

Strictly Private & Confidential



Applied Behavioural Finance: Insights into irrational minds and market

James Montier: Global Equity Strategy

“The brain is my second favourite organ”

Woody Allen

“The market can stay irrational, longer than you can stay solvent”

JMK

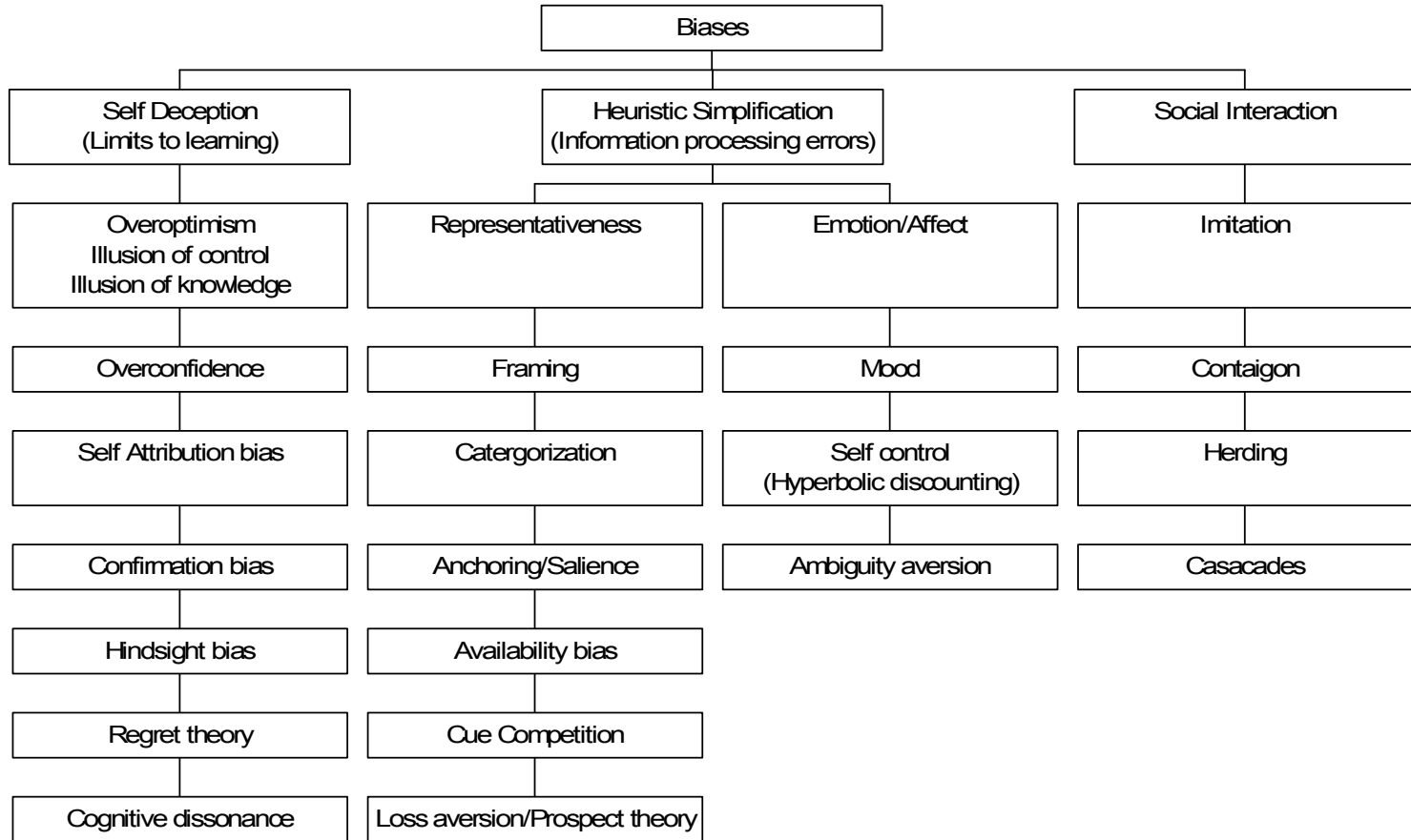
“There is nothing so dangerous as the pursuit of a rational investment policy in an irrational world”

JMK

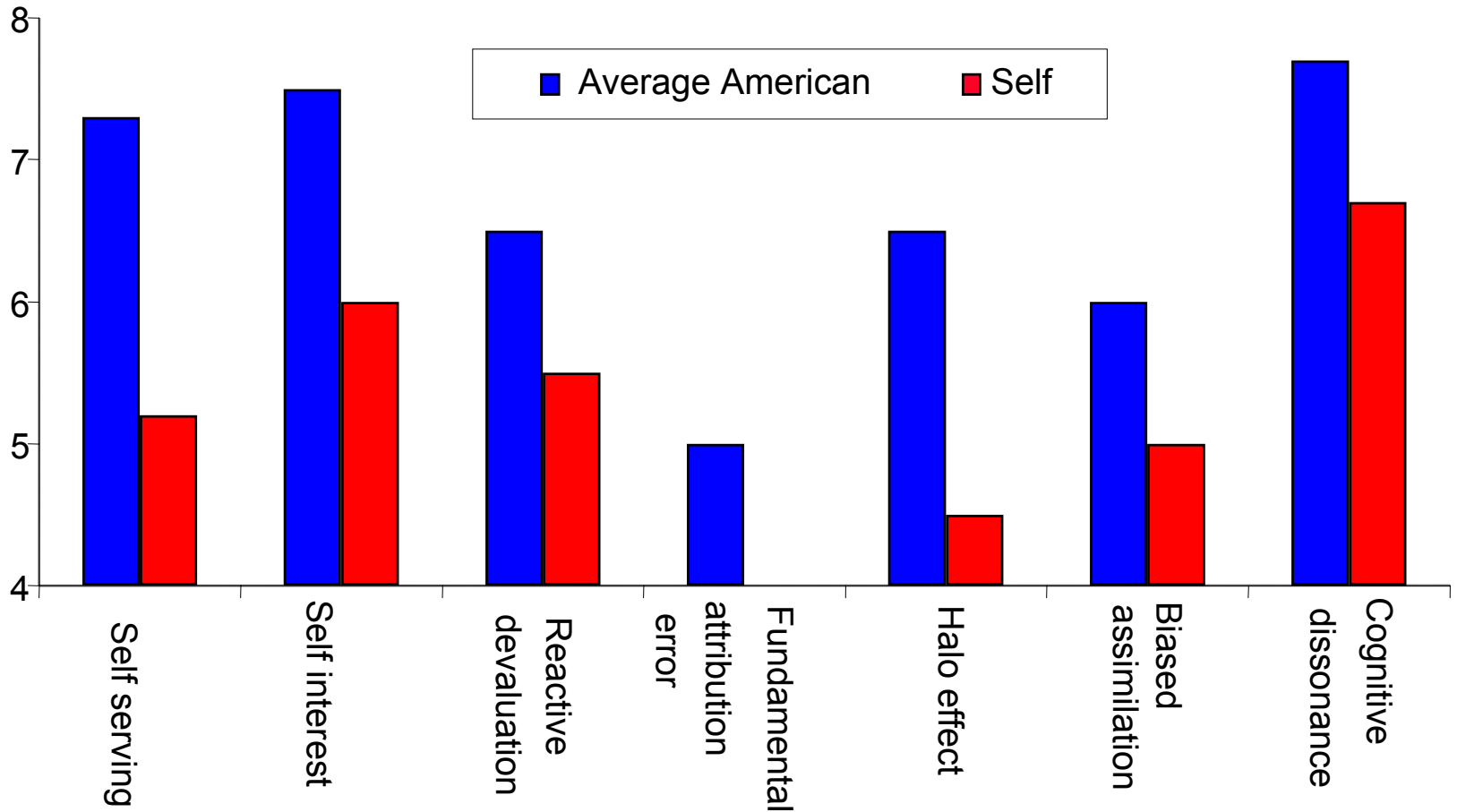
“Economists are people who look at reality, and wonder whether it would work in theory”

Ronald Reagan

Taxonomy of biases



The bias blind spot: Everyone else, not me



Dual processing theories of thought

System One/ X- system Intuitive	System Two C- System Reflective
Process Characteristics	
Automatic	Controlled
Effortless	Effortful
Associative	Deductive
Rapid, parallel	Slow, serial
Process opaque	Self aware
Skilled action	Rule application
Content on which processes act	
Affective	Neutral
Causal propensities	Statistics
Concrete, specific	Abstract
Prototypes	Sets

Neuropsychology of dual processing (Lieberman)

▶ X-system

- ▶ Amygdala
- ▶ Basal ganglia
- ▶ Lateral temporal cortex

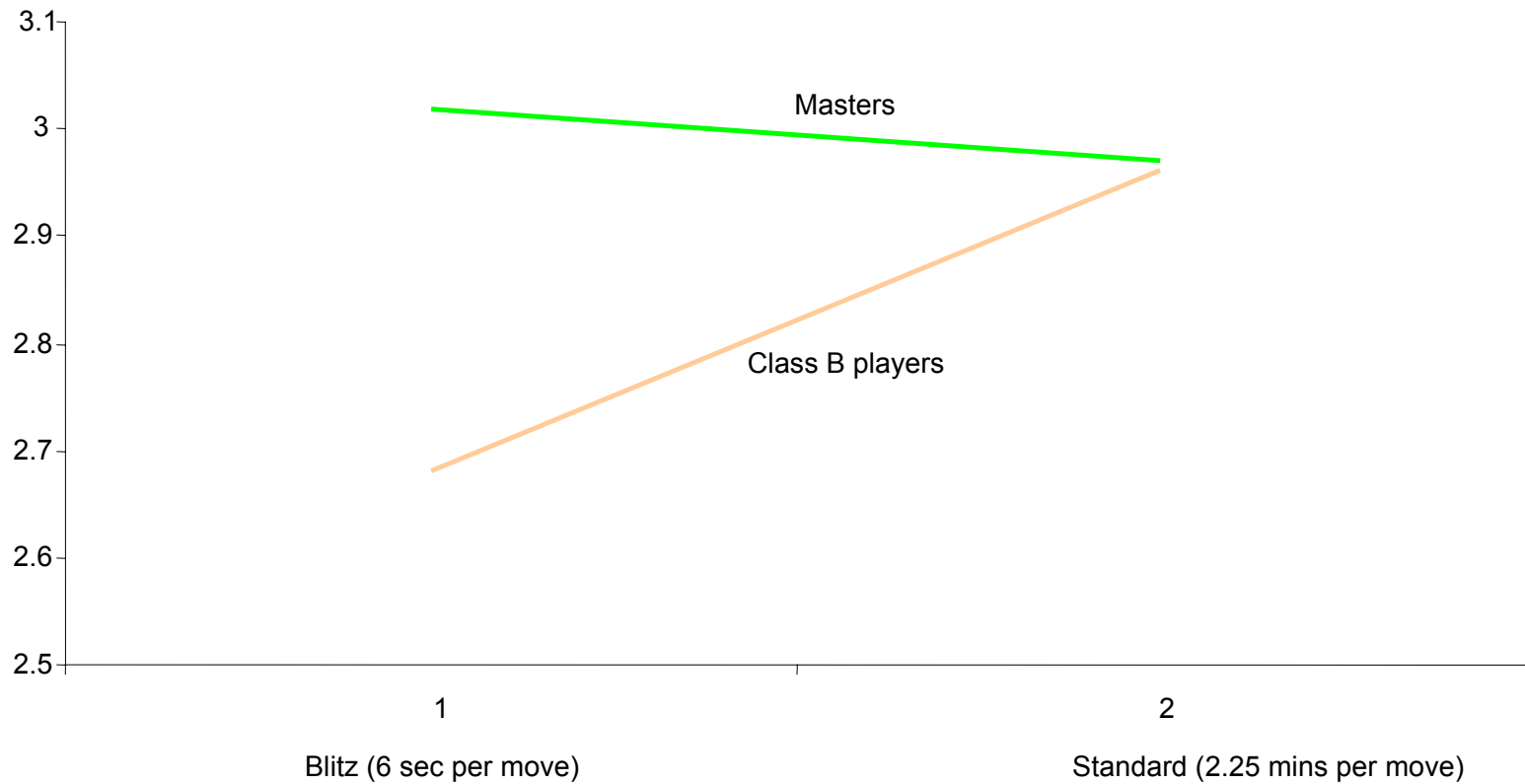
▶ C-system

- ▶ Anterior cingulate cortex
- ▶ Prefrontal cortex
- ▶ Medial temporal lobe

Klein's factors for NDM (X-system)

- ▶ System X is more likely when:
- ▶ The problem is ill-structured & complex
- ▶ Information is incomplete, ambiguous and changing
- ▶ Goals are ill defined, shifting and competing
- ▶ Stress is high (time constraints and/or high stakes)
- ▶ Decisions involve multiple participants

X-system can dominate



Affect

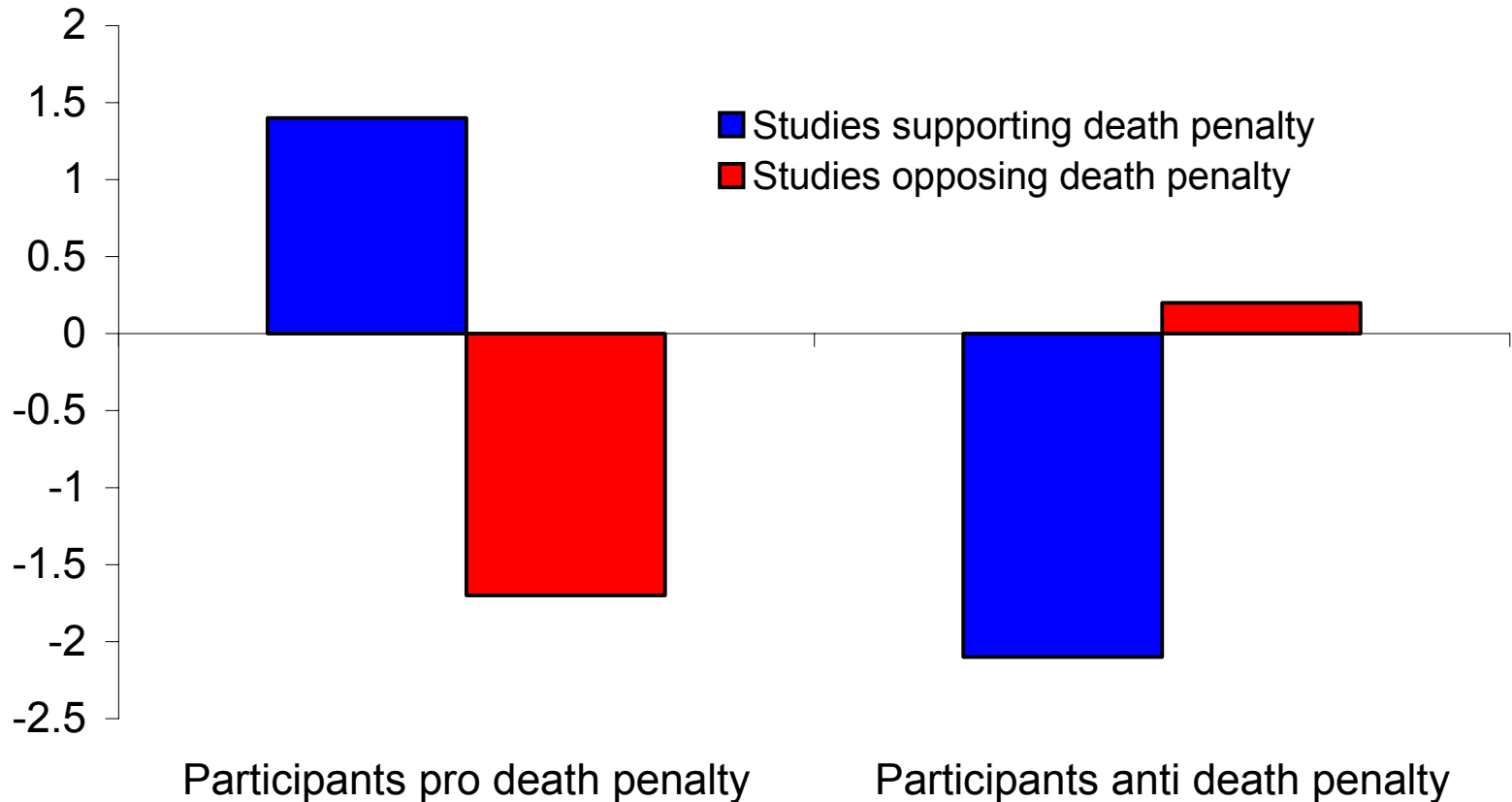
The rational model

- ▶ Perceptions -> attitudes
- ▶ I like this person because I think she is smart and honest
- ▶ I like this company because it is low risk and high return

