

# The Psychology of Groups

The science behind managing people

# Questions and Objectives

- Why does some management training work, and why is some completely useless
- Why is decision making in projects sometimes bizarrely dysfunctional and how do you do something about it?
- Why are we so poor at risk management?
- Why are many motivation methods in use today actively harmful and how can you make things better?
- What makes a happy, productive team?
- Objective: Introduce you to some science and get you sufficiently interested that you go and learn some more

# Introduction

The 10 minute psychology course

# We are all Engineers

- What distinguishes us most obviously from our siblings, the other primates, is the extent to which we make things:
  - tools, shelters, clothes; but more importantly
  - toys, decorations, art; and of course
  - weapons
- This is all engineering, and it started a couple of million years ago with Homo Habilis, but really took off only a couple of hundred thousand years ago when we turned into what we have called Homo Sapiens but should maybe have called Homo Ludens
- We are really good at learning how things work and using that knowledge to make stuff we want
  - These are what I call “algorithmic skills”; recipes that we follow, based on knowledge (science), that result in predictable outcomes
  - Most of project management training focusses on these algorithmic skills (e.g. scheduling, budgeting, etc.) , and they work very well
- However, we have been turning into us for hundreds of millions of years, long before we made our first tool; and we are the products of all of that evolution.
- We are far from being just engineers.

# Why Psychology

- Management is to Psychology as Engineering is to Physics
- Engineering is about doing stuff with things, using our knowledge about things (physics)
- Management is about doing stuff with people
  - We know a lot of physics;
  - How much do we know about people?

# Psychology

- Psychology has developed bad reputation because it's associated in the common mind with
  - Pop psychology (a million and one self-help gurus)
  - Dubious theories and therapies, (asylums, drugs, lobotomies and other unpleasant things)
- However, I am using the term not in the sense of “therapy” or “philosophy”, but in the sense of “science”, i.e. knowledge about how people really work

# Its Not All New

“It is as if Freud supplied us the sick half of psychology and we must now fill it out with the healthy half”

- Abraham Maslow

- Maslow’s hierarchy dates to the late 1940’s and Herzberg’s Two-Factor theory dates back to the late 1950’s
  - These things are taught in organisational behaviour classes at business schools
- A lot of neuroscience is new, however, and psychology is becoming a harder science based on experimental methods and research
- There is a lot of new research out there; this new wave of science is starting to percolate into the art of management
- Some of this research is also showing us why its hard to train managers to use this stuff properly

# Divisions in the Mind

- Brain vs Body
  - The body is full of glands and nerves that affect the brain and change your mind
- Left vs Right
  - Language and Analysis vs pattern recognition
  - Left brain seems to be interpreting the world and making up a narrative as we go along
- New vs Old
  - Hindbrain, midbrain, forebrain
    - Hypothalamus (basic drives and motivations)
    - Amygdala (emotional learning and responses)
    - Hippocampus (memory)
  - Neocortex (highly developed in social animals, especially primates)
    - Frontal cortex (new associations, thinking, planning)
    - Orbi-frontal cortex (emotional reactions such as reward/punishment, pleasure/pain , loss/gain responses)
    - Our “new” brain is even more “emotional” than the old one
- Controlled vs Automatic
  - Algorithmic vs Intuitive
  - Slow, step by step, one at a time vs Fast and multitasked

# Some simple models to help us

- The Elephant and the Rider
  - Jonathan Haidt (Psychologist; Professor of Ethical Leadership at New York University's Stern School of Business)
    - The rider is responsible for controlled thought; it interprets the world and makes up a narrative
    - The elephant includes gut feelings, emotions and intuitions
    - The rider is not in charge unless the elephant lets it be so
- System 1 and System 2
  - Daniel Kahneman (Economist: Nobel Prize in Economics)
  - System 1 operates automatically and quickly with little or no effort and voluntary control
  - System 2 allocates attention to effortful mental activities including complex computations
- Like a project schedule, these are simplifications of reality that help us think about the problem

# Exercise

- Multiplication

- $2 \times 3 = ?$

- $5673 \times 27 = ?$

# What we learned

- Some problems are figured out automatically and involuntarily (System 1)
  - Simple arithmetic
  - Catching a ball
  - Driving a car (once we have had some practice)
- Others require us to apply an algorithm (System 2)
  - Long division
  - Quantum Physics
  - Assessing Project Risk
- The trick is to know which one is appropriate in any given situation

# Decision Making

“So convenient a thing it is to be a reasonable creature, since it enables one to find or make a reason for everything one has a mind to do”

- Benjamin

Franklin

# Exercise

- “Anne approaches the bank”
- What do you think is happening based on the sentence above?

