SPE APOGCE

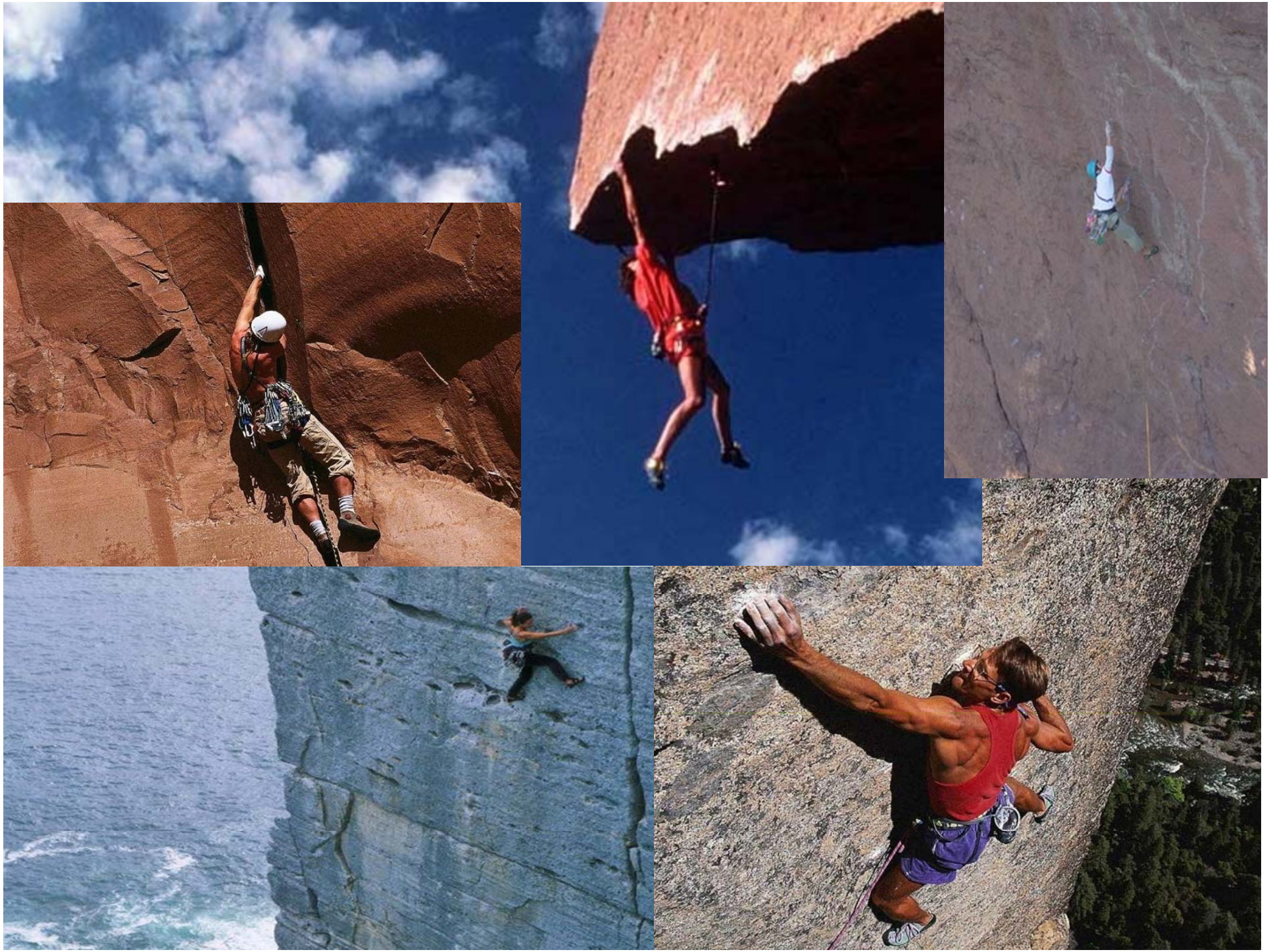
Luncheon Address

Brisbane, 19th October 2010

Pushing the Boundaries

John Boardman; Founder & Special Advisor

RISC



Philippe Croizon – quarduple amputee English Channel Swimmer


bel


HILFIGER


JPMorgan
Better insight
Better process
Better results
JPMorgan

Quality of Corporate Decision Making

- Good quality strategic decisions – 28%
- Bad decisions as frequent as good ones - 60%
- Good decisions altogether infrequent - 12%

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Memory Biases - 8

- Suggestibility
- Reminiscence bump
- Cryptomnesia / False memory
- Consistency bias
- Rosy retrospection
- Self-serving bias
- Egocentric bias
- Hindsight bias

Social Biases - 19

- Forer effect / Barnum effect
- Ingroup bias
- Self-fulfilling prophecy
- Halo effect
- Ultimate attribution error
- False consensus effect
- Self-serving bias / Behavioral confirmation effect
- Notational bias
- Egocentric bias
- Just-world phenomenon
- Dunning-Kruger / Superiority Bias
- System justification effect / Status Quo Bias
- Illusion of asymmetric insight
- Illusion of transparency
- Herd instinct
- Fundamental attribution error / Actor-observer bias
- Projection bias
- Outgroup homogeneity bias
- Trait ascription bias