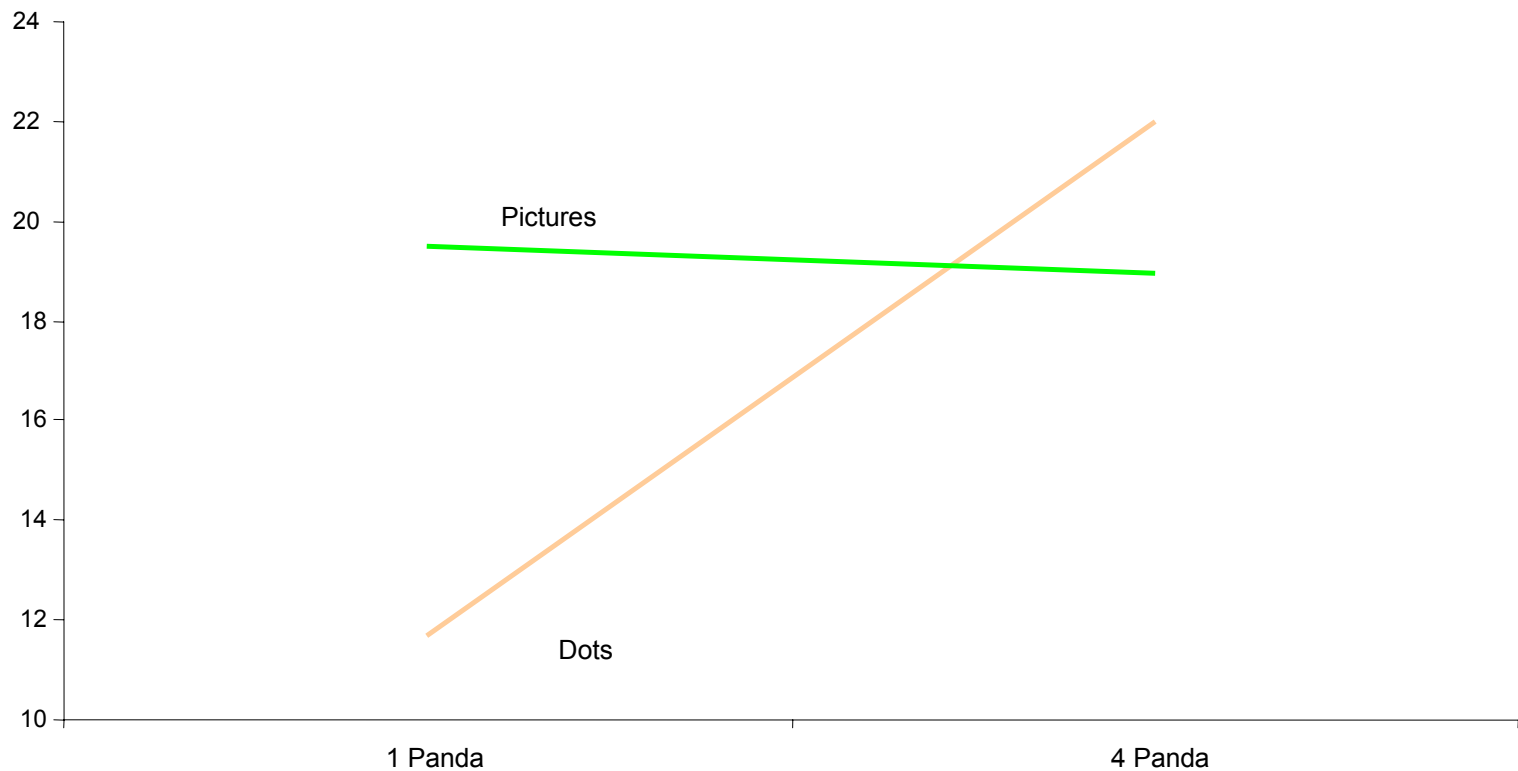
The affect model

- ▶ Attitude -> perceptions
- ▶ Because I like this person, I think she is smart and honest
- ▶ Because I like this company, it is low risk and high return

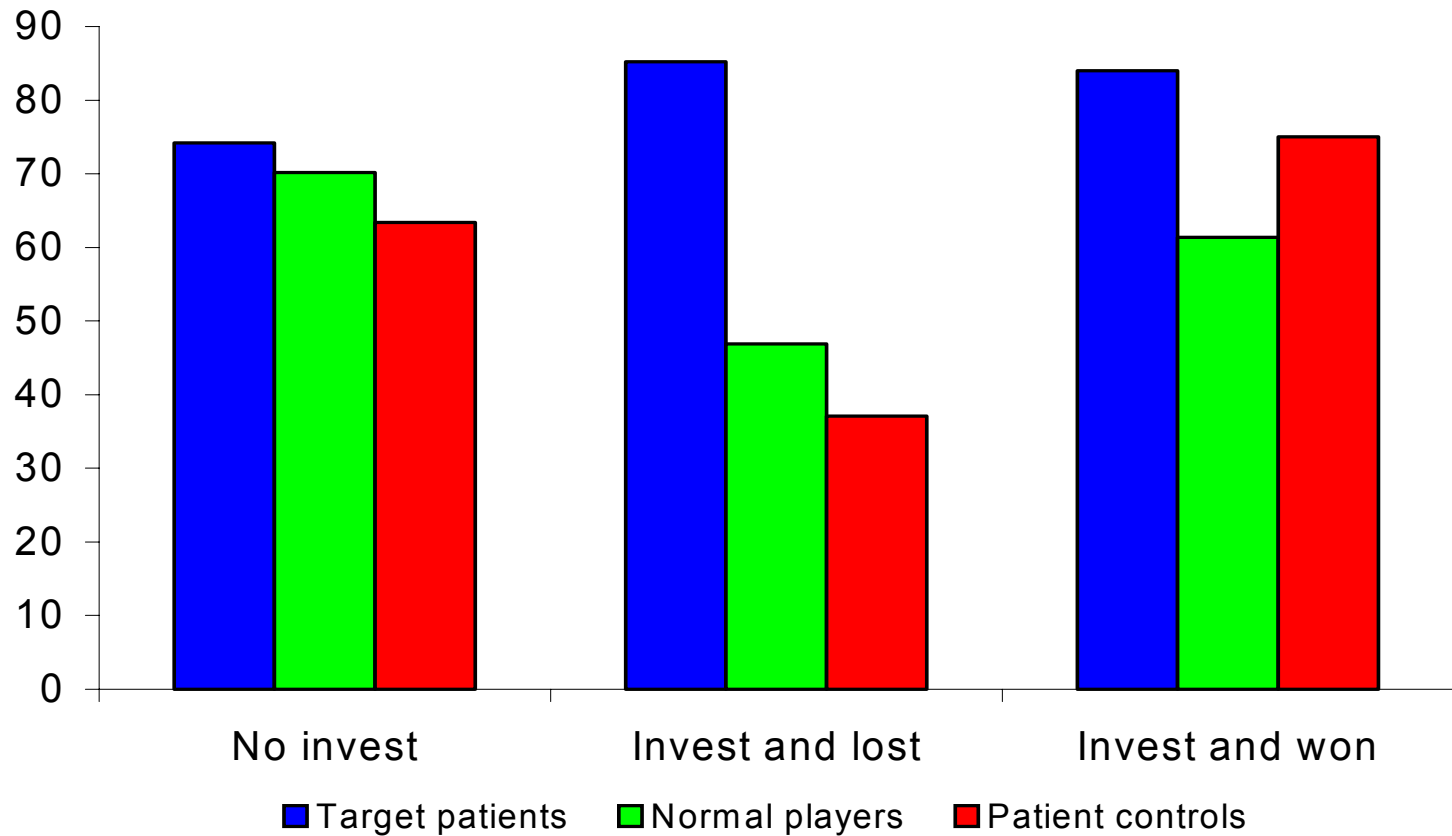
Biased assimilation: When attitudes drive perceptions



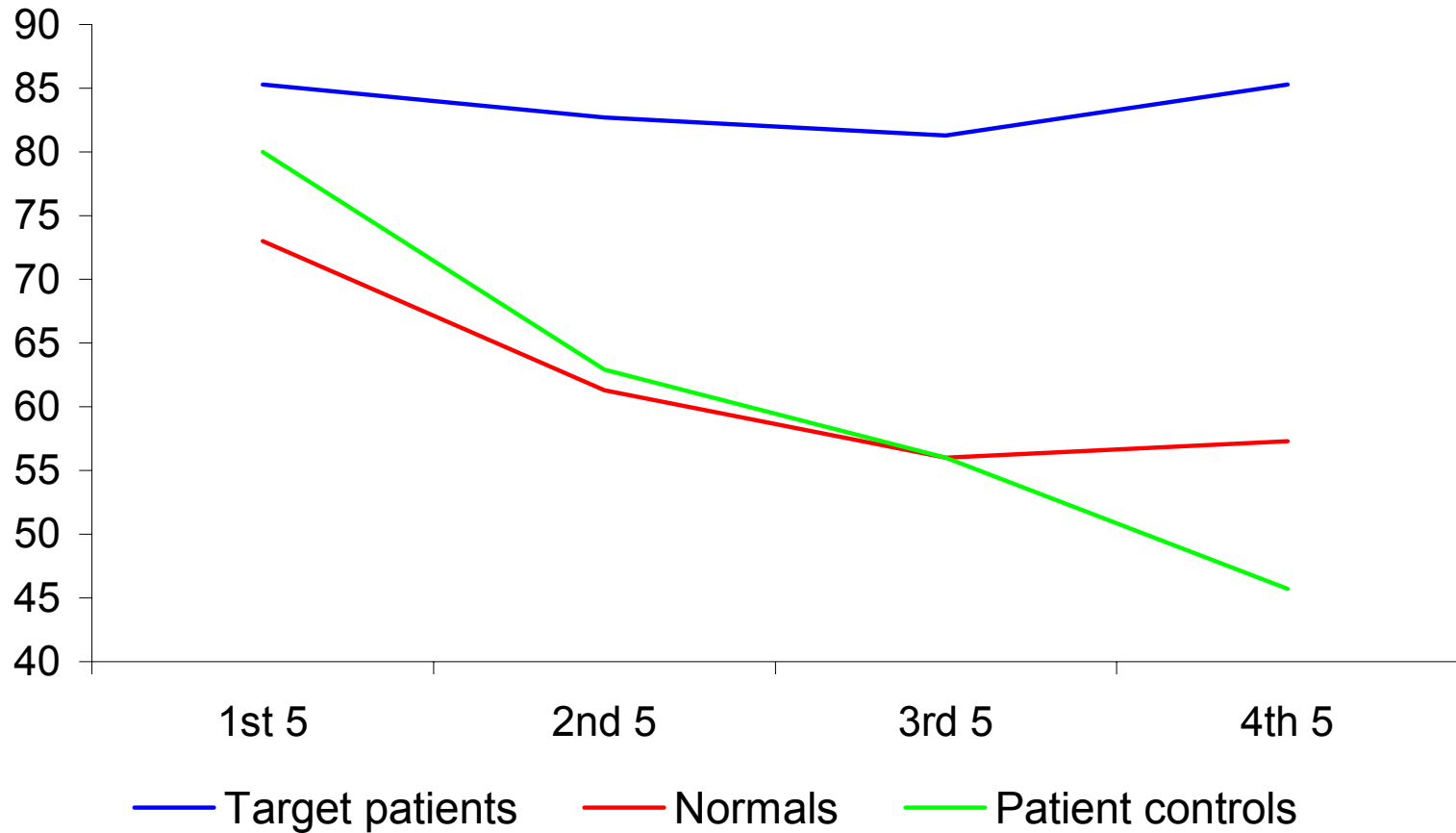
Panda and affect



The dark side of emotion



No sign of learning



| Self deception or perception is reality

Self deception

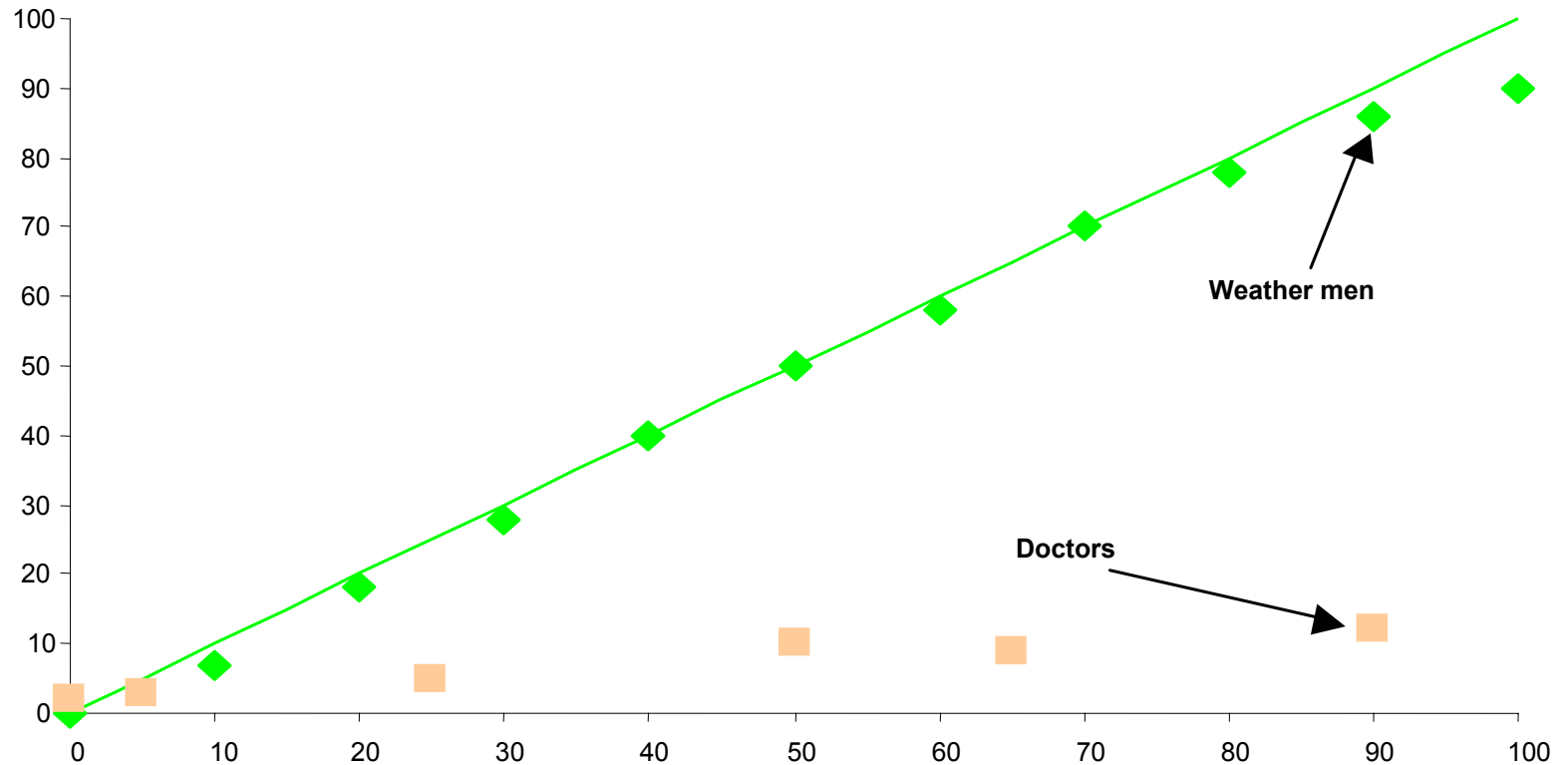
Over-optimism

- ▶ People tend to exaggerate their own abilities
- ▶ Illusion of control
- ▶ Illusion of knowledge

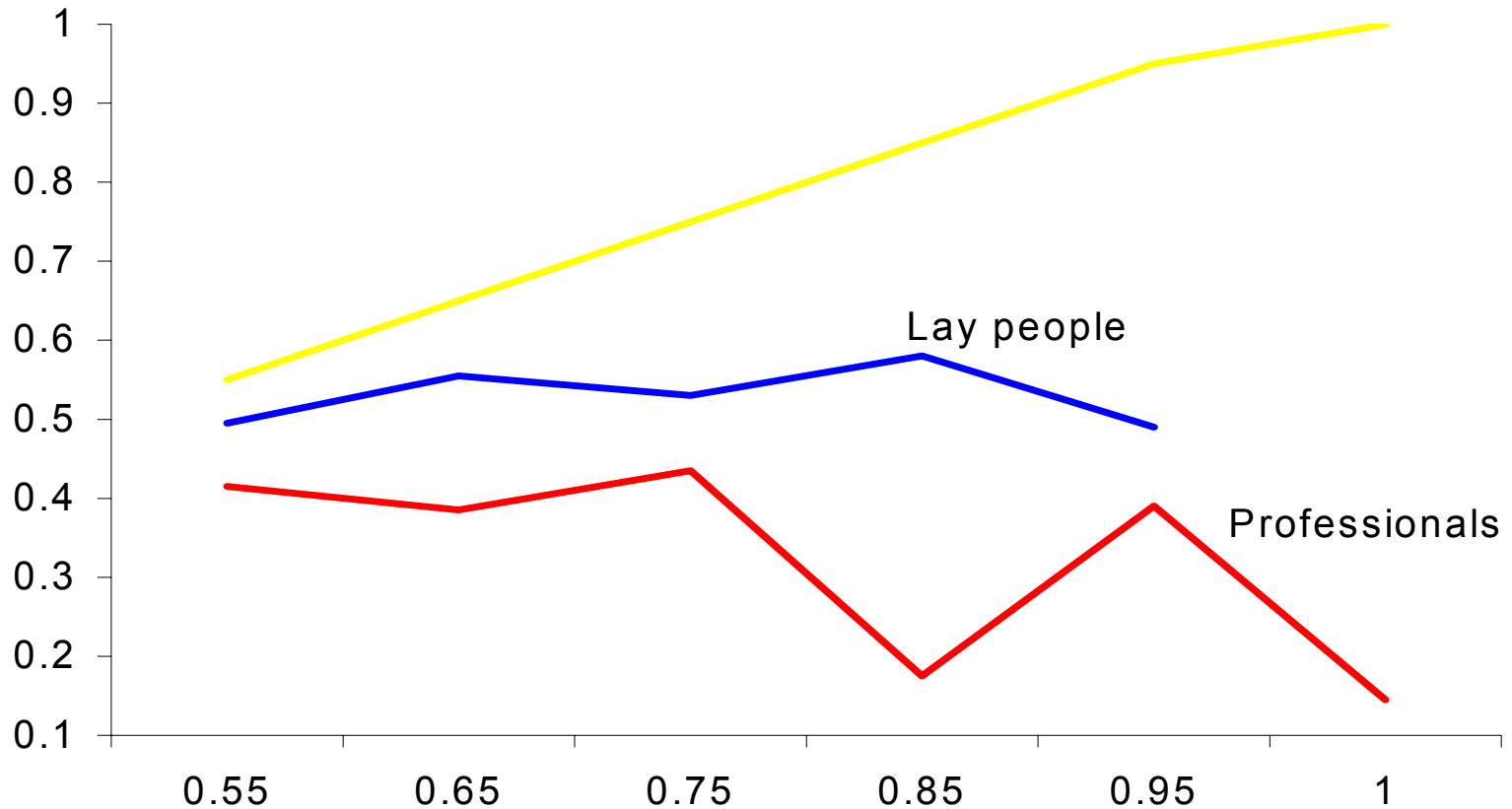
Over-confidence

- ▶ People are surprised more often than they expect. Not well calibrated.
- ▶ Confidence intervals around a forecast which should yield 2% error, actually get a 30-40% error

