

Policy and Networks: Policy Making in the 21st Century

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Economic and social policy since 1945

- Essentially based on a view that decisions are made 'rationally' by people, firms, planners etc . ['agents']
- Agents respond to incentives, and incentives are in turn mainly based on price
- Not without some success, but limited in what it can actually achieve

Behavioural Economics

- Behavioural economics ('nudge')is essentially a smarter and broader way of thinking about incentives
- Recognises that agents might not always behave 'rationally'
- But it is still based on the idea of 'agents' deciding *in isolation*

Networks

- Not just on-line, 'real world' networks of family, friends, colleagues are even more important
- Networks recognise that agents can be influenced *directly* by what others do
- Network effects mean that decisions can be made which have little or nothing to do with an assessment of the costs and benefits to the individual agent – solely on the basis of what others do
- A wide variety of behavioural motives for this, but for shorthand description, call this 'copying'

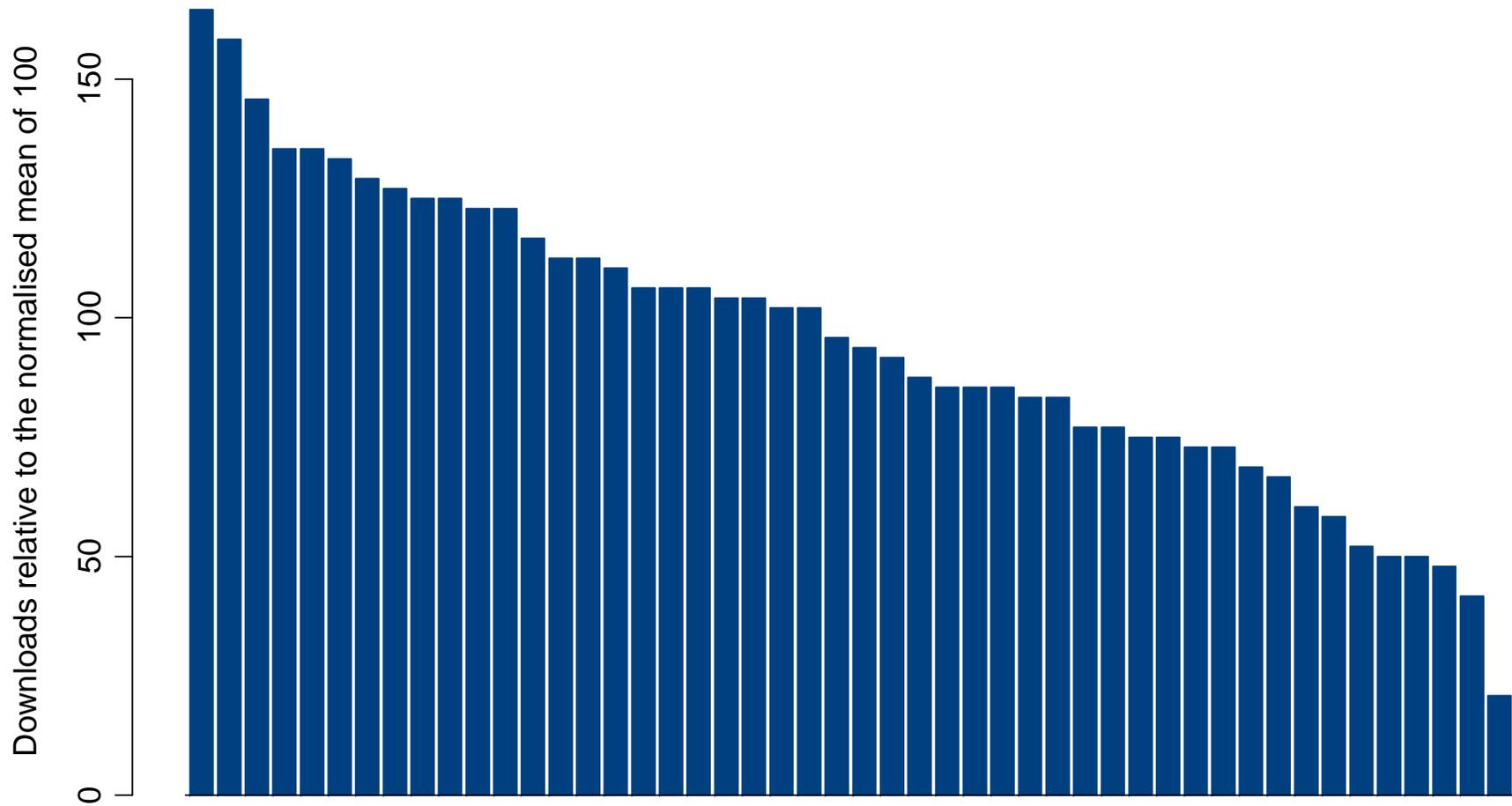
Impact of networks

- A different way of thinking about policy – which companies understand intuitively more than the public sector
- Economic ‘rational’ behaviour may be irrational when network effects are important
- Can dramatically *magnify or offset* the effect of any initial change caused by incentives/nudge
- *Network structure* becomes an additional policy instrument; different types of structure are more/less resistant to ‘cascades’ of value change
- Inherently give rise to right-skewed – unequal - outcomes

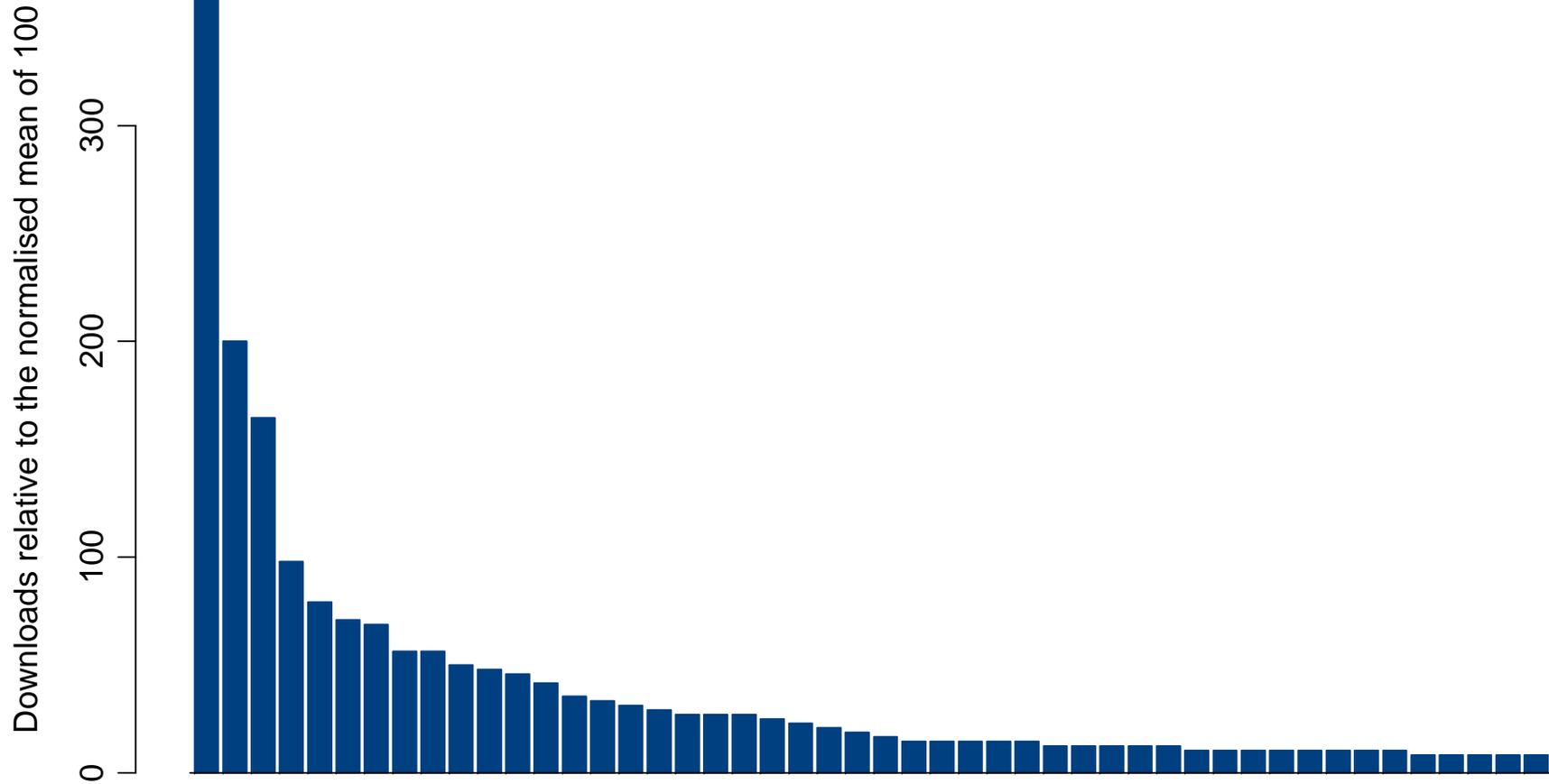
The music download experiment: an example of copying