Probability / Belief Biases - 35

- Positive outcome bias
- Telescoping effect
- Survivorship bias
- Selection bias
- Texas sharpshooter fallacy
- Pareidolia
- Outcome bias
- Disregard of regression toward the mean
- Overconfidence effect
- Hindsight bias
- Observer expectancy effect
- Hawthorne effect
- Gambler's fallacy
- Clustering illusion
- Illusory correlation
- Last illusion
- Availability heuristic
- Belief bias
- Ostrich effect
- Attentional bias
- Disposition effect
- Availability cascade
- Conjunction fallacy
- Ambiguity effect
- Capability bias
- Authority bias
- Stereotyping
- Subjective validation
- Subadditivity effect
- Well travelled road effect
- Anchoring effect
- Recency effect / Peak-end rule
- Primacy effect
- Neglect of prior base rates effect
- Optimism bias

Decision-making Biases - 42

- Hyperbolic discounting
- Irrational escalation
- Omission bias
- Mere exposure effect
- Negativity bias
- Interloper effect / Consultation paradox
- Normalcy bias
- Neglect of probability
- Planning fallacy
- Déformation professionnelle
- Impact bias
- Bias blind spot
- Semmelweis reflex
- Not Invented Here
- Moral credential effect
- Base rate fallacy
- Focusing effect
- Illusion of control
- Outcome bias
- Post-purchase rationalization
- Framing
- Experimenter‘s or Expectation bias
- Information bias
- Extraordinarity bias
- Confirmation bias
- Choice supportive bias
- Endowment effect / Loss aversion
- Congruence bias
- Distinction bias
- Contrast effect
- Bandwagon effect
- Denomination effect
- Selective perception
- Restraint bias
- Von Restorff effect
- Pseudocertainty effect
- Money illusion
- Wishful thinking
- Zero-risk bias
- Reactance
- Status quo bias
- Need for Closure

Decision 1

Option A:
80% Chance of winning $4,000 and
20% Chance of nothing

or
Option B:
100% chance of winning $3,000

Decision 2:

Option A:
80% Chance of losing $4,000 and
20% Chance of breaking even

or

Option B:
100% chance of losing $3,000

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Communication:

You don't want to know what you're missing: When information about forgone rewards impedes dynamic decision making^

The model maintains an estimate of the rewards associated with each action *i*, which we denote *Q(ai)*. To generate responses, the model utilizes the "softmax" rule (Sutton & Barto, 1998) that transforms the rewards associated with each action into probabilities for executing each action (e.g., choosing the Short- or Long-term option). According to the softmax rule, the probability of selecting option *i* at trial *t* is given by the difference between the estimated rewards of the two options:

$$Pr(ai) = \frac{e^{\circ \cdot Q(ai,t)}}{\sum_{i=1}^{2} e^{\circ \cdot Q(ai,t)}} \quad (1)$$

where ° is an exploitation parameter controlling the steepness of the rule's sensitivity to the difference in rewards, and *Q(ai,t)* is a current estimate of the reward associated with option *ai* at trial *t*.

As a result of choosing action *achosen* on trial *t*, the model directly experiences reward *obtained(t)*. Similarly, the model has foregone reward *rforegone(t)* on trial *t* by not choosing the alternate action *aunchosen*. These two reward sources provide the basis for updating the model's estimates of rewards associated for each action, *Q(achosen)* and *Q(aunchosen)*. To do so, the temporal-difference (TD) errors for both chosen and unchosen actions are calculated.

^ Reference: A. Ross Otto¤ and Bradley C. Love
Department of Psychology, University of Texas at Austin

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Contents

Cue integration vs. exemplar-based reasoning in multi-attribute decisions from memory: A matter of cue representation, pp. 326-338 (html).
Arndt Bröder, Ben R. Newell and Christine Platzer

Bracketing effects on risk tolerance: Generalizability and underlying mechanisms, pp. 339-346 (html).
Ester Moher and Derek J. Koehler

Encoding, storage and judgment of experienced frequency and duration, pp. 347-364 (html).
Tilmann Betsch, Madlen Glauer, Frank Renkewitz, Isabell Winkler and Peter Sedlmeier

Cognitive determinants of affective forecasting errors, pp. 365-373 (html).
Michael Hoerger, Stuart W. Quirk, Richard E. Lucas and Thomas H. Carr

Allowing repeat winners, pp. 374-379 (html).
Marco D. Huesch, and Richard Brady

Cultural differences in risk: The group facilitation effect, pp. 380-390 (html).
Do-Yeong Kim and Junsu Park

Fast Acceptance by Common Experience: FACE-recognition in Schelling's model of neighborhood segregation, pp. 391-410 (html).
Nathan Berg, Ulrich Hoffrage and Katarzyna Abramczuk

Running experiments on Amazon Mechanical Turk, pp. 411-419 (html).
Gabriele Paolacci, Jesse Chandler and Panagiotis G. Ipeirotis

RISC Pty Ltd

Resource Investment Strategy Consultants

AUSTRALIA HEAD OFFICE
Level 3
1138 Hay Street
WEST PERTH WA 6005
Tel: +61 (0)8 9420 6660
Fax: +61 (0)8 9420 6690
E-mail: riscsupport@riscpl.com

AUSTRALIA BRISBANE OFFICE
Level 2
147 Coronation Drive
MILTON QLD 4064
Tel: +61 (0)7 3025 3369
Fax: +61 (0)7 3025 3300
E-mail: riscsupport@riscpl.com

UNITED KINGDOM OFFICE
53 Chandos Place
Covent Garden
LONDON WC2N 4HS
Tel: +44 (0)20 7484 8740
Fax: +44 (0)20 7812 6677
E-mail: riscuk@riscpl.com

www.riscpl.com