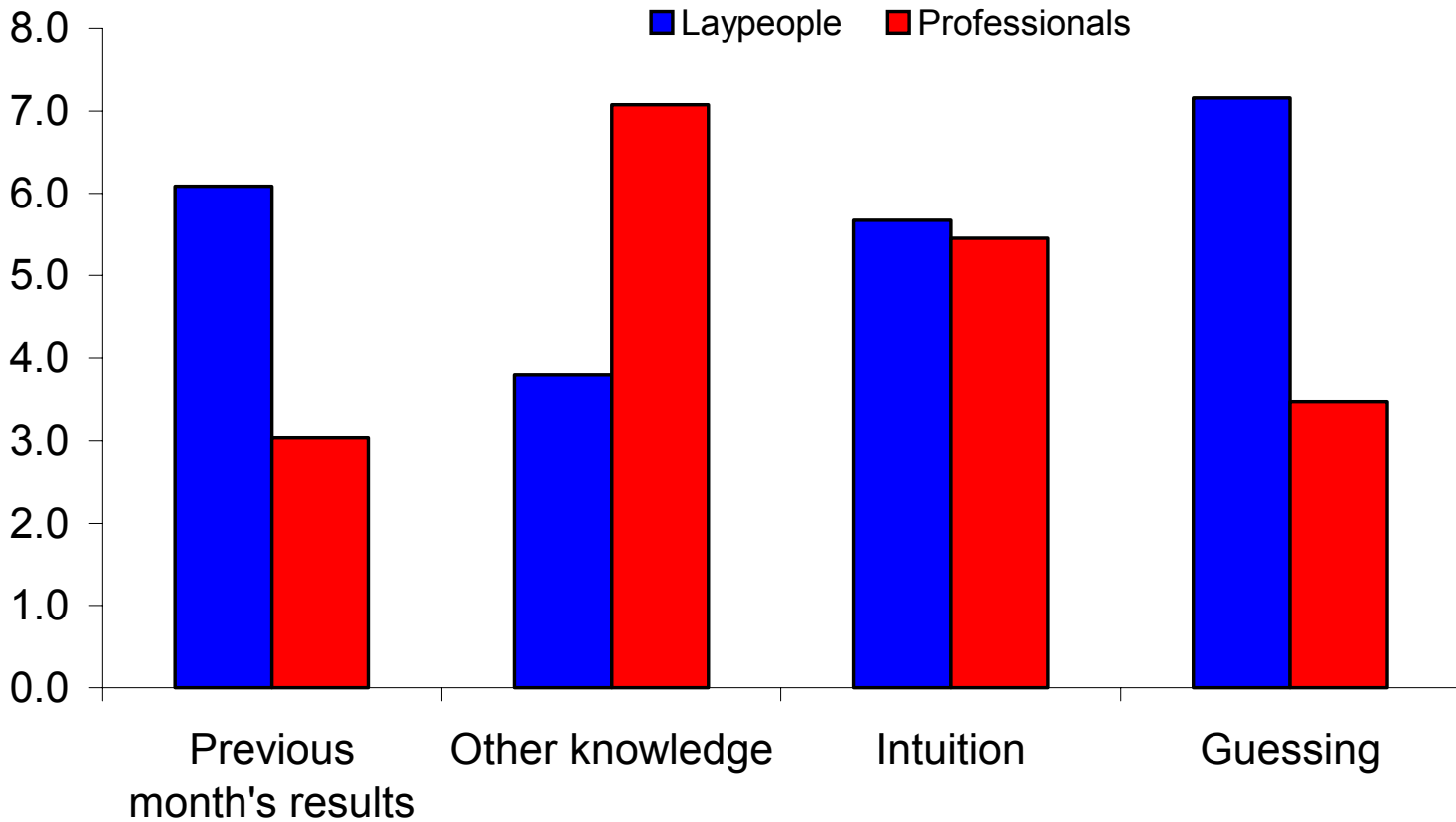
Overconfidence



Overconfidence and investment

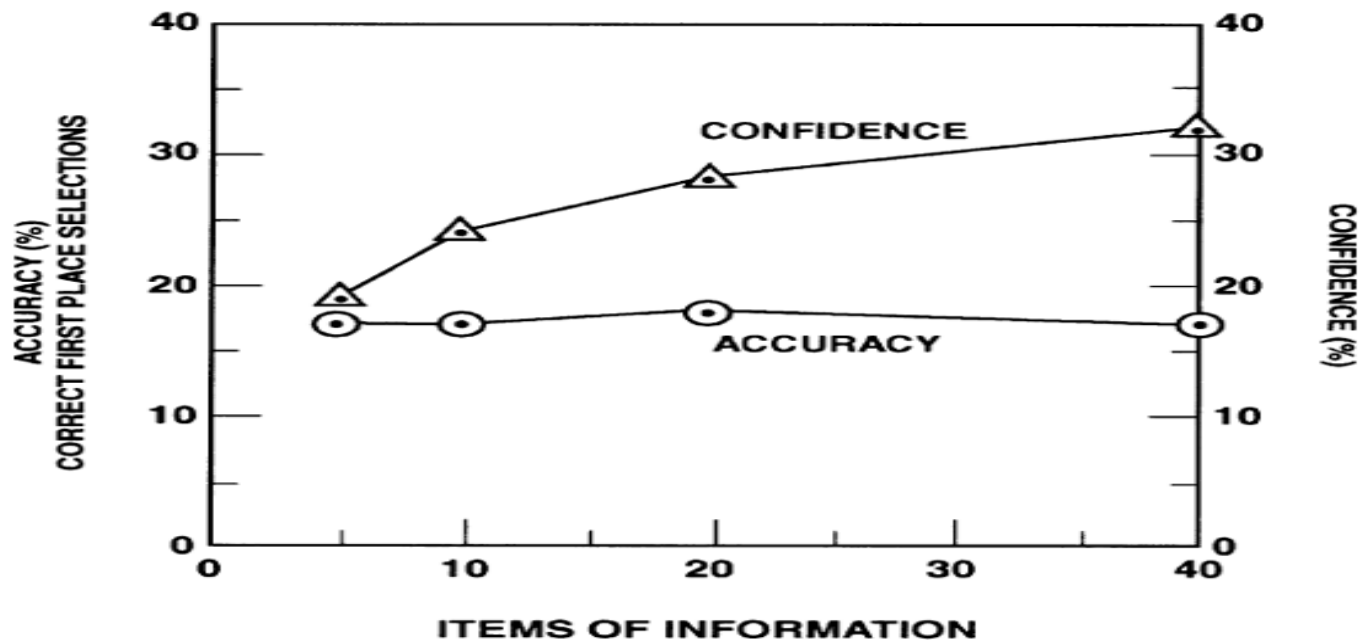


Overconfidence driven by the illusion of knowledge

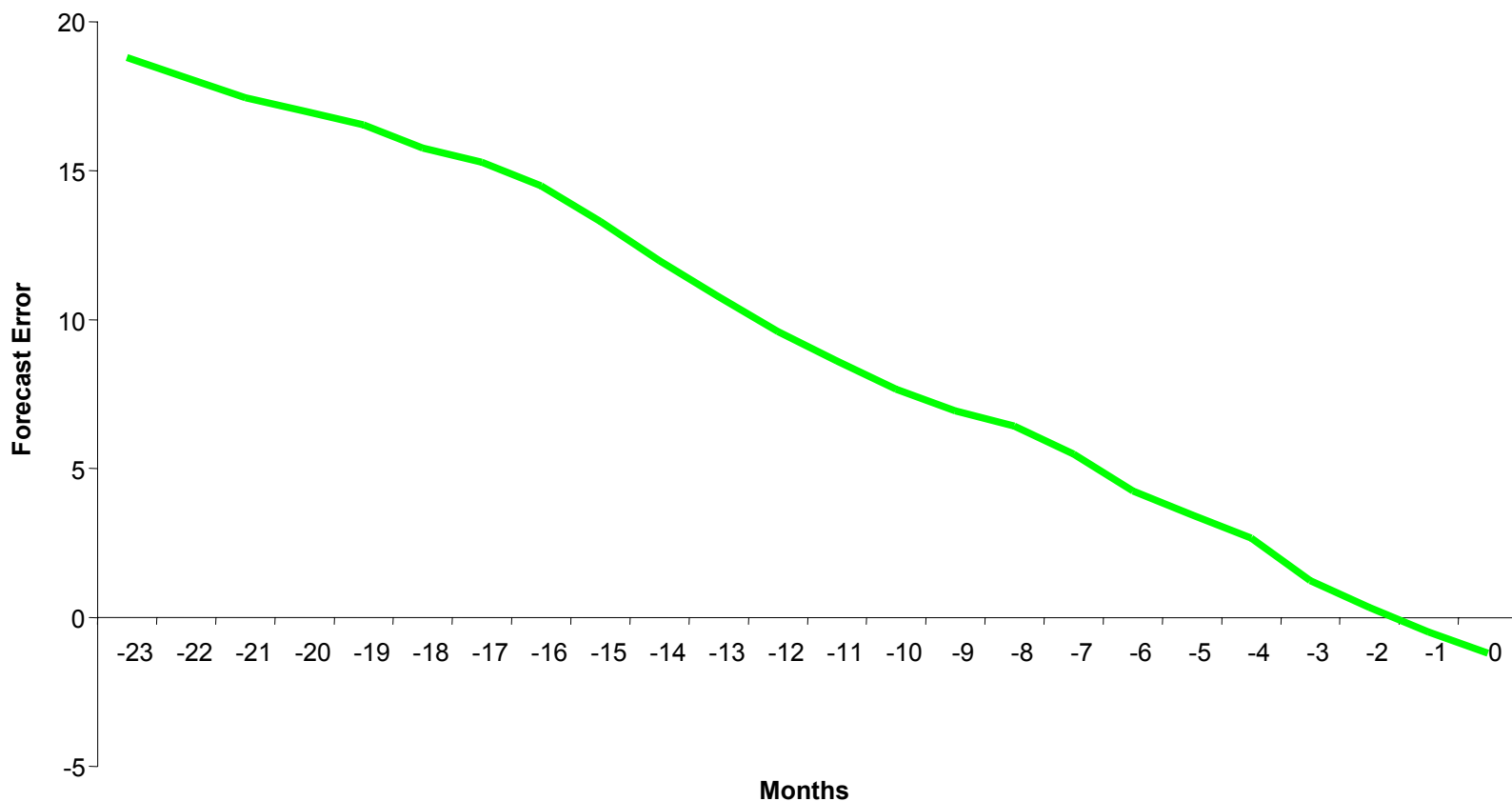


Does more information improve your accuracy?

Figure 5

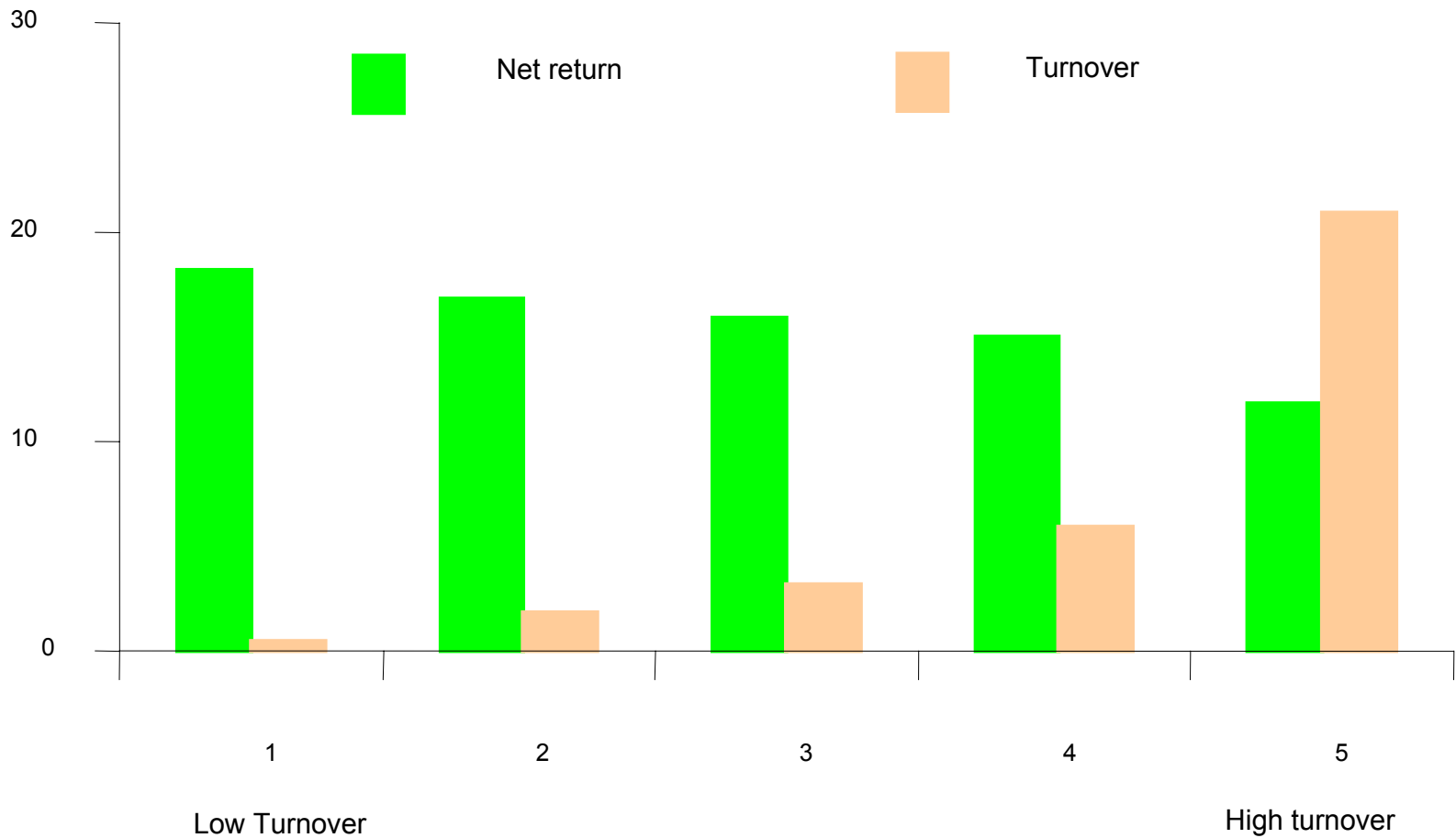


The walk down to beatable earnings:
average scale of forecast error at the earnings level – US (% , 1986-2000)

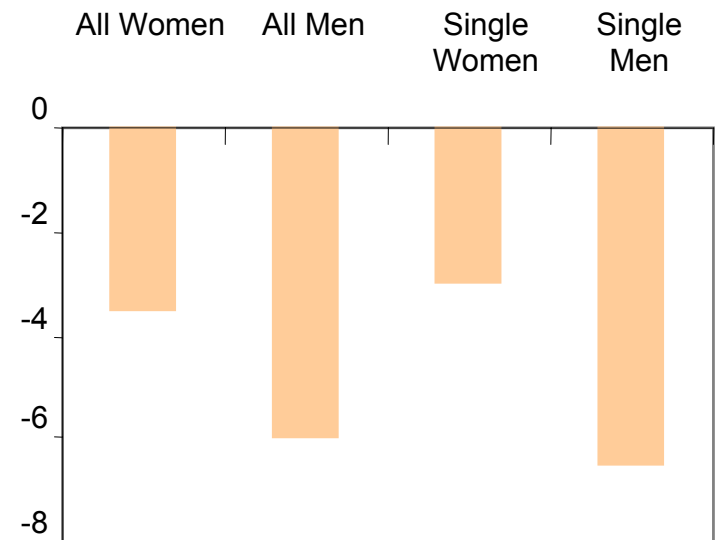
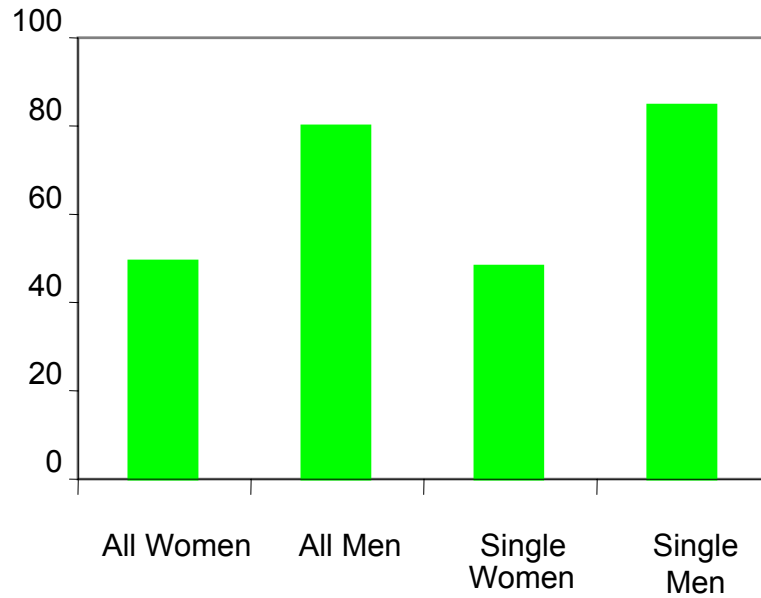