# Rational Decision Making

- Research shows that most of the time we are less rational than rationalizing
  - In Haidt's model, the rider makes up a story to explain why the elephant did what he did, and will believe this story implicitly
  - In Kahneman's model, System 2 is lazy; it will let system 1 make up a narrative that explains the information at hand, and will ignore the fact that information is missing; these intuitive decisions are often wrong, and are the hardest to dislodge.
- It takes effort to untangle context, identify missing information, and make truly rational decisions (this is a hallmark of system 2; system 1 appears effortless by comparison)
- Kahneman calls this problem "What You See is All There Is"

# Tribal Leadership

- Scary research: you can predict the outcome of an election to a 70% accuracy level by showing pictures of the candidates to a bunch of people and asking them how “competent” each person looks
- We are tribal by nature; we probably evolved in small social groups and at a very deep level the elephant mistrusts people not of our tribe
- Tribes squabble and fight just like families do; but when a big problem arises, we tend to let a leader come forth; in some sense it doesn’t matter who leads as long as someone does (order is preferable to chaos)
- Back in the day, you wanted the biggest, healthiest male to go and fight the tiger or lead the war party
  - That’s why even today, we elect tall, handsome men to positions of power if we allow the elephant to do the voting.
  - It takes effort to overcome these intuitive, wrongheaded decision making processes
- If you combine this with the laziness of system 2, we end up with jumping to the quickest, easiest solution proposed by the most confident person in the room – this is called “**groupthink**”

# Why Management Training Often Doesn't Work, Part 1

- These problems with decision making have been known, in some form or other, for decades if not centuries.
- There are whole courses (I have attended some of them) on how to solve problems in a rational way.
- I don't really remember any of them and never found them useful.. Why?
- Because they were teaching the rider, and it's the elephant who makes most of our decisions.
- **You can't teach the elephant, you have to train it.**

# Wisdom

“We do not receive wisdom, we must discover it for ourselves”

- Marcel Proust

Explicit knowledge is taught in schools and learnt by the rider

Tacit knowledge is gleaned from experience (including experience of applying explicit knowledge) and is learnt by the elephant

The effective combination is called wisdom, and is not achieved unless we experience setbacks and failures as well as success.

# Practical Algorithms for Effective Decision Making?

- You have to overcome two things (at least)
  - WYSIATI (not considering all the relevant data)
  - Groupthink (following the leader)
- Some easy to use techniques (you knew at least two of these all along; now you know why)
  - Increase the available information: regular team meetings where everybody shares what they are doing and everybody is made aware of the big picture objectives
  - Have a second gate, where people not involved with the project ask hard questions before a decision is made final; design reviews, CCBs etc. But be aware that these reviewers are easy to fool by how you present the material... WYSIATI.
  - Before you make a big decision, have everyone write down their position and understanding of the situation and distribute this to the meeting before discussing it (avoids information censorship, allows error de-correlation and reduces groupthink)

# A Harder Algorithm

- Training the elephant to use explicit knowledge happens in two steps
  - Identifying appropriate algorithms and codifying them into processes (explicit knowledge)
  - Making people follow the processes until they become “second nature” (tacit knowledge)
- Good Project Managers do this
- What is harder, but may be more effective in training good managers, is to allow people to fail; then allow them to develop appropriate processes for the specific project

# Risk Management

“Gambling is a tax on people who  
can't do mathematics”

- Anon

# Daniel Bernoulli

- The expected outcome is the sum of the product of the values of the possible outcomes and their probabilities
- In the case of a risk assessment we must evaluate the likelihood of a risk occurring and its cost if it does occur. The impact of the risk is product of these two values.
- Is this a System 1 or System 2 type Problem?
- And how good are we at estimating these values: cost and probability of occurrence?

# Substitution Error

Estimating cost and probability is hard; so we tend to do something easier instead:

- Answer a similar, easy question rather than the actual, harder question

Kahneman calls this “Substitution Error”

# Probability Neglect

- Researchers such as Slovic have shown that humans are not able to accurately evaluate low probability risks. Sunstein calls this “probability neglect”.
- Instead of evaluating the probability of a risk occurring, we tend to answer an easier question: what do we feel about the origins of the risk
  - For example, if we feel strongly about environmental matters, we tend to overemphasize low risk events caused by poor environmental practices
  - If, on the other hand, we feel that economic recovery far outweighs environmental concerns, we tend to underestimate the risk and impact of the same practices.