- Salganik, Dodds, Watts, 'Experimental study of inequality and unpredictability in an artificial cultural market', *Science*, 2006
- Students downloaded previously unknown songs either with or without knowledge of previous participants' choices
- *Increasing the strength of 'social learning' increased both inequality of outcome and unpredictability of success*
- Success was only weakly determined by quality: the best songs rarely did poorly, and the worst rarely did well
- *But any other result was possible i.e. outcomes are only weakly determined by intrinsic quality of the product*
- ***In other words, the best ideas/products may not always win!***

Number of downloads of each of the 48 songs No social influence



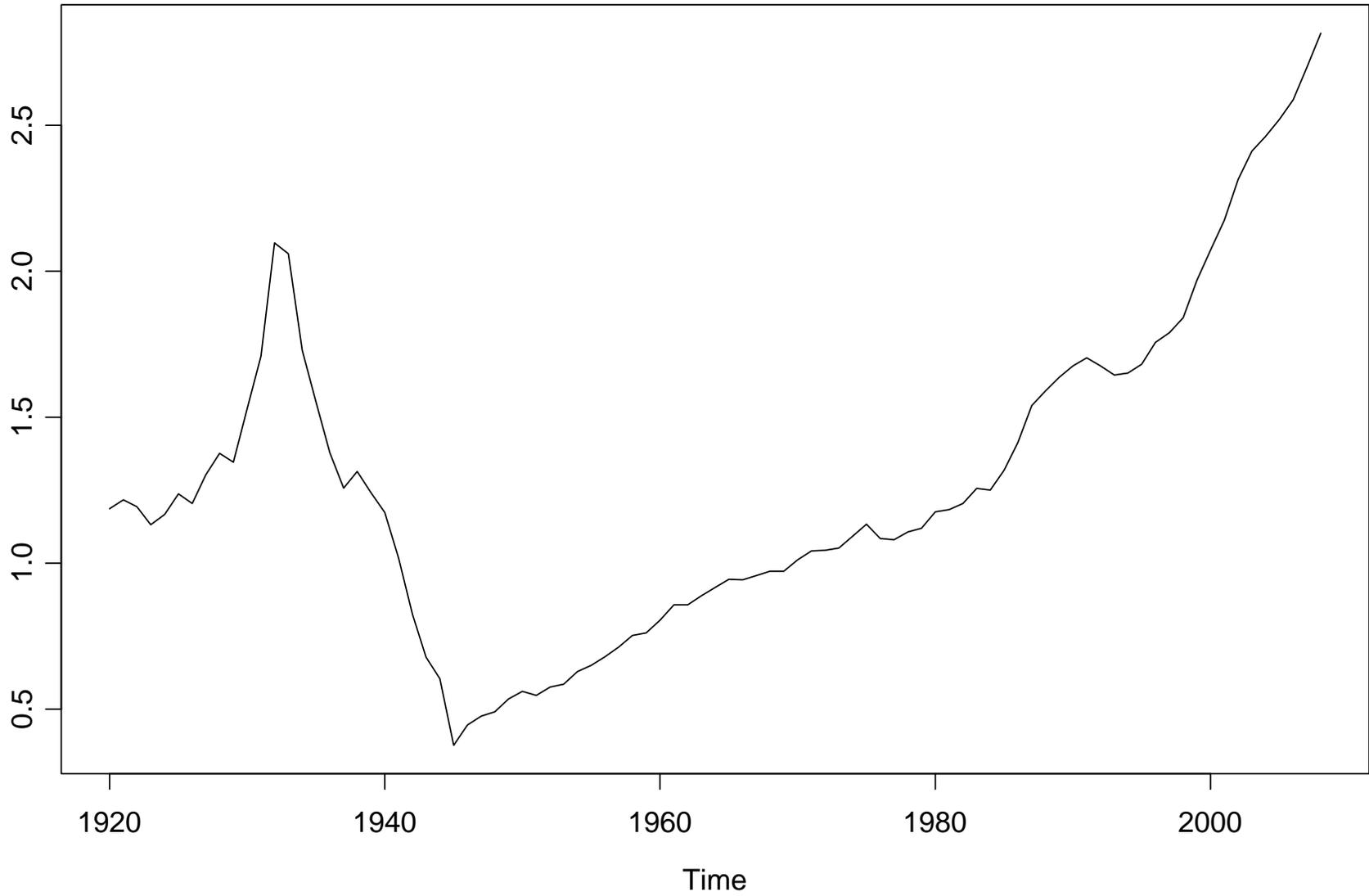
Number of downloads of each of the 48 songs Strong social influence