Source: DrKW Macro research and IBES

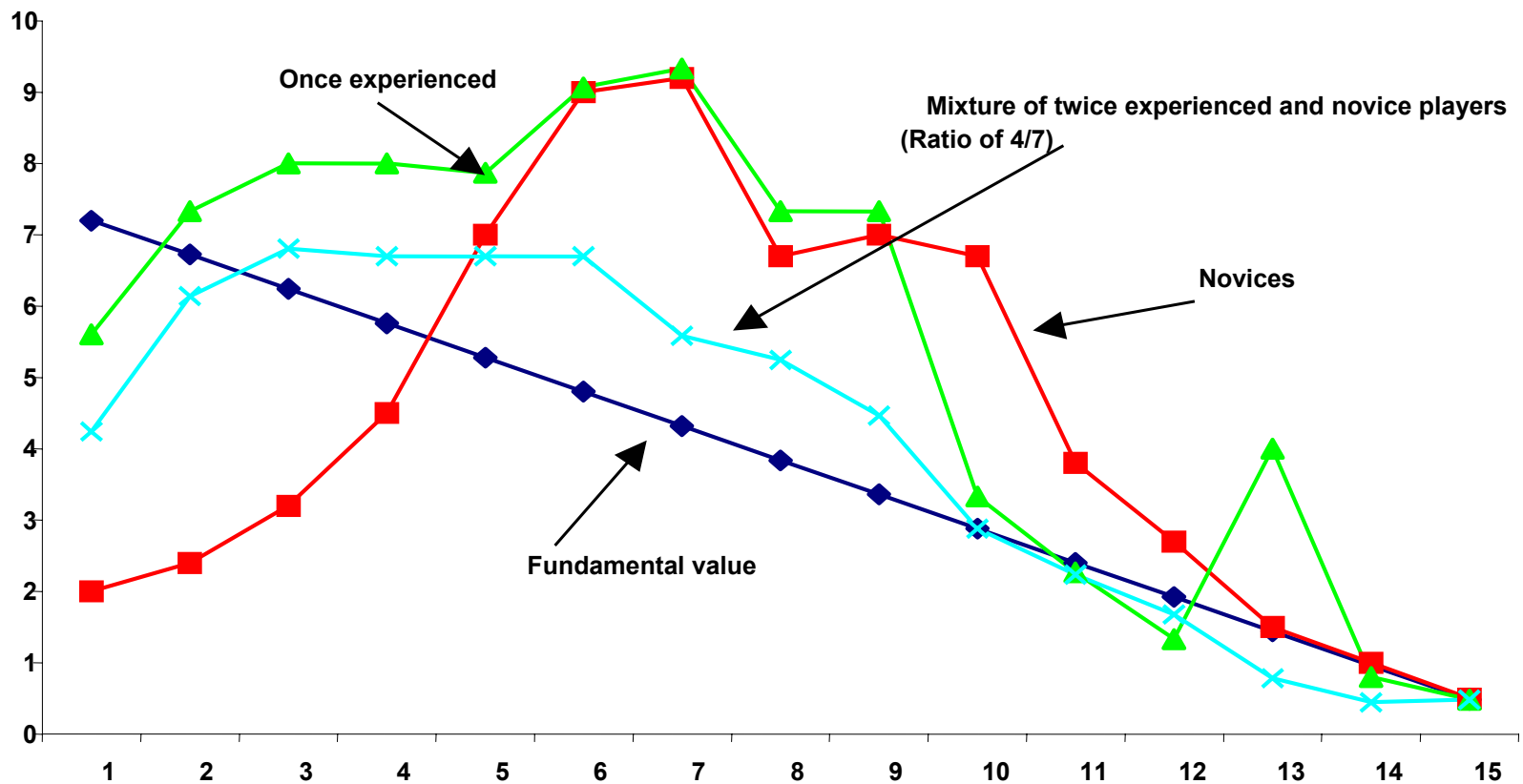
Trading is hazardous to your wealth



Should traders be women?

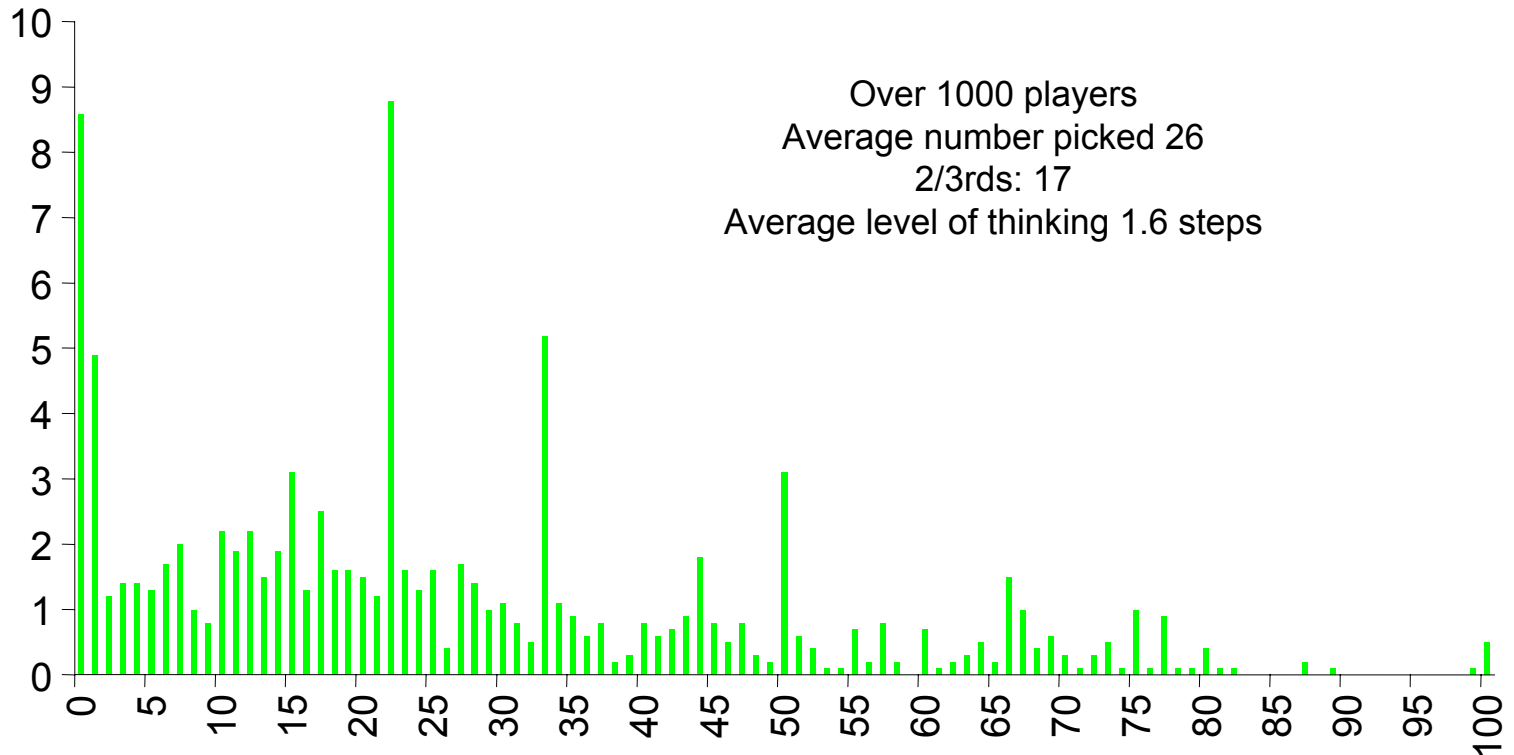


Bubble echoes in the laboratory

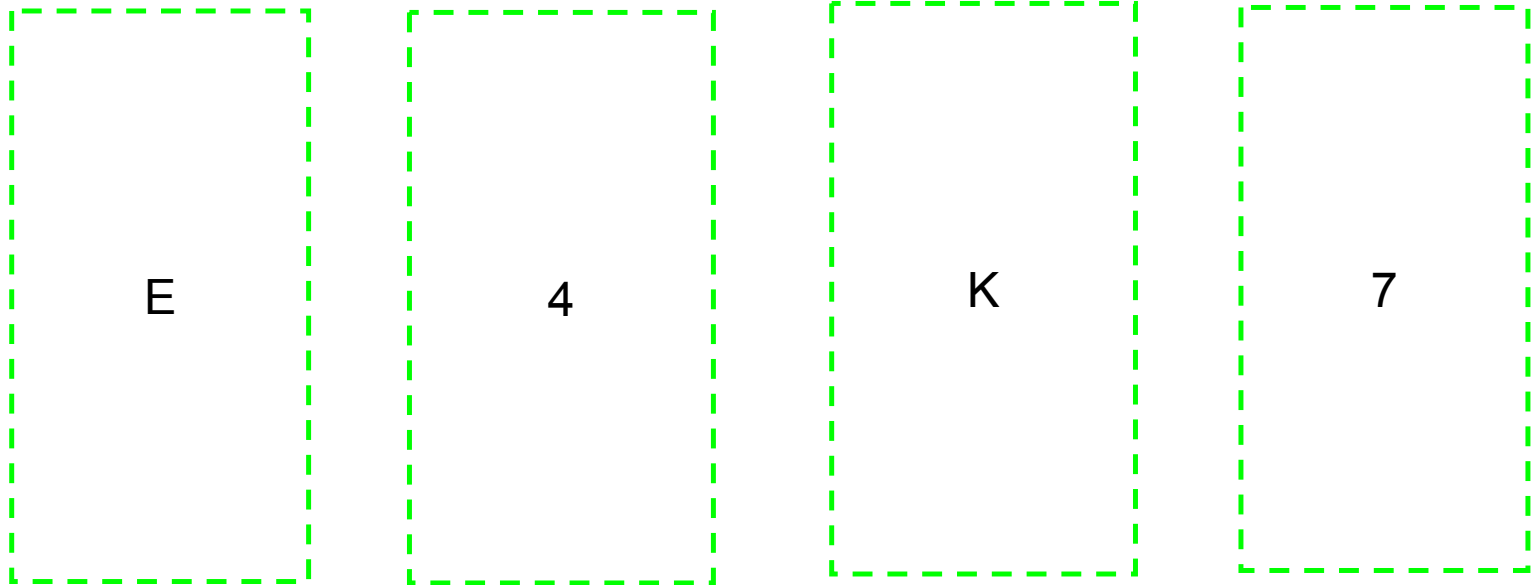


Source: Ackert and Church

Keynes's beauty contest and investment professionals



Self deception



Self attribution bias

- ▶ Good outcomes are a testament to your skill, bad outcomes are sheer bad luck.
- ▶ How often do you say that's just a blip?

Hindsight bias

- ▶ It is a common observation that events in the past appear simple, comprehensible, and predictable in comparison to events in the future. Everyone has had the experience of believing that they knew all along the outcome of a football game, a political election or a business investment. The hindsight bias is the tendency for people with outcome knowledge to believe falsely that they would have predicted the reported outcome of an event. After learning of the occurrence of an event, people tend to exaggerate the extent to which they had foreseen the likelihood of its occurrence.

Psychological Foundations

II. Heuristic Simplification

Or

There is no such thing as context free decision making



Heuristic Simplification

- ▶ Conservatism Bias

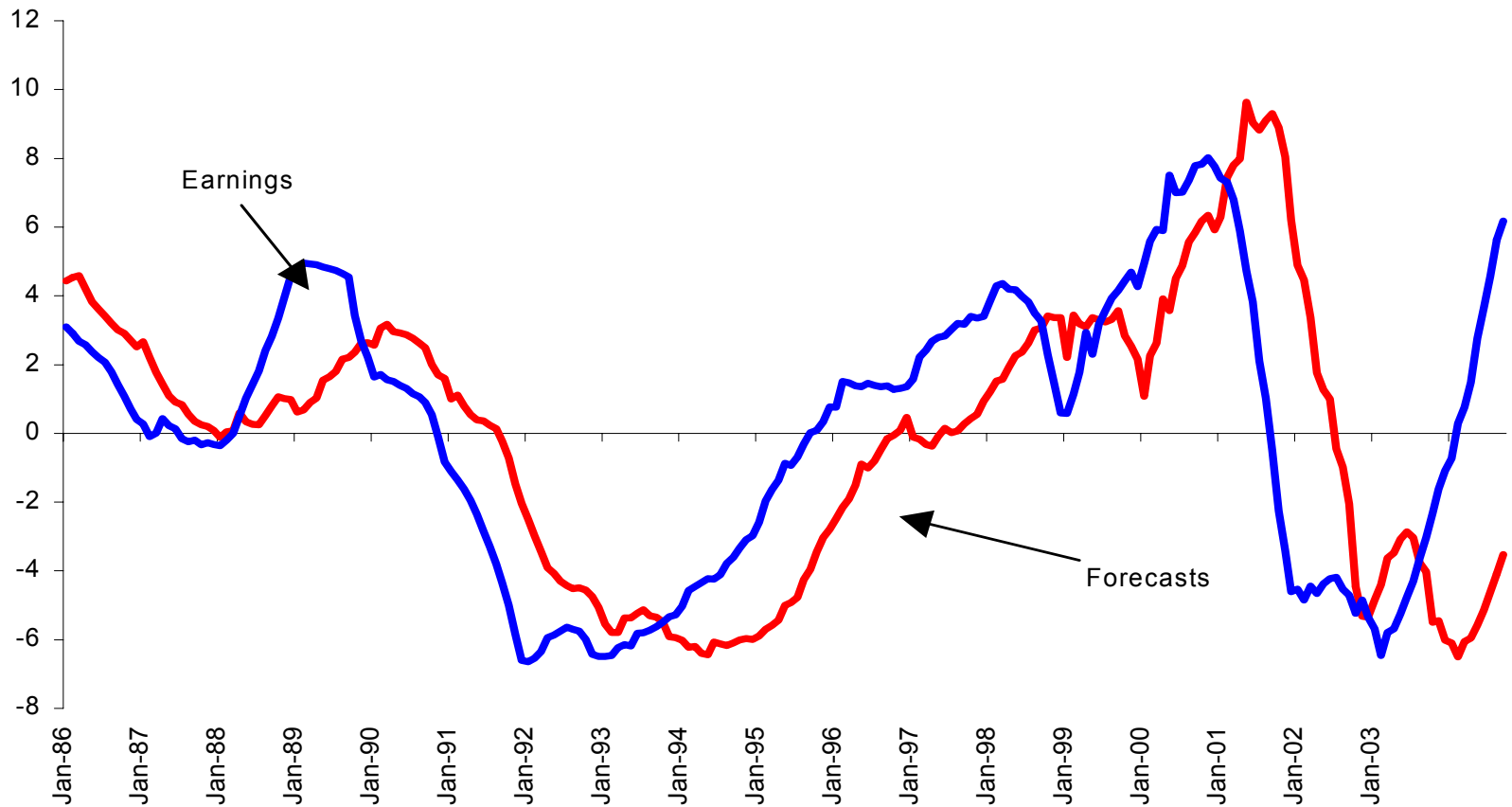
- ▶ Hard to give up a view once it has formed. Leads to:

- ▶ Anchoring and slow adjustment

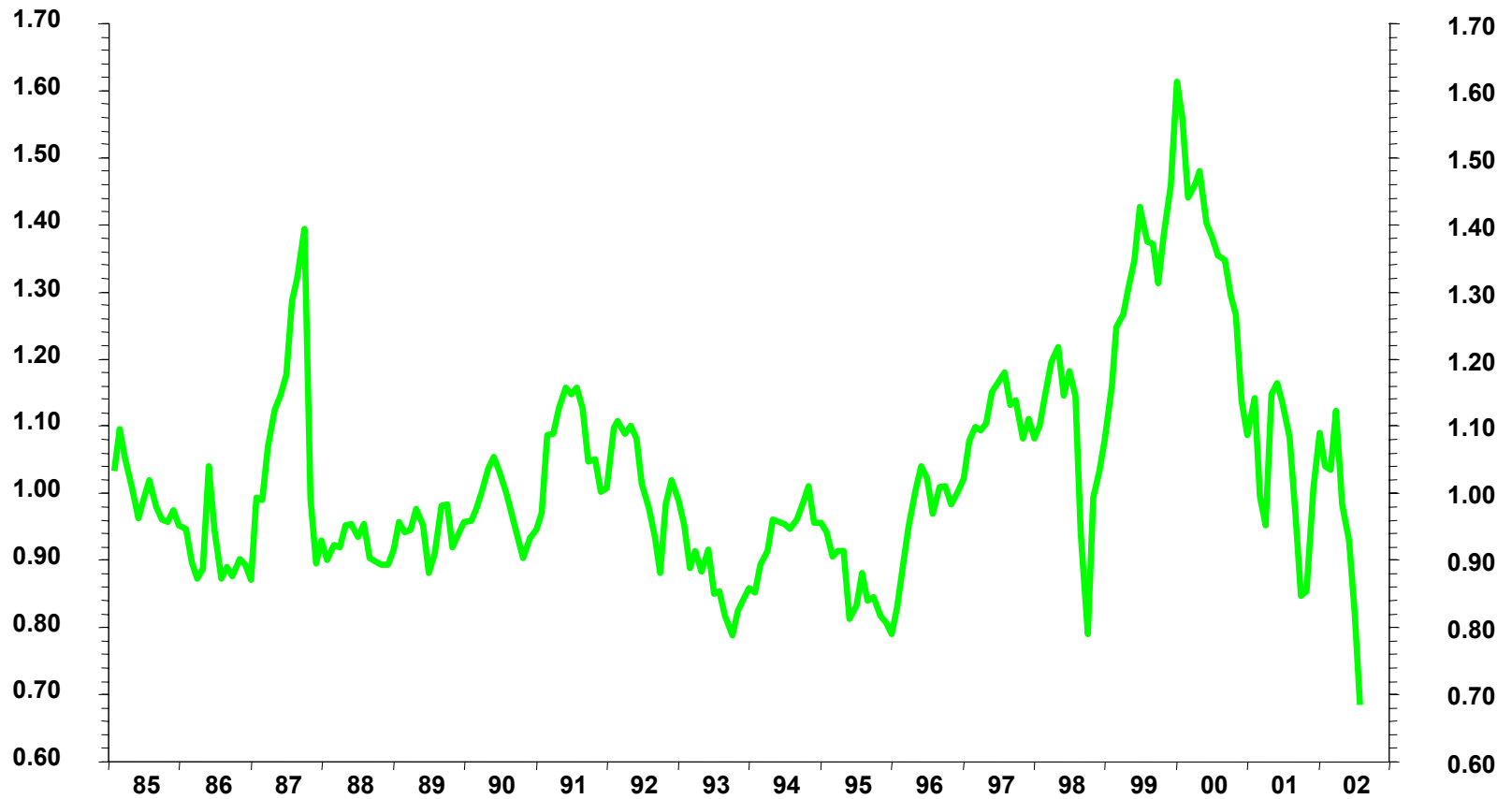
- ▶ Depends upon saliency of the anchor

- ▶ i.e. analysts will change their views from their forecasts slowly

Analysts lag reality

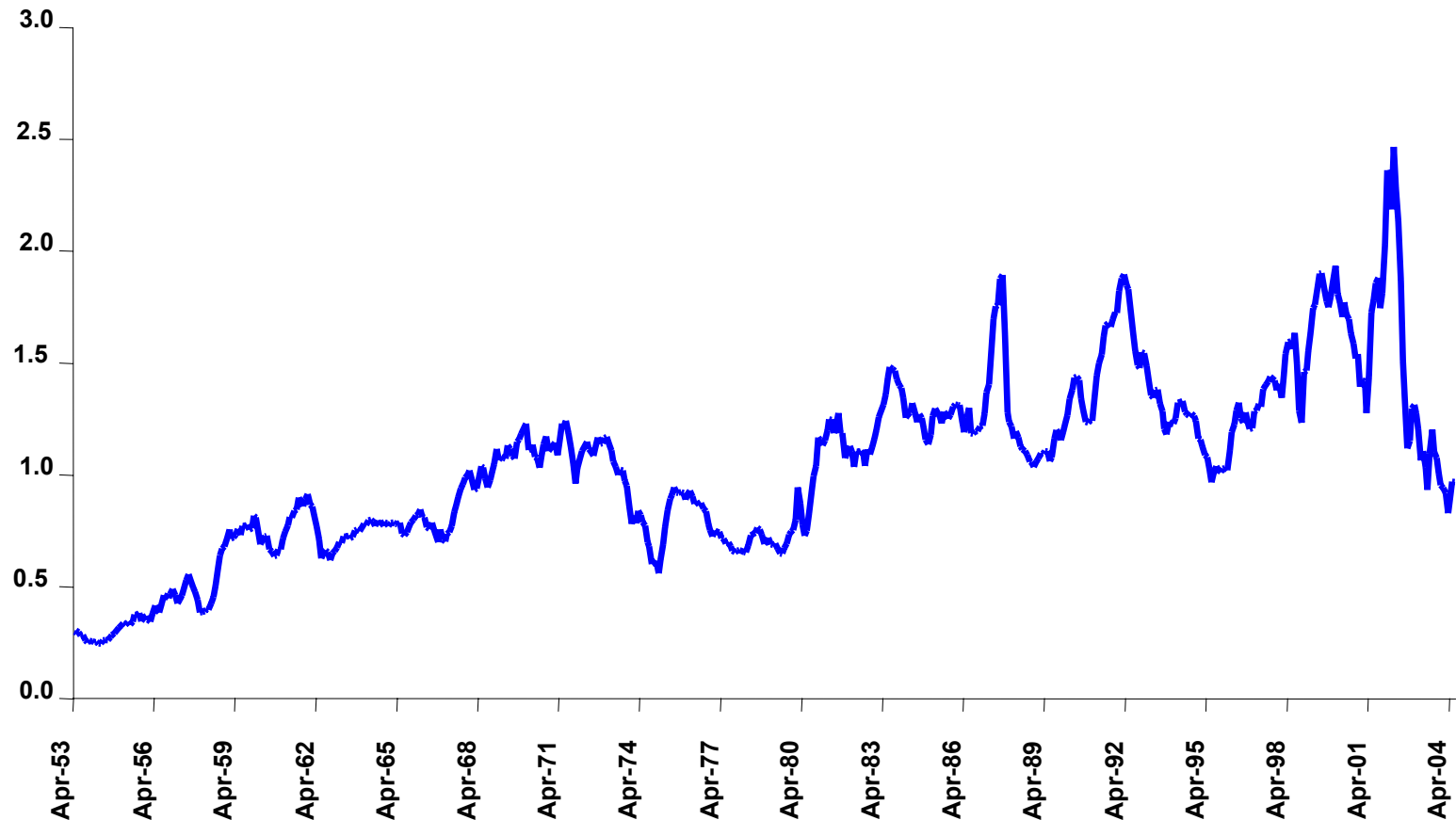


The Fed model



Source: Thomson Financial Datastream

Equities vs. bonds in the US: the Fed model since the 1950s

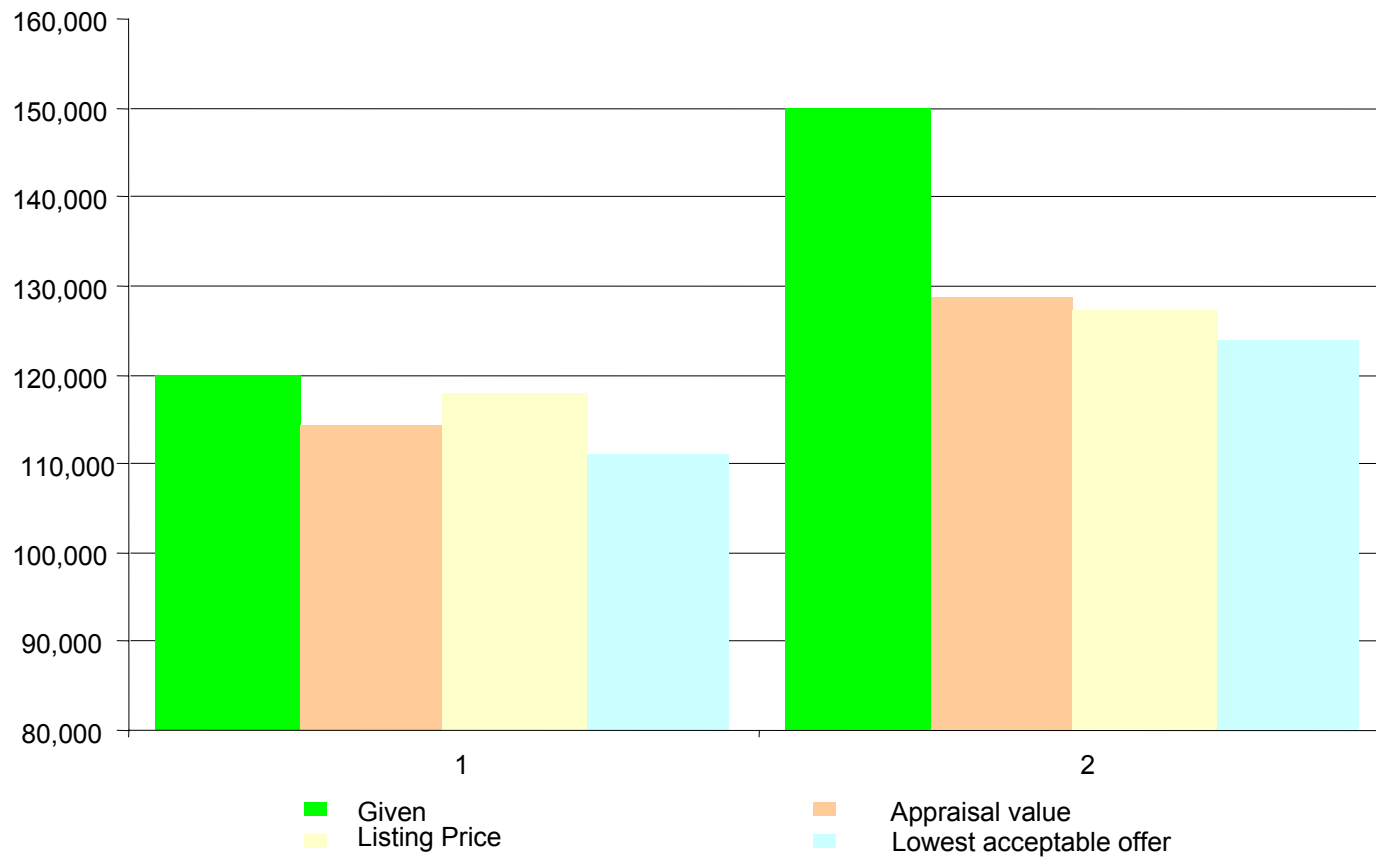


Source: DrKW Macro research

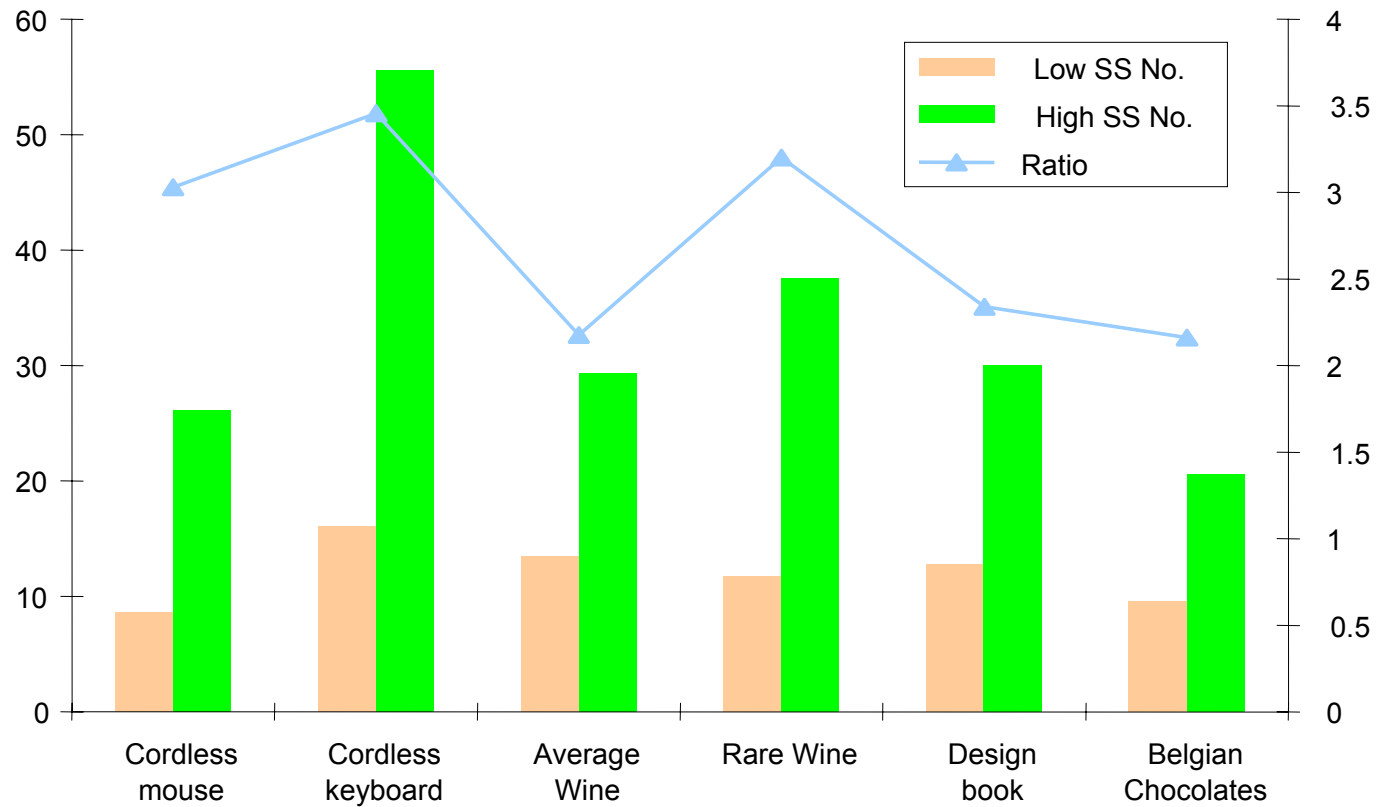
Simple maths leads to anchoring

- ▶ $8*7*6*5*4*3*2*1 = \text{median answer } 2250$
- ▶ $1*2*3*4*5*6*7*8 = \text{median answer } 512$
- ▶ Actual answer = 40,320

Estate agents and anchoring



Anchoring and valuation



Cheap? Surely some mistake - US

Various valuation measures (x)

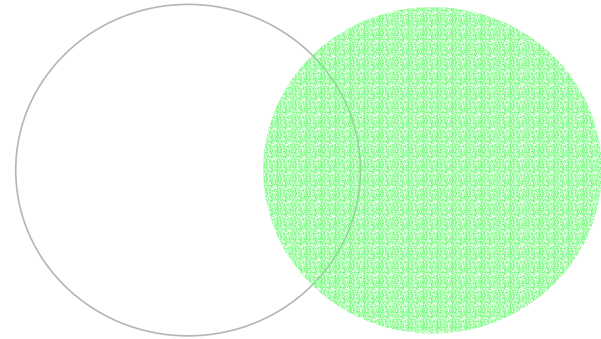
	Current level	1997-2004	Long run*
Trailing reported PE	21.1	29.0	14.0
Operating PE	17.5	22.5	14.9
Forward operating PE	15.6	19.7	12.5
PB	3.0	4.0	2.4
PC	13.0	14.9	9.2
Graham and Dodd PE	27.5	37.0	16.4
Hussman PE	19.3	23.5	11.0
Trend PE	22.0	29.0	13.9

Source: DrKW Macro research

* the term long run refers to the longest run of data we have which varies from starting in the 1870s to starting in the mid 1980s. All long run measures end at the end of 1996, effectively stripping out the bubble years.

Psychological foundations

- ▶ Linda is 31, single, outspoken and very bright. She majored in philosophy. As a student she was deeply concerned with issues surrounding equality and discrimination.
- ▶ Is it more likely that Linda is
 - ▶ Works in a bank
 - ▶ Works in a bank and is active in the feminist movement