# Benefits vs Risk

- We are very poor at separately evaluating costs/benefits and risk
  - If we feel strongly about one of them, we will downplay the other
  - This is called the “affect heuristic”
  - Research has shown that if we receive a document extolling the benefits of something, we will evaluate its risks as lower than otherwise; and vice versa
  - Also, we are “loss averse”: if a risk is expressed as 10% chance of failure, we see this as worse than 90% chance of success
- The result is: we underestimate the risks on projects we want to do, and tend to express the risks in terms that make ourselves and others more confident (probability of success).

# Exercise

(Adapted from Kahneman)

Linda is in her forties, she went to UBC and completed a liberal arts degree with a major in Women's Studies. She dresses in good quality, practical, not particularly fashionable clothes. She is letting her hair gray naturally. She lives in Burnaby Heights.

Order from most to least likely:

- Linda is a yoga instructor
- Linda is a bank teller
- Linda is a bank teller and active in feminist circles

# What We Learned

- Instead of doing the math, we make up a narrative that describes a situation, and we believe it.
- Even when we do the math correctly, and it disagrees with our intuition, we will argue with the results.
  - Steven Jay Gould, when he read the Linda research results said that even when he fully understood the statistics “a little homunculus in my head continued to jump up and down shouting at me - but it can't be... read the description!”

# Stereotyping

- This is another type of substitution error
  - Having a little information about a problem allows us to create a stereotype in our minds and use that to decide on probability and completely ignore the underlying base rates
  - Bayesian statistical methods tell us to start with the base rates and how to adjust them according to the additional information we have; this is a system 2, algorithmic problem – our intuition is useless here

# Why Management Training Doesn't Work, Part 2

- Teaching the rider that the elephant can't do statistics is a waste of time; the elephant does what he wants
- You have to set up a risk management algorithm that deals with the statistics, and don't look at the answer until you're done

# Some guidelines on Risk Management

- Get everyone on the project to independently write down as many risks as they can think of; use the WBS to ensure full coverage (to avoid WYSIATI)
- Get real statistics on failure rates of projects
- Collect statistics on all projects in your organisation
- If relevant statistics are unavailable make a table of probabilities against generic tasks using experienced, expert sources and review them as widely as possible
- Create a process whereby the probabilities and impacts are associated with risks as logically and mechanistically as you can make it
- Don't look at the outcome until you're done; you cannot trust yourself not to fiddle the results
- Order the results by impact (probability times cost); and actively spend money mitigating the biggest ones
- Be wary of low probability, very high impact events; you will likely underestimate their probability and you may not be able to afford to mitigate them effectively: these are the things you should consider buying insurance for.

# Motivation

“There is a mismatch between what science knows and what business does”

- Dan

Pink

# Extrinsic Motivators

- Dan Pink's book "Drive" has been presented at one of these seminars before.
- His thesis, supported by decades of research dating back to Maslow and Herzberg in the mid twentieth century and up to Dan Ariely in the present day, is that extrinsic motivators don't work for the kind of work we do, and are often actively harmful
- Research unequivocally shows that when people are motivated by things like bonuses, their decision making becomes less creative, more narrowly focussed and sometimes actively harmful
- Yet, we continue to use money and threats as our primary motivators

# Intrinsic Motivators

- **Autonomy**
  - The ability to choose what we work on and how we do it
- **Mastery**
  - The desire to be good at and get better at what we do
- **Purpose**
  - The desire to do something meaningful

# Purpose

- Maslow coined the term “self-actualisation” back in the fifties, and he spoke of “peak experiences”
- This can be derived from many things...Maslow identified what he called “Being Values”
- His work has been picked up by modern psychologists; read Martin Seligman for example
- The key message is that we can find purpose in a variety of things; we don't need to save the whales on every project, we could just be making an app that is really cool (playfulness is important to Homo Ludens);
- However, the objective must have some degree of authenticity to it and must link to values.

