Visigoths (Spain)	9 <sup>th</sup> century		1/10 husband's wealth (Quale, 1988)
Lombards (Italy)	9 <sup>th</sup> century		1/4 husband's wealth (Quale, 1988)
Franks (France)	9 <sup>th</sup> century		1/3 husband's wealth (Quale, 1988)
<b>Asia:</b>			
Rural interior provinces (China)	1960–2000	538 yuan (1985)	82% of value of household durables (Brown, 2003)
Rural south west (China)	1983–1987	700 yuan (1987)	1.1 × per capita annual income (Harrell, 1992)
Rural east Szechwan	1966–1981	109 yuan (1980)	1 × per capita annual income (Lavelly, 1988)
<b>Middle East:</b>			
Palestine	1920s	£49 (1925)	8 years of income for landless agricultural laborer (Papps, 1983)
Urban Iran	1971–1991	1,807,200 Iranian rials (1980)	\$7059 (Habibi, 1997)
<b>Sub-Saharan Africa:</b>			
Rural Zimbabwe	1940–1995	8–9 cattle	2–4 × gross household annual income (Dekker and Hoogeveen, 2002)
Bantu tribe (southern Africa)	1955	100 goats	Larger than average herd size per household (Gray, 1960)
East African herders	1940–1978	15–50 large stock	12–20 × per capita holdings of large stock (Turton, 1980)
Uganda	1960–2001	872,601 shillings (2000)	14% of household income (Bishai and Grossbard, 2006)

Table 4

## Marriage Transfers from the Bride's Side

<i>Society</i>	<i>Time period</i>	<i>Average payments</i>	<i>Magnitude of average payments</i>
<b>Historical</b>			
<b>Europe:</b>			
Athens	6 <sup>th</sup> Century BC		10% bride's father's wealth (Quale, 1988)
Mediterranean	969–1250	150–1500 dinars	800 dinars could maintain a family for 30 years (Goiten, 1978)
Jews			
Tuscany	1415–1436	125.5 florins	20% bride's household wealth (Botticini, 1999)
Urban	1420–1436	1507.7 lire	6× annual wage of skilled worker (Botticini and Siow, 2003)
Tuscany			
Florence	1475–1499	1430 florins	3× average fiscal wealth per household (Molho, 1994)
<b>Colonial Latin</b>			
<b>America:</b>			
Mexico	1640–1790	1000–5000 pesos	Equal to the cost of 3–16 slaves (Lavrín and Couturier, 1979)

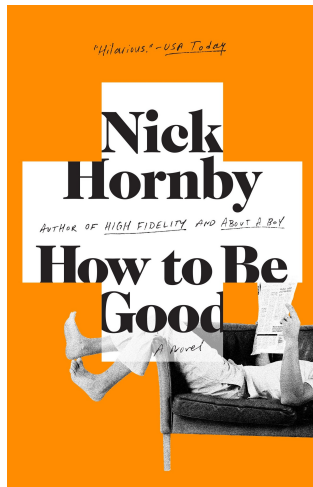
# Pricing Virtue

## South Asia:

Rural Karnataka (India)	1960–1995	66,322 Rupees (1995)	6× annual village male wage (Rahman and Rao, 2004)
Rural Uttar Pradesh (India)	1960–1995	46,096 Rupees (1995)	3× annual village male wage (Rahman and Rao, 2004)
Rural south- central India	1920s–1980s	4,792 Rupees (1983)	68% of total household assets before marriage (Rao, 1993)
Rural Uttar Pradesh (India)	1970–1994	\$700	7× per capita annual income (Jejeebhoy and Sathar, 2001)
Rural Tamil Nadu (India)	1970–1994	\$769	8× per capita annual income (Jejeebhoy and Sathar, 2001)
Delhi (India)	1920–1984	>50,000 Rupees (1984)	4× annual male income (Paul, 1986)
Rural Bangladesh	1996	12,700 Taka (1996)	62% of average annual household gross income (Esteve-Volart, 2004)
Rural Pakistan	1986–1991	18,196 Rupees (1991)	1.13 × annual household income (Anderson, 2005)
Urban Pakistan	1986–1991	32,451 Rupees (1991)	1.23 × annual household income (Anderson, 2005)