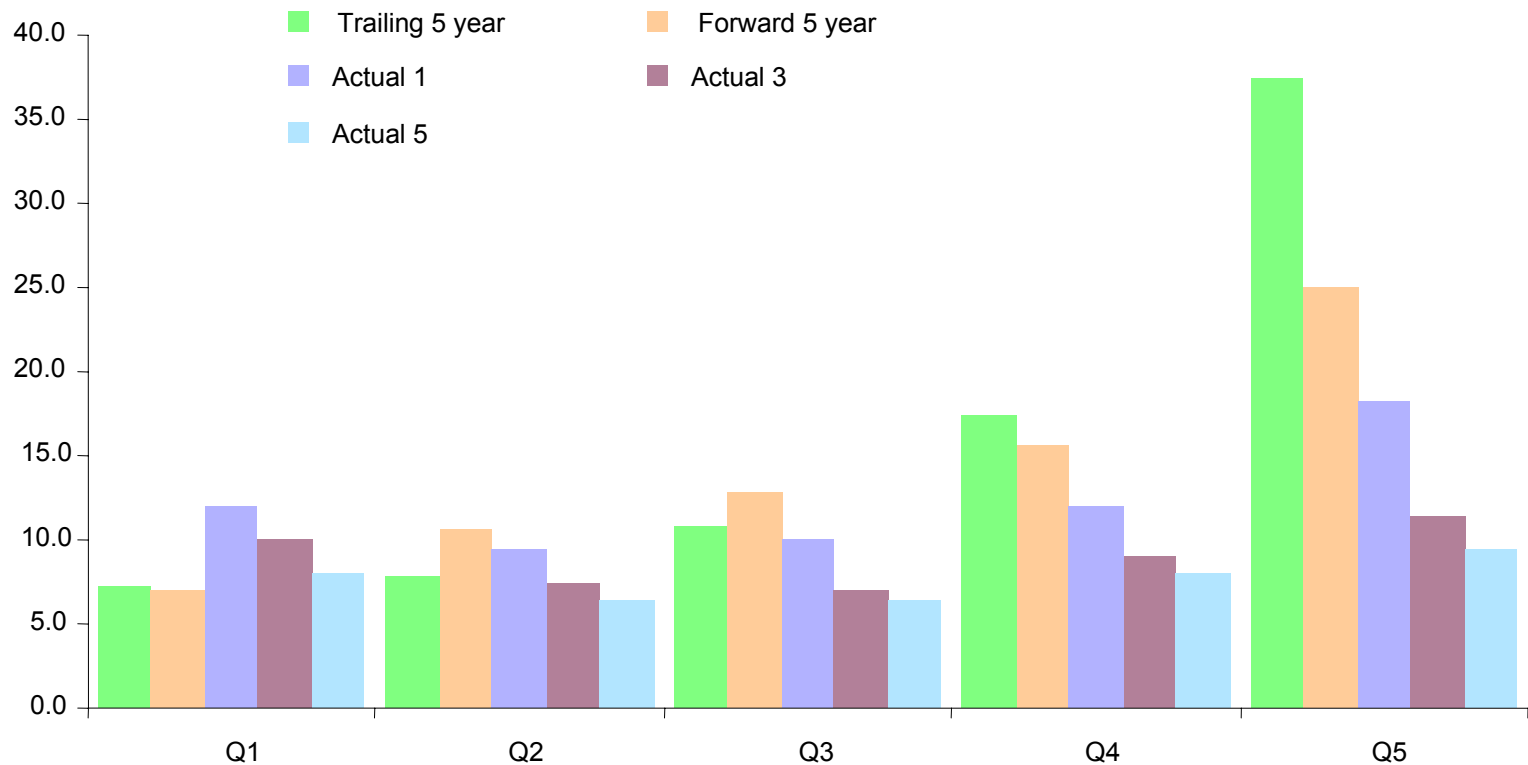


Psychological Foundations

Representativeness Heuristic

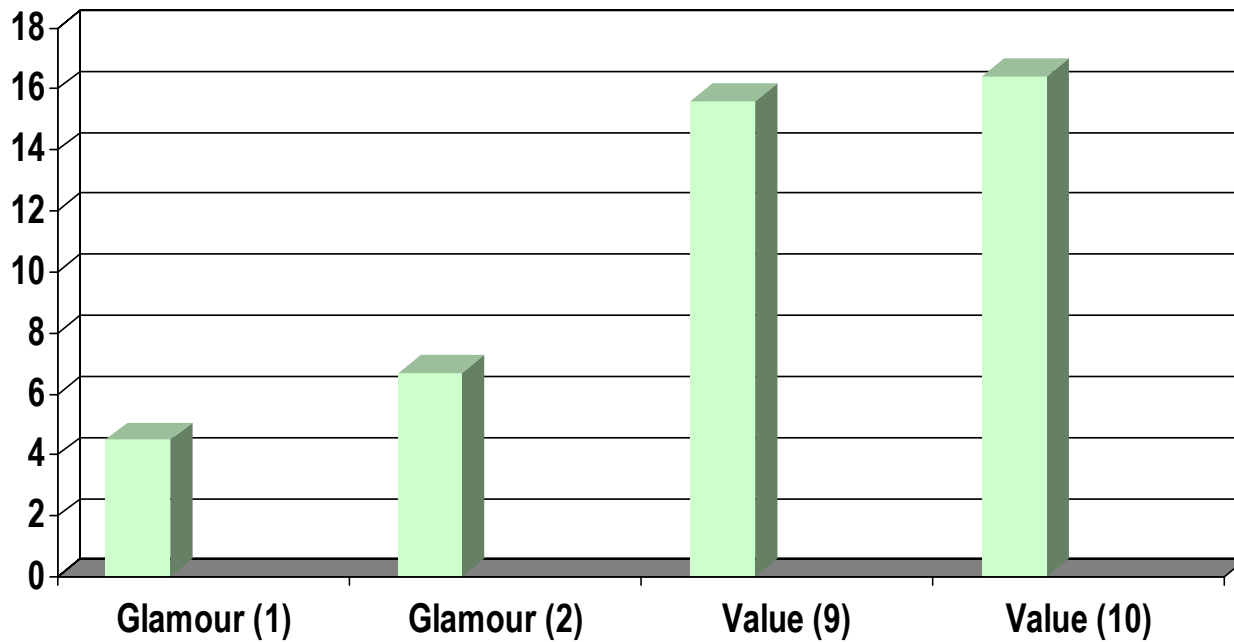
- ▶ Aka law of small numbers – belief that random samples of a population will resemble each other and the population more closely than statistical sampling theory would predict.
- ▶ Which is more likely HTHTTH or HHHTTT?

Earnings growth as representativeness



Source: Montier, and Chan et al

Great stories \neq Great investments



Under-reaction and Over-reaction

- ▶ Information is judged in two dimensions – strength and weight
- ▶ Letter of reference – judged by strength i.e. number of appealing traits
- ▶ Weight is neglected. i.e. who wrote it

Over-reaction and Under-reaction : Information analysis

		Weight	
Strength		Low	High
	Low		Under-reaction
	High	Over-reaction	

Analysis of over-reaction and under-reaction

Under-reaction

- ▶ Dividend omissions, initiations
- ▶ Earnings surprises
- ▶ Analyst recommendations
- ▶ Z-scores
- ▶ Buybacks on value stocks
- ▶ Goodwill write-offs
- ▶ Valuations

Over-reaction

- ▶ IPOs, SEOs
- ▶ High earnings growth
- ▶ Cap ex.
- ▶ Buybacks on growth stocks
- ▶ Quarterly earnings announcements

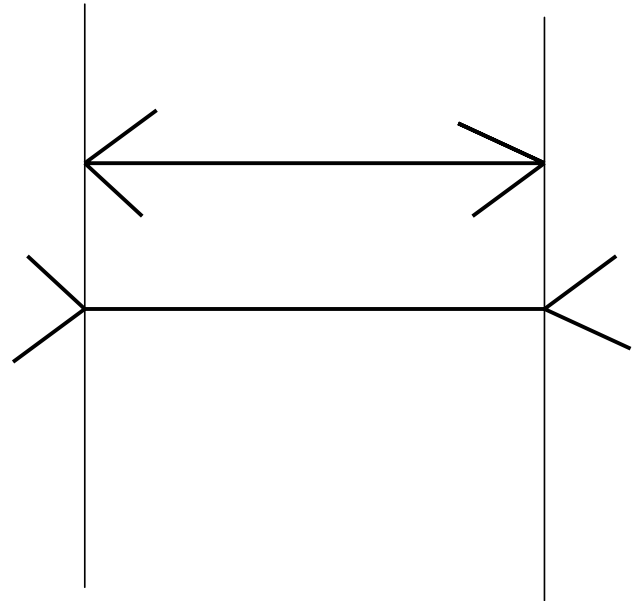
Bias of Judgement

▶ Availability Bias

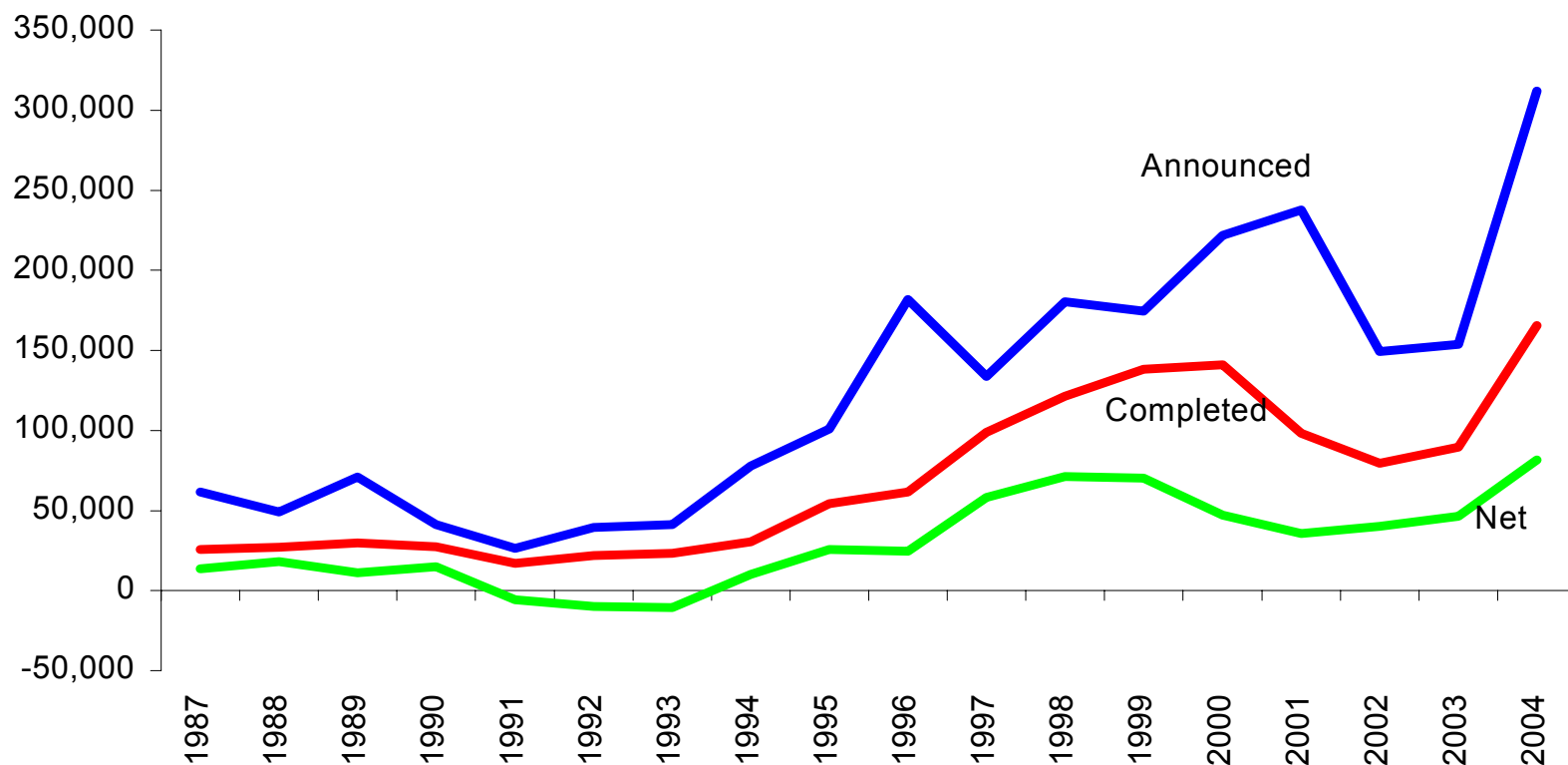
- ▶ Which is a more likely cause of death in the US – being killed by a lightening strike or as a result of a shark attack?
- ▶ Shark attacks receive more publicity, they are easier to imagine (thanks to Jaws). However, the chance of dying from a lightening strike are 30x greater than chances of being killed by a shark.

Narrow Framing

- ▶ Context sensitivity. Aka frame dependence or mental accounting.
- ▶ We can't see through how things are actually framed.
- ▶ Separate funds for separate purposes – holiday money, house keeping

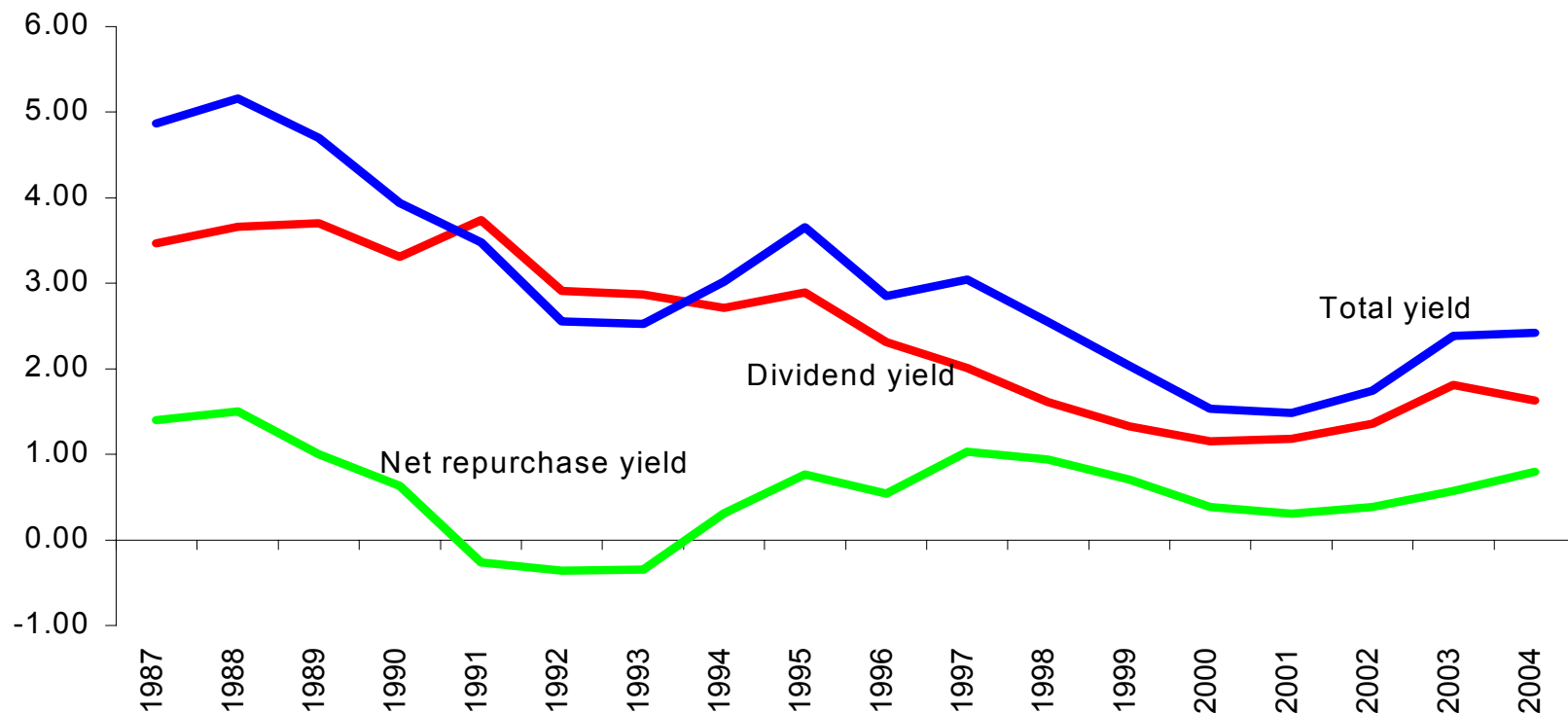


When is a buyback not a buy back? announced, actual and net share buy-backs in the US



Source: DrKW Macro research

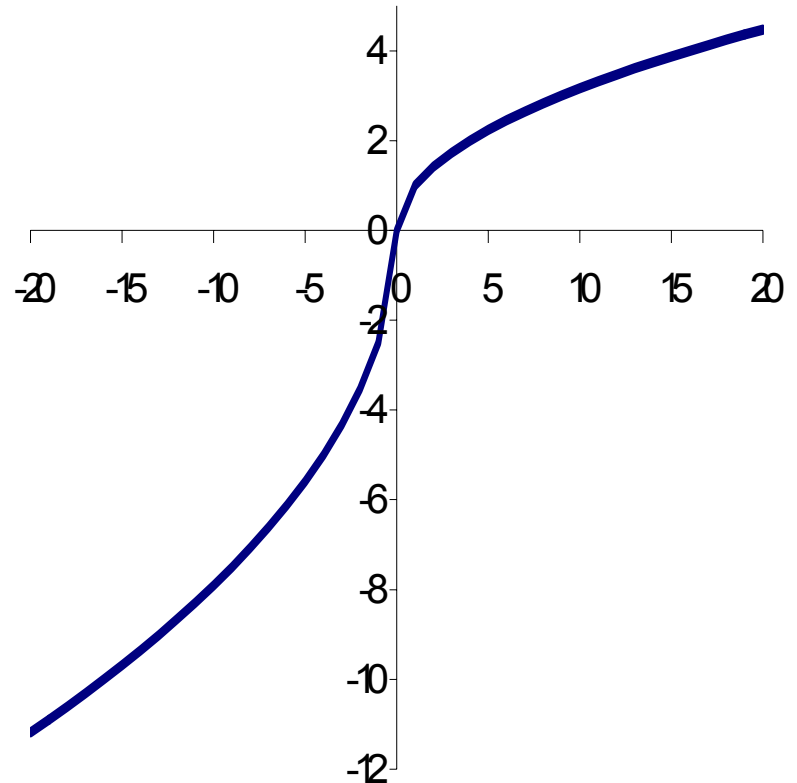
Repurchases & their impact: dividend, repurchase & total yield for the S&P500 (%)



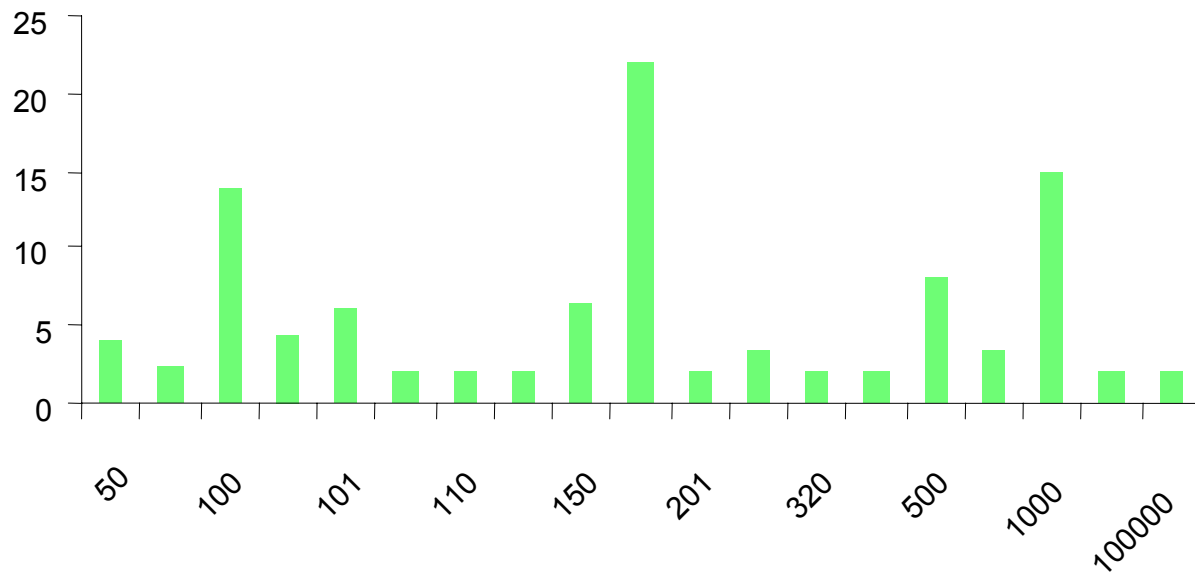
Source: DrKW Macro research

Prospect Theory

- ▶ People value changes not states. Rational man tries to maximise the utility of wealth.
- ▶ Real people worry far more about gains and losses than levels.