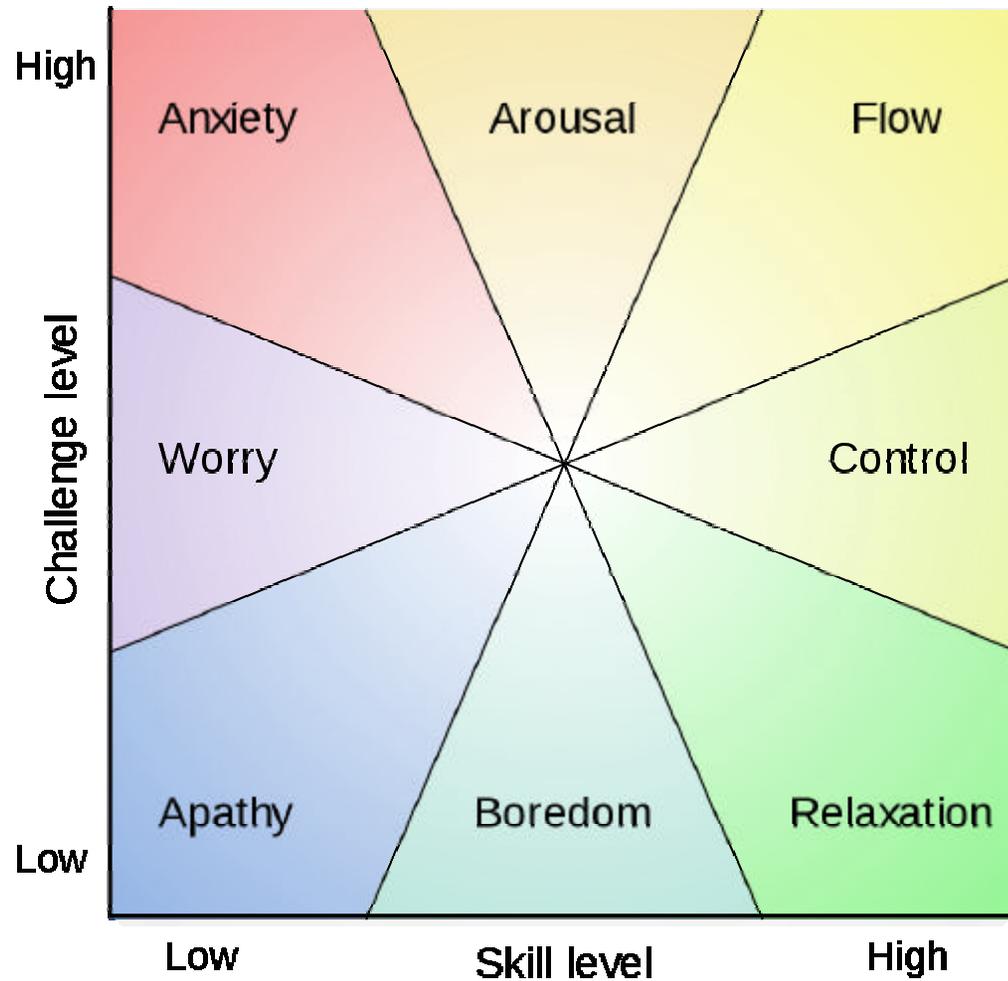
# Mastery and Flow

Proposed by Mihály Csíkszentmihályi, “Flow” is the mental state of operation in which a person performing an activity is fully immersed in a feeling of energized focus, full involvement, and enjoyment in the process of the activity.

Schaffer proposed 7 flow conditions:

- Knowing what to do
- Knowing how to do it
- Knowing how well you are doing
- Knowing where to go (if navigation is involved)
- High perceived challenges
- High perceived skills
- Freedom from distractions

# Csíkszentmihályi's Flow Diagram



# Growth

- Both Haidt and Kahneman, in different contexts, speak of habituation... the tendency for things we once enjoyed to become stale and less enjoyable.
- In this context, things we once found challenging become too easy, and what once seemed a high level of skill is now seen to be less so – we become bored
- Ensure that people who are finding it a little too easy get a bigger more challenging role as soon as you can manage it

# Autonomy

- Back in the seventies, Hersey and Blanchard's Situational Leadership Model assumed that the end goal of management was mature team members who needed little direction and little support; they developed a lifecycle model describing leadership styles for every step along the way.
- People who
  - know what they are doing and
  - who are motivated and
  - who understand the objective and purpose of their work
  - don't need to be told what to do
  - Lots of examples... Wikipedia is the best known
- Your job as a project manager is to create the environment where you no longer have to manage

# Why Management Training Doesn't Work, Part 3

Science has been telling us that bonuses don't work for decades; why don't we listen?