Copying/Social Learning

- ‘Social learning (learning through observation or interaction with other individuals) is widespread in nature and is central to the remarkable success of humans’; Rendell et.al. ‘Insights from the Social Learning Strategies Tournament’, *Science*, 9 April 2010
- Who/when/where do agents copy? What is the relevant network structure? Do they also innovate?
- How do agents learn their own preferences, their own self-image?
- This is not just individuals, but firms, regulators, governments, international bodies e.g. IMF, European Central Bank

Total private debt in America compared to the size of the economy



Examples where network effects are important

- Financial crisis since 2007 e.g. Confidence in inter-bank lending; systemic risk of default (Lehman Bros)
- Popular culture (e.g. YouTube downloads, film producer earnings)
- Public health (e.g. network of sexual partners; 'peer acceptance' of obesity)
- Unemployment rates by county in America – culture, contacts, image

Religion in England in the 1550s (1)

- A period of great religious (think ideology/fundamentalism in 21st century terms) ferment in Europe
- Henry VIII broke with the Pope in the early 1530s
- By the time his weak young son, Edward VI, succeeded him in 1547, a group of hard line Protestants had captured control of the Church of England
- There was another, less militant, Protestant faction, the Freewillers
- But the vast majority of the country still adhered to Catholicism
- On Edward's death in 1553, to the astonishment of the elite, his sister Mary, a devout Catholic, easily raised a large force and captured and executed the successor favoured by the elite (Lady Jane Grey, the 'nine day Queen')