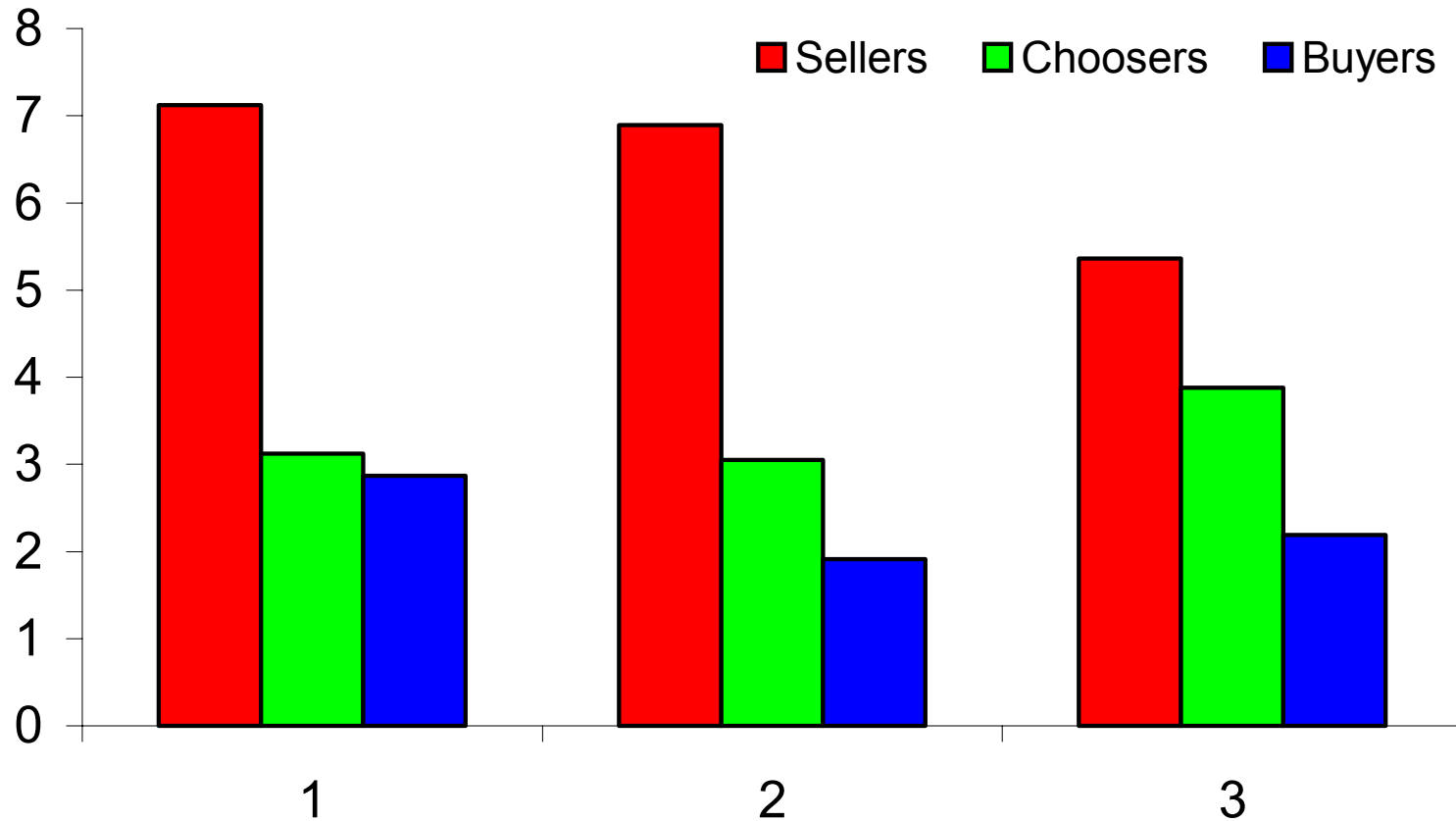
Stock broker Sample



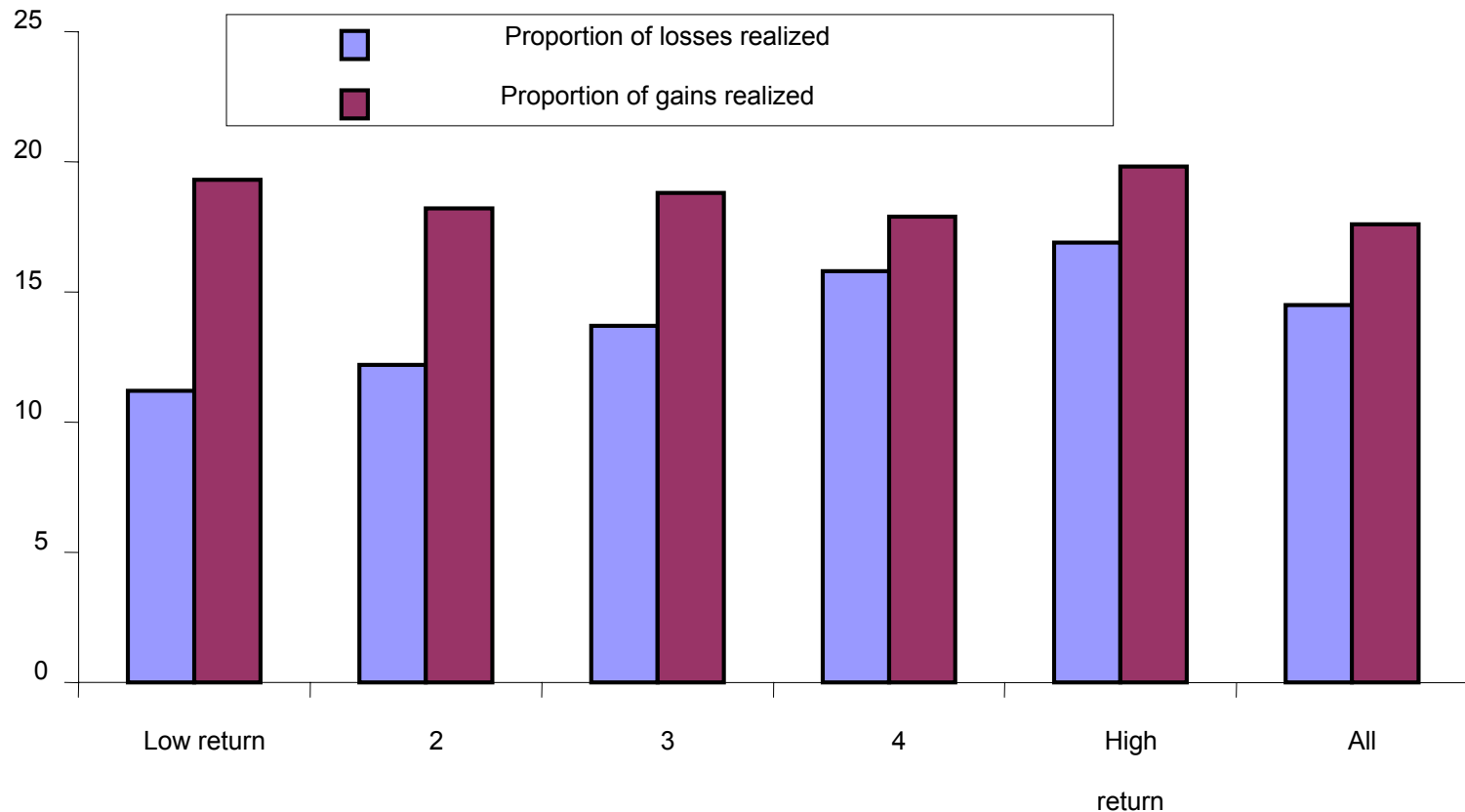
Prospect theory

- Leads to
 - Endowment effect
 - Status quo bias
 - Disposition effect

Endowment effect/Status quo bias



US mutual fund managers and the disposition effect (1980-2002)



Source: Frazzini (2004)

Top tips for better decision making

- ▶ This applies to me, you and everyone else
- ▶ You know less than you think you do
- ▶ Be less certain in your views, aim for timid forecast and bold choices
- ▶ Don't get hung up on one technique tool, approach or view – flexibility and pragmatism are the order of the day
- ▶ Listen to those who don't agree with you

Top tips for better decisions

- ▶ You didn't know it all along, you just think you did
- ▶ Forget relative valuation, forget market prices, work out what the stock is worth (Use reverse DCFs)
- ▶ Don't take information at face value, think carefully about how it was presented to you
- ▶ Don't confuse good firms with good investments, or good earnings growth with good returns

Top tips for better decisions

- ▶ Vivid, easy to recall events are less likely than you think they are, subtle causes are underestimated
- ▶ Try to focus on facts, not stories
- ▶ Sell your losers and ride your winners

Beating the biases

- ▶ Being aware of the biases is not enough. It is just an important first step.
- ▶ Need to create a framework that incorporates mental best practice. Easier said than done. Mental bad habits are persistent.
- ▶ The good news, we continue to create new brain cells throughout our lives.

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Applied Behavioural Finance:
Are two heads better than one?
The psychology of group decisions

James Montier: Global Equity Strategy

“Madness is a rare thing in individuals – but in groups...it is the rule”

Friedrich Nietzsche

“To associate with other like-minded people in small, purposeful groups is for the great majority of men and women a source of profound psychological satisfaction..”

Aldous Huxley

“Deliver us from committees”

Robert Frost

“Committees are groups of people who keep minutes but waste hours”

Berle Milton

“A committee is an animal with four back legs”

John le Carre

“A committee is a group of the unwilling, chosen from the unfit, to do the unnecessary “

Unknown

Types of groups

- Statistical groups = large number of people asked for an answer, take the mean.
- Deliberative groups = discussion is necessary
- Evidence suggests that statistical groups outperform deliberative groups and individuals
- E.g. when judging the number of beans in a jar, the group average is almost always better than the vast majority of the individual members. In one such experiment, a group of 56 students was asked about a jar containing 850 beans; the group estimate was 871, a better guess than all but one of the students

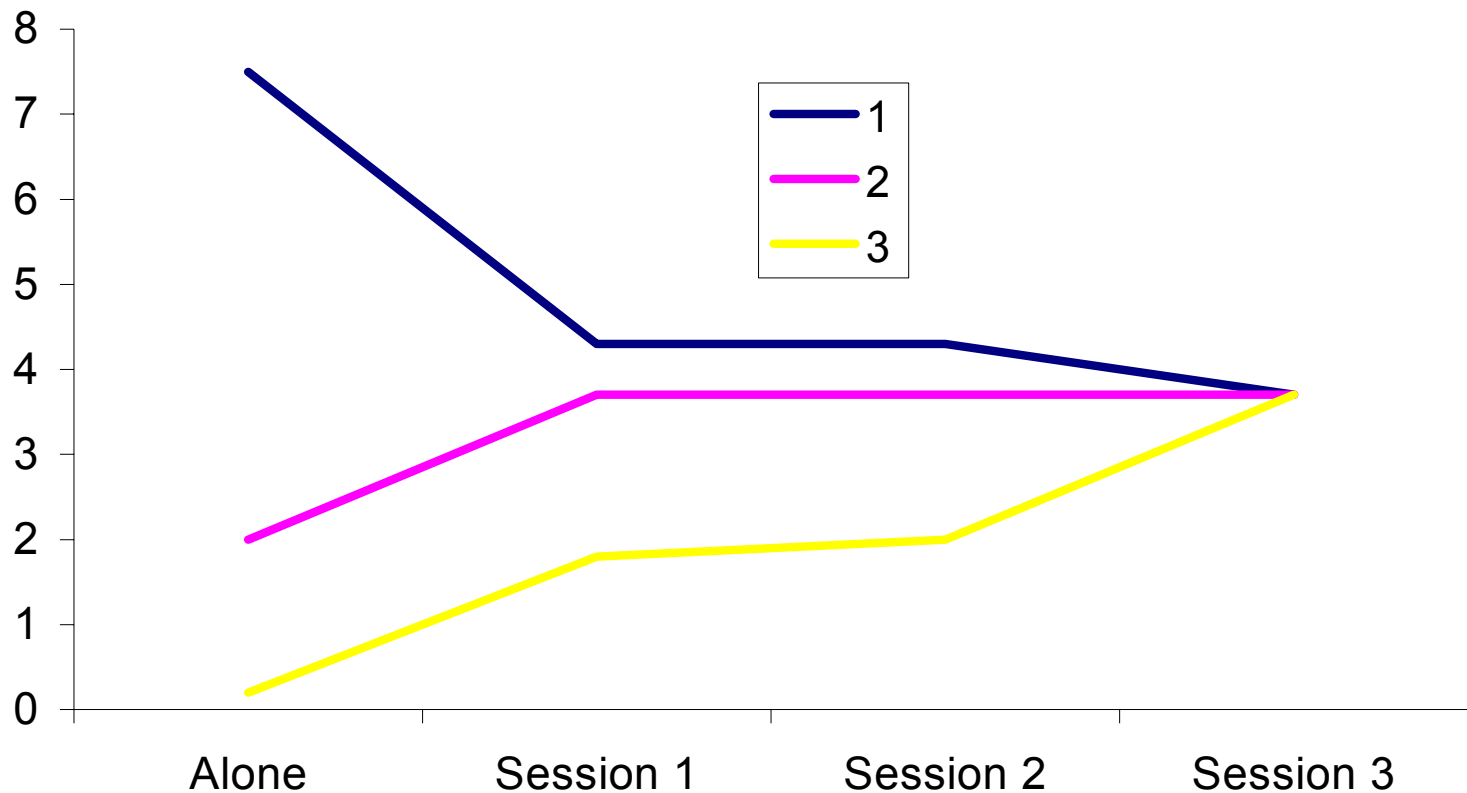
Statistical groups

- Only work when:
 - People are unaffected by others' decisions (errors are uncorrelated)
 - Probability of being correct must be independent of the probability of everyone else being correct
 - The participants must be unaffected by their own vote possibly being decisive
 - When participants have some idea of the answer.
 - Anchors are avoided

Deliberative groups


- Such groups seem to amplify:
 - Representativeness
 - Framing
 - Overconfidence (simple repetition of views leads to people having greater confidence)
 - Anchoring
 - Availability

The establishment of norms (Sherif 1936)

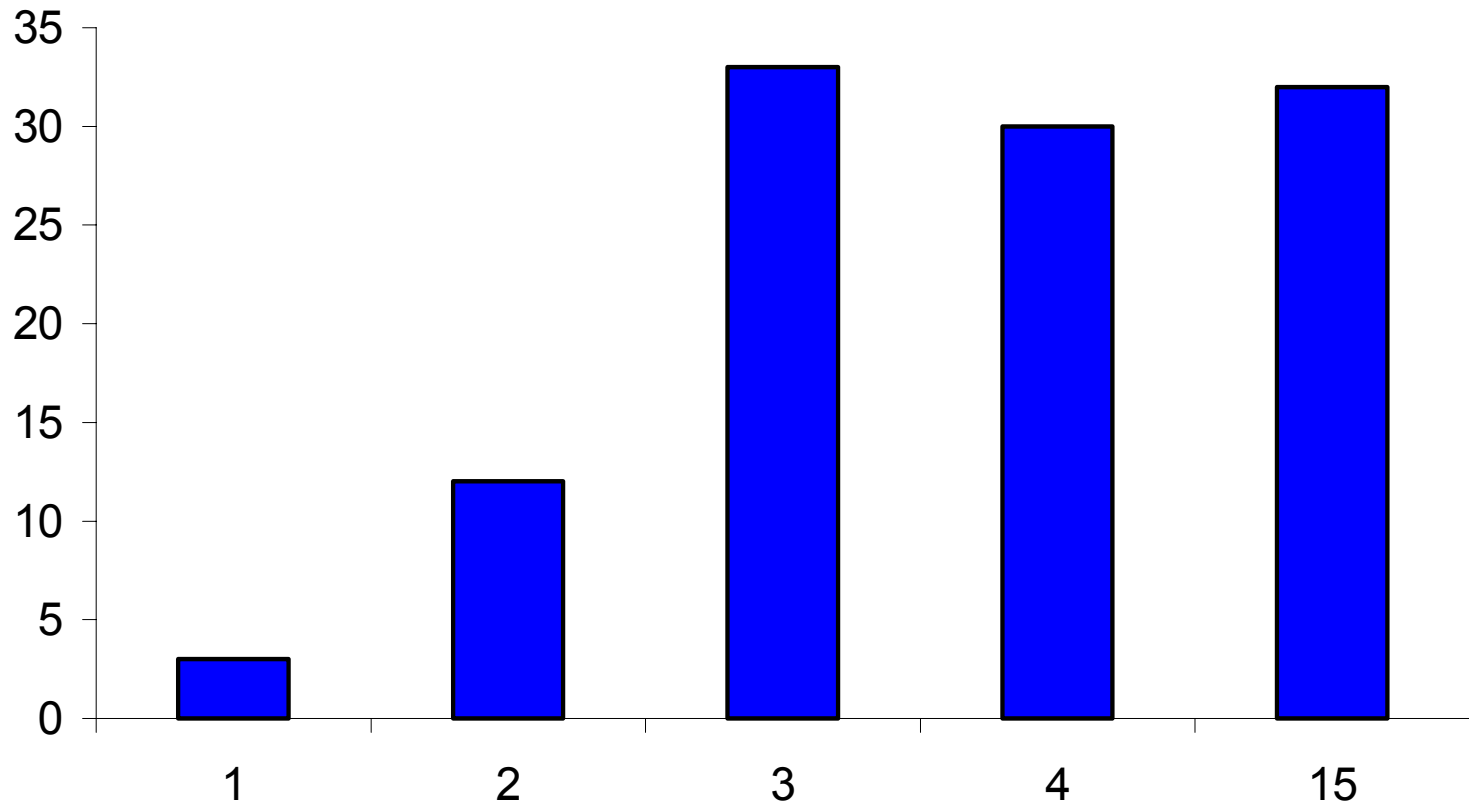


Conformity (Asch 1955)