Because we all want our bonuses, especially the managers who decide whether bonuses are to be part of the company's remuneration scheme.

Luckily, we can pay bonuses, as long as we just ignore them most of the time (they are hygiene factors in Herzberg's terms, so we should make sure they are easy to get)

Then, get on with autonomy, mastery and purpose in the day to day running of the project

# Some rules to manage by

- Allow people to choose tasks on your project
- Allow a “safe amount of failure” ... in the arousal zone (this also trains the elephant)
- Ensure that the right algorithms are in place (processes that ensure that system 2 doesn't slack off); where possible, let the team develop and adjust these as they go
- Ensure people have the opportunity (training, experience, exposure) to really master their tasks
- Emphasize at all times (in every review for example) the objectives of the project and why they are important and can be linked to authentic values
- Work hard; its not rewarding to do things that are too easy

# Warfare

“War is politics continued by other means”

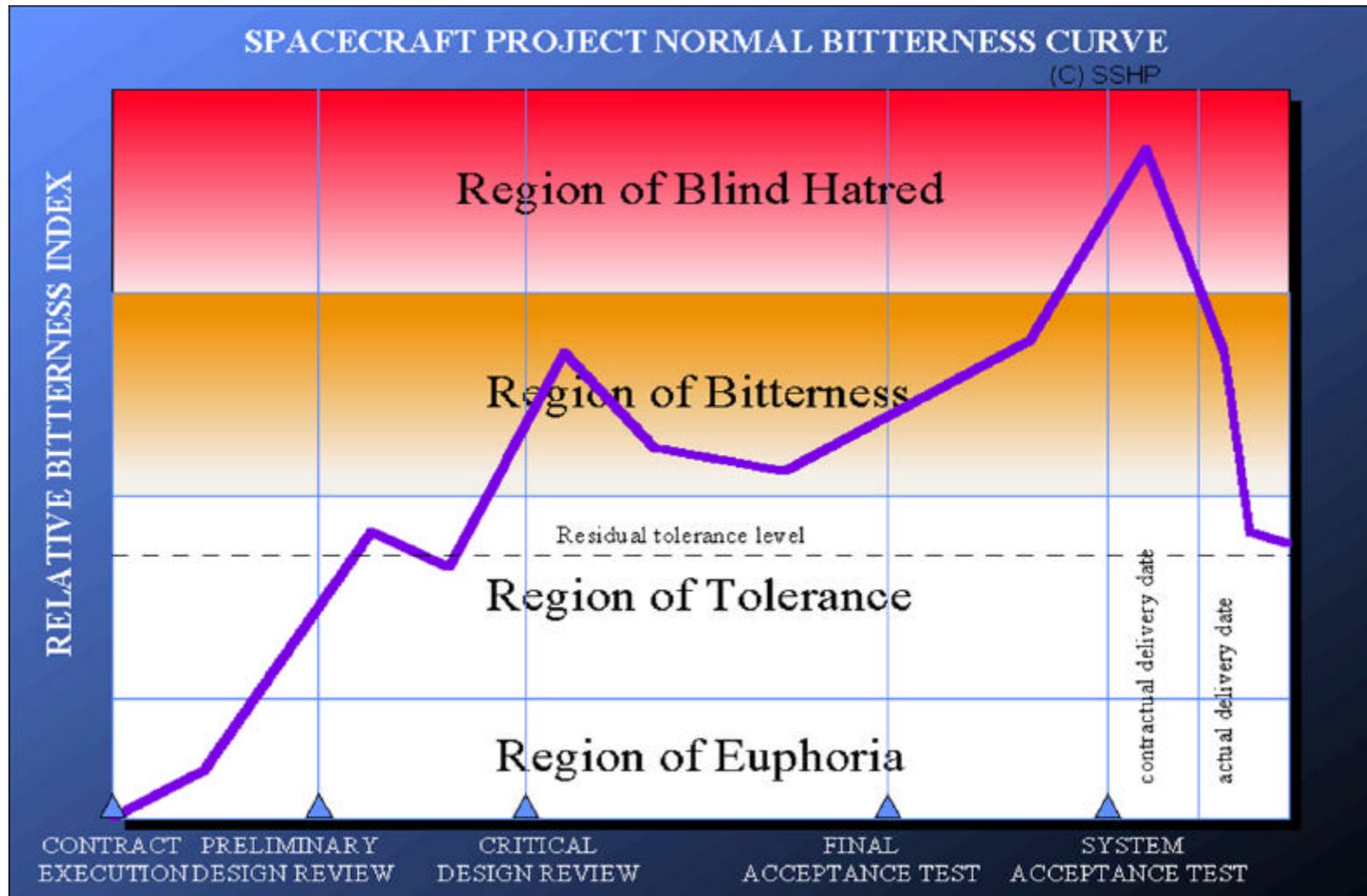
- von Clausewitz

# Tribal Warfare

- We are tribal creatures, and the elephant wants to protect us from all those other voracious tribes out there
- Our customers and subcontractors all too often end up being “other tribes”

# Spacecraft projects

(Courtesy of Surrey Satellite Technologies Ltd)



# Negotiations or Warfare

- Projects are involved in negotiations all the time
  - With our customers
  - With our subcontractors
  - Even with the departments and managers in our own company
- These conflicts are not inherently bad; they are necessary to work out a solution to whatever issue is being negotiated
- We've all been told to go and find “win-win” solutions, avoid the zero-sum game; why does this so often not happen?

# Negotiations gone bad

- Negotiations go bad when “their tribe” is perceived as being underhanded, out to get us, evil.
  - i.e. their values and objectives are different from ours
- Sometimes one or both parties actually is trying to “get” the other. We are very good at sensing this, and we tend to err on the safe side: the elephant will assume the other guy is evil until he gets good evidence that he is not
- If we want to have negotiations that don’t descend into tribal warfare, we need to engage the rider and control the elephant

# The First Key to Negotiations: Facts

- Discuss the Facts
  - Often, a disagreement is simply about a different interpretation of the facts. If we focus very hard on uncovering and discussing ONLY the facts, our system 2 gets engaged (remember its lazy, so you have to work hard at it);
  - If you do this, two things happen
    - The process breeds trust between the parties