*According to Chojnacki (2000), the Renaissance marriage market valued maturity in grooms, chaste youth in brides, and family wealth and prominence for both. – Anderson, Journal of Economic Perspectives, 2007*

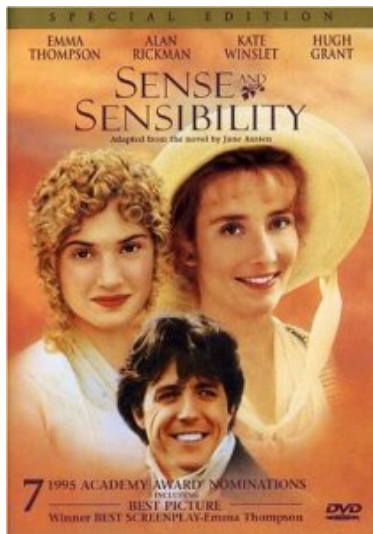
# McCloskey's Evidence



*'How to Be Good', we're going to call it. It's about how we should all live our lives. You know, suggestions. Like taking in the homeless, and giving away your money, and what to do about things like property ownership and, I don't know, the Third World and so on. – Nick Horby, How to Be Good (2001)*

*...in the nineteenth century, 'bourgeois' became the most pejorative term of all, particularly in the mouths of socialists and artists, and later even of fascists. – Johan Huizinga, The Spirit of the Netherlands, 1935*

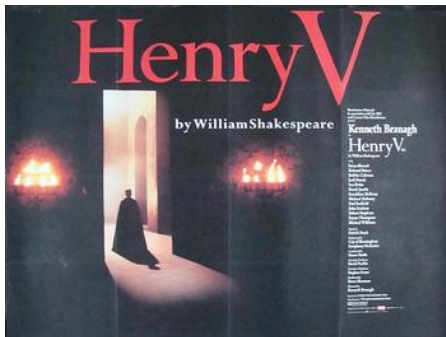
# McCloskey's Evidence



*In 1811 Jane Austen's best characters show both sense and sensibility. They calculate their marriage prospects but take a serious, almost Puritan attitude toward their ethical maturation. Austen's little stage is the gentry. But her ethical world is bourgeois. – McCloskey, The Discrete Virtues of the Bourgeoisie, 2006*

*Contrast the world of Shakespeare. The warm virtues, Love and Courage, Faith and Hope, the virtues praised most often by Shakespeare, and least by Adam Smith, are specifically and essentially non-calculative. – McCloskey, The Discrete Virtues of the Bourgeoisie*

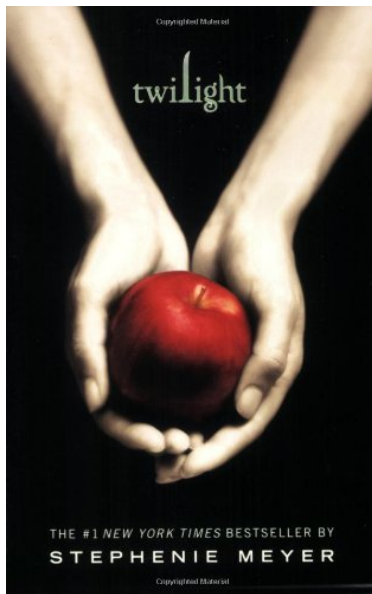
# McCloskey's Evidence



*If we are marked to die, we are enow  
To do our country loss; and if to live,  
The fewer men, the greater share of honour.  
And gentlemen in England now a-bed  
Shall think themselves accursed they were not here,  
And hold their manhoods cheap whiles any speaks  
That fought with us upon St Crispin's Day. –  
Shakespeare, Henry V, 1599*

*This is not bourgeois, Prudential rhetoric. It counts not the cost. – McCloskey, The Discrete Virtues of the Bourgeoisie*

# What We Learn from Literature



# Some More General Points to Consider on Clark

- Data on reproduction rates by income is sparse for everywhere but England
- Are the virtues (patience, hard work, literacy and so on) genetic, a product of parenting, a product of peer groups, lasting traits, etc.?
- Is there a quantifiable way to link these virtues to growth in productivity?
- Why did the virtues initially arise among the wealthy?
- What other mechanisms are there for developing these virtues?