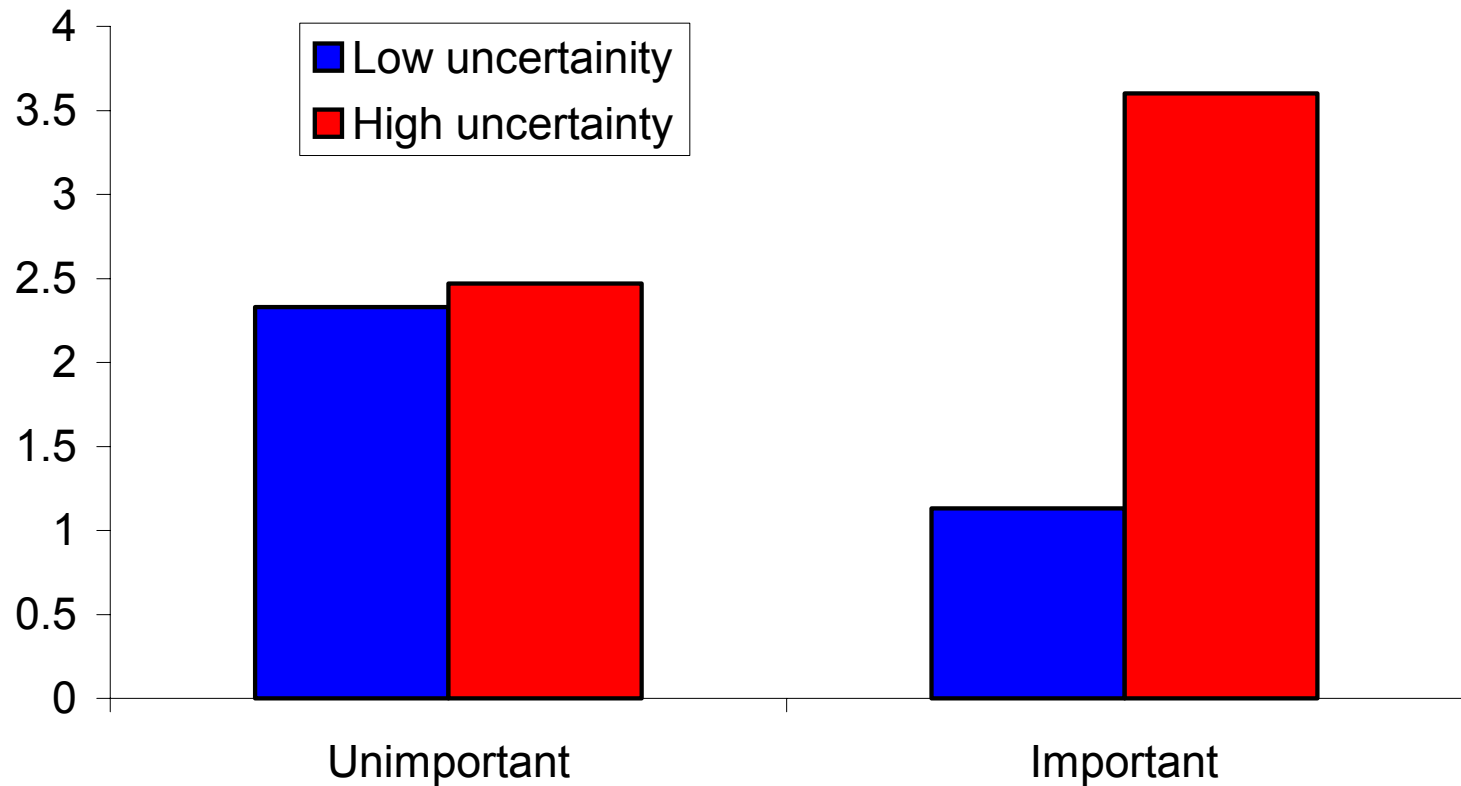


- 
- On 12 of the 18 rounds, confederates unanimously agreed on a wrong answer
 - $\frac{3}{4}$ of participants agreed with the confederates in at least one round. Half agreed in 6 or more rounds. Only 25% resisted in all rounds!

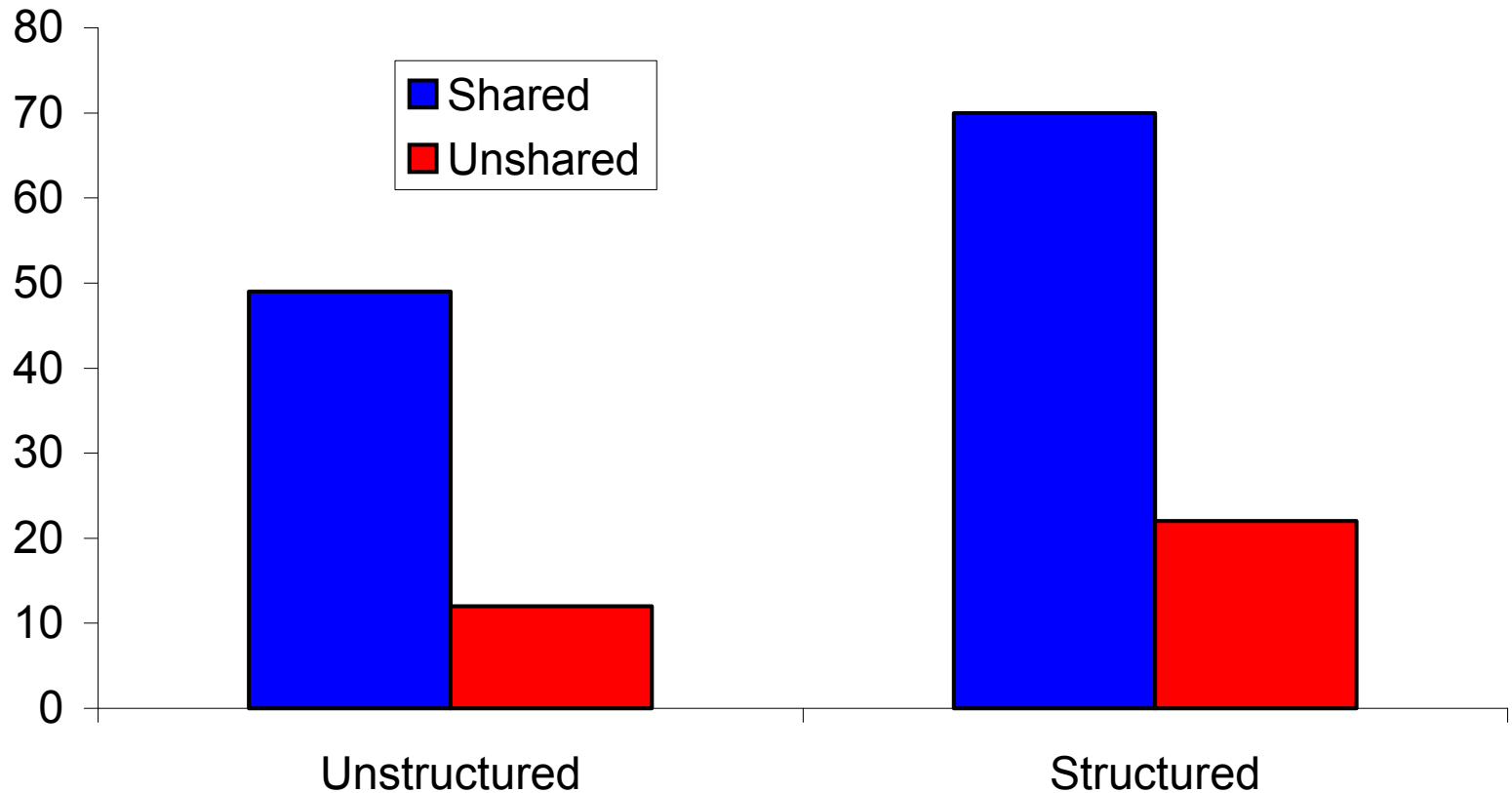
Does group size matter? (% conforming to wrong answers)



Herding when uncertain – Baron et al



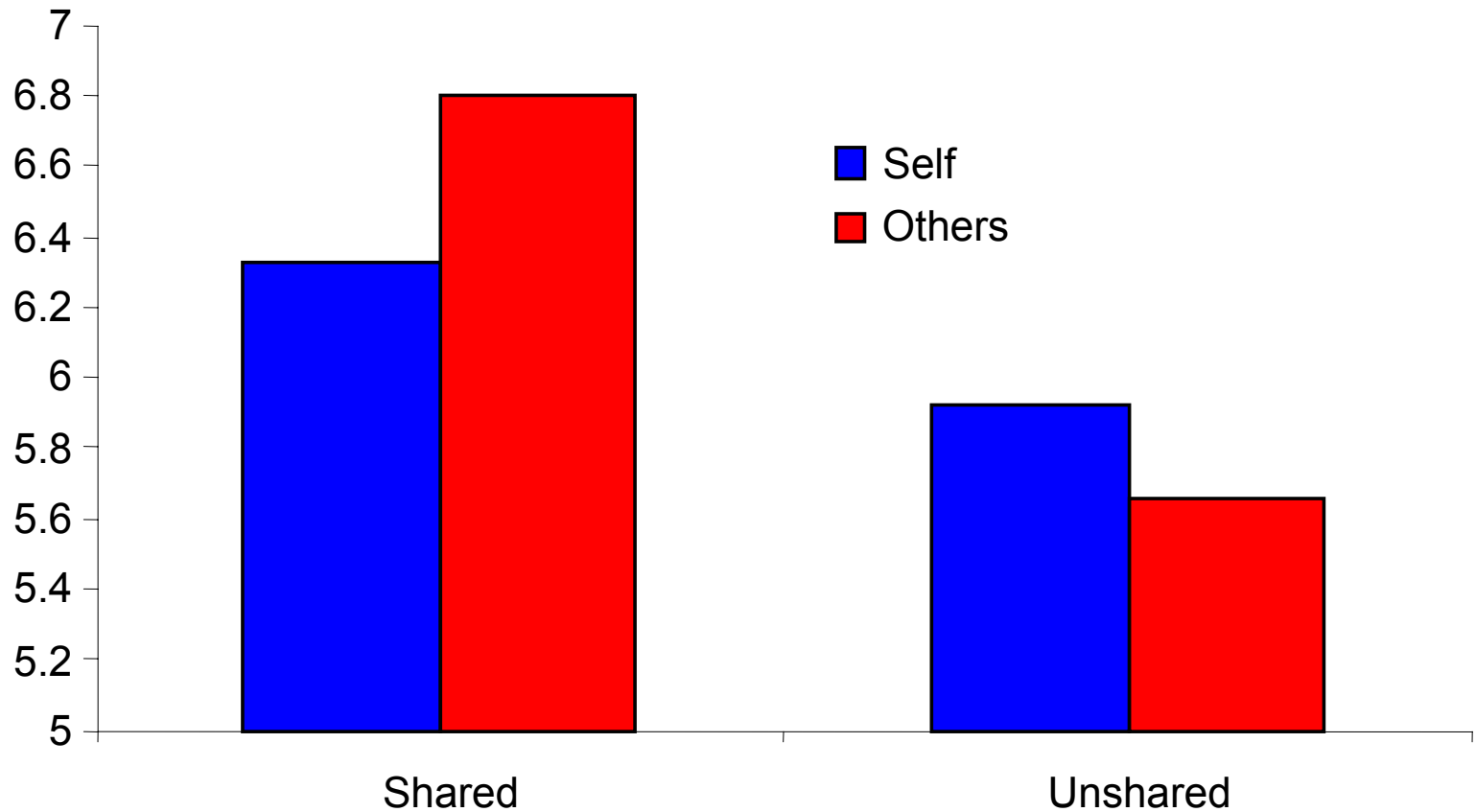
Sharing information (Stasser et al 1989)



Why are we so bad at sharing information?

- Shared information is more likely to be discussed and repeated and this will influence the individuals in the group, and hence influence the group's eventual outcome.
- Social pressure
- Cascades

Social pressure : Those who conform are rewarded (Wittenbaum et al 1999)



Cascades

Cascade creation: Actual pot used B

Player	1	2	3	4	5	6
Private signal	a	a	b	b	b	b
Decision	A	A	A	A	A	A

Source: Anderson and Holt (2004)

Group polarisation

- Group polarization is the tendency for members of a group to end up in a more extreme position in line with their original beliefs after talking to one another. The increased confidence in view mentioned earlier, begins to create feedback into the extremity of view, generally creating a loop of increased confidence in more and more extreme views

Groupthink

- A tendency to examine too few alternatives
- A lack of critical assessment on each other's ideas
- A lack of contingency plans
- Poor decisions are often rationalized
- Illusion of group invulnerability and shared morality
- True feelings and beliefs are suppressed
- Illusion of unanimity is maintained
- Mind guards are appointed to protect the group from negative information

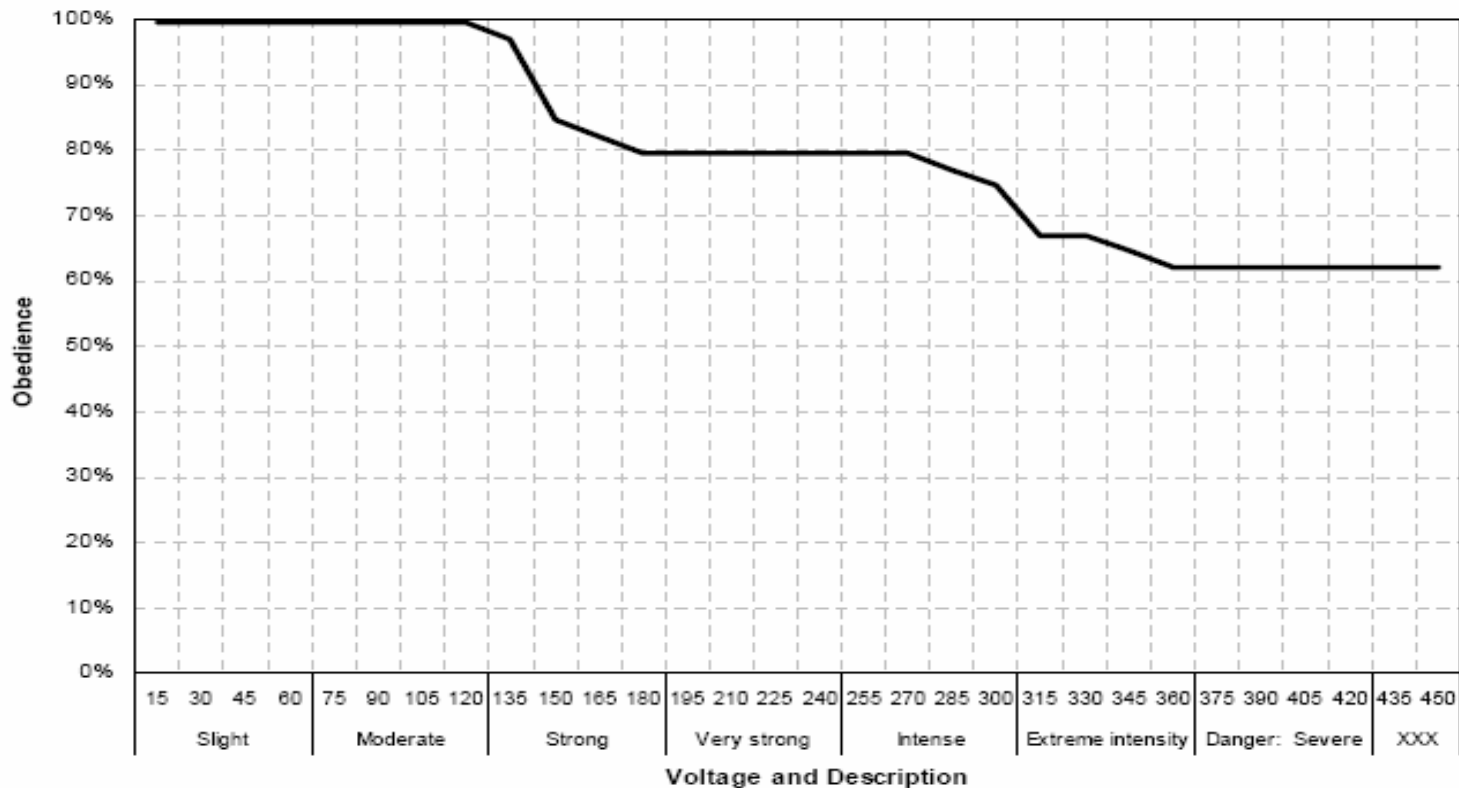
Solutions

- Secret ballots
- Devil's advocates
- Authentic dissent
- Respect for other group members

Beware of authority – Milgram experiments

Figure 2. Obedience Rates, Basic Milgram Experiment

Fraction of ordinary Connecticut residents who directed high voltage electric shocks through the bodies of perfect strangers when ordered to do so by a psychologist.



Bandura's driving forces – turning good people bad

- Moral justification
- Euphemistic labelling
- Advantageous comparison
- Displacement of responsibility
- Diffusion of responsibility
- Disregard or distortion of consequences
- Dehumanisation

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DRESDNER KLEINWORT WASSERSTEIN RESEARCH – RECOMMENDATION DEFINITION

(Except as otherwise noted, expected performance over next 12 months)

Buy	10% or greater increase in share price	Reduce	5-10% decrease in share price
Add	5-10% increase in share price	Sell	10% or more decrease in share price
Hold	+5%/-5% variation in share price		

Distribution of DrKW equity recommendations as of 1 Apr 2004

	All covered companies		Companies where a DrKW company has provided investment banking services (in the last 12 months)	
Buy/Add	337	53%	55	57%
Hold	188	30%	31	32%
Sell/Reduce	108	17%	11	11%
Total	633		97	

Source: DrKW