    - The facts speak for themselves and a solution often pops out
- Simply put this as the first item on the agenda and work until all the facts are on the table and understood and agreed by all parties

# The Second Key: Objectives

- Before you go into a negotiation, work hard at understanding what your own objectives are
  - You want to achieve these objectives; not “win”, not “beat the other guys”.....
- Tell the other guys what your objectives are; if they aren't underhand, there is no harm in doing this
- Get the other guys to explain their objectives to you and work hard to understand them
- This is the only way to jointly develop a non zero-sum outcome
- Longer term objectives are often a good way to create win-win opportunities out of short term zero-sum conflicts

# The Third Key: Values

- Make peace with the fact that the other guy has objectives that are different from yours
- This doesn't necessarily make them evil
- AVOID discussing values
- DO NOT state objectives (yours or theirs) in terms of values
- The elephant takes values very seriously; wars are fought over them.

# Quit While You're Ahead

- If you do these things
  - Understand the facts
  - Understand both sides' objectives
  - Avoid making value judgments
  - Work hard at finding a solution
- Then one of two things will happen
  - You will jointly find an acceptable outcome
  - Or, you won't
- This is the time to stop
  - If a solution cannot be found with this approach, then these two parties do not have the basis for an agreement; find another party to do business with, escalate to higher management, or hire a lawyer
  - It is sometimes possible to agree to disagree; put the issue aside, finish the project and then take the issue to mediation or the courts

# Conclusions

- Management of teams is hard; harder than driving a car
  - We are complex beings, and the logical part of us isn't automatically in control
  - We need to understand the science behind how people behave and apply that knowledge if we are to be managers not tribal warlords
- Happy teams are made up of happy elephants with happy riders
  - Flow
  - Autonomy, mastery and purpose
  - Growth
- The elephant is good at many things, but very poor at others, such as statistics, economics, long division, risk management
  - The only way to ensure logic prevails is to establish written down, logical processes, based on actual knowledge, and follow them
- To avoid warfare with other groups, focus on facts and objectives, not values; even better, make them part of your tribe

# Further Reading

- Jonathan Haidt
- Daniel Kahneman
- Martin Seligman
- Daniel Pink
- Joshua Greene
- Dan Gilbert
- Dan Ariely
  - These are accessible but credible sources whose works are easily obtained; their bibliographies will lead you deeper