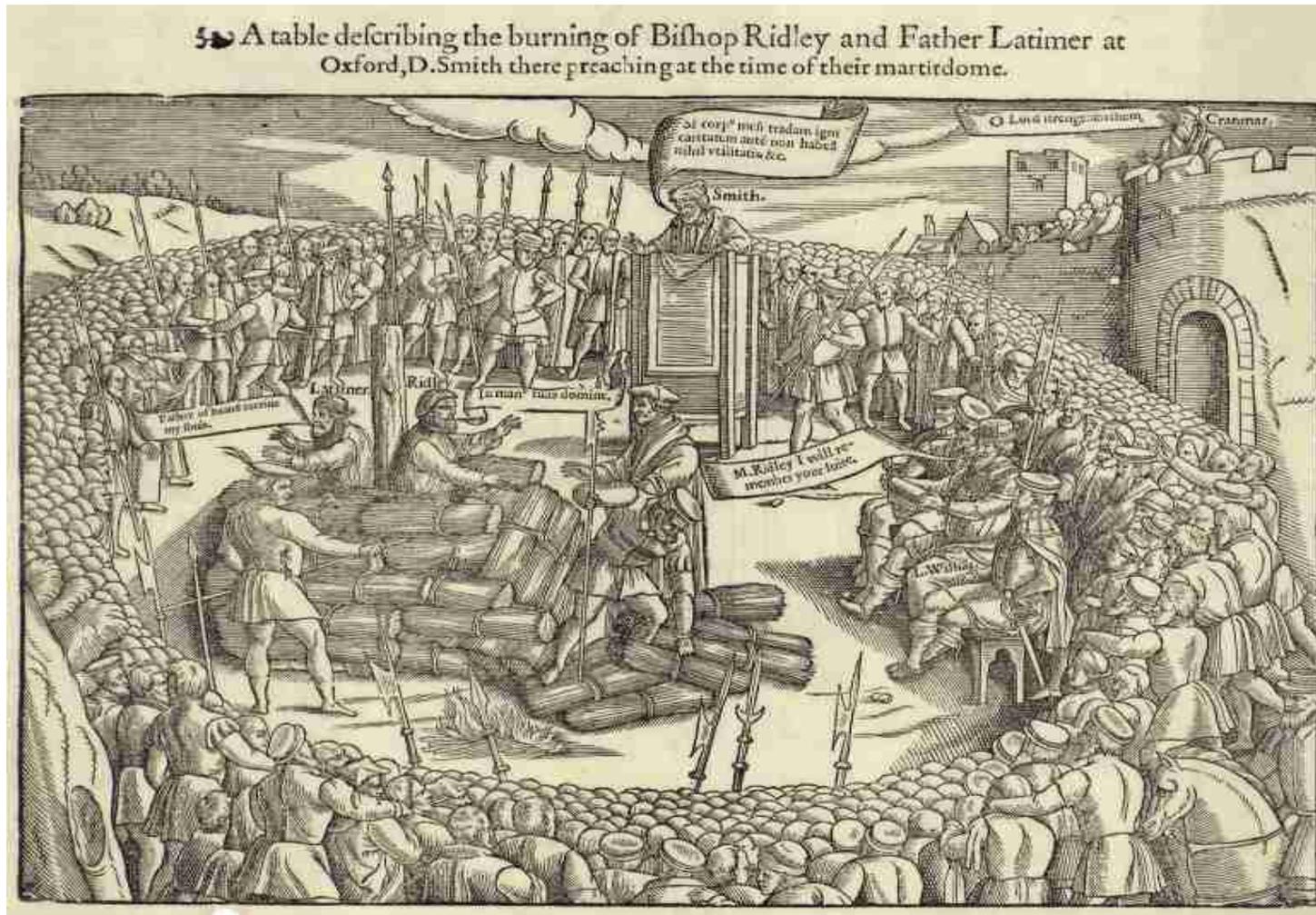
Religion in England in the 1550s (2)

- Mary was determined to restore Catholicism and used a policy of incentives to achieve this – 300 burnings of Protestants were carried out 1555-58
- On the face of it, this was quite sensible. A proto-Protestant group with widespread support, the Lollards, had been suppressed in the early 15th century by a small number of burnings
- Many Protestants recanted or fled abroad
- But a hard core, including many of the leaders, used network approaches to win support

Religion in England in the 1550s (3)

- **They reinforced personal networks** by writing to each other in prison to sustain their faith and willingness to be martyred e.g. Laurence Saunders on the morning of his execution: *'God's people shall prevayle: yea our blood shall be their perdition, Who do most triumphantly spill it'*
- They gambled that by behaving with courage at their burnings, they would persuade the population to follow their beliefs – **spreading their views across the network of the population as a whole, they created a scale-free network**
- *'Be of good comfort, master Ridley, and play the man. We shall this day light such a candle, by God's grace in England, as I trust shall never be put out.'*
Hugh Latimer before being led to the stake with Ridley in Oxford, 1555
- Large numbers turned up to watch e.g. at the burning of the Bishop of Worcester, 7,000 came to watch *'for it was market-day and many also came to see his behaviour towards death.'* (Foxe, 1563)
- These policies were very successful. By Mary's death in 1558, Freewillers had disappeared, and support for Protestantism was much stronger

The burning of Latimer and Ridley, Oxford city centre, 1555



Conclusion

- Incentives still matter
- But policy in the 21st century must look at problems from the network perspective, these are often much more powerful
- Hard to get right
- But this is how the world actually is
- Provides new instruments of policy – understanding network structure, altering network structure