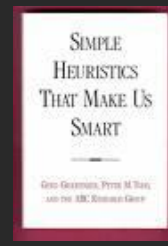
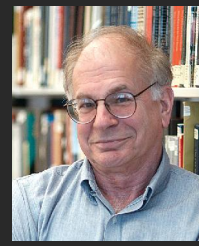


Voted 'Top Presentation at the 2005 International Conference on CI and Innovation'



# THE SCIENCE OF CHANGE —

## HOW TO GET RID OF THE CHANGE MYTHS THAT BEDEVIL EXECUTION

BY DR BERTIE DU PLESSIS

### ABSTRACT

The market is inundated with 'feel good' opinions on the culture of change and innovation. Only if we understand what the real resistance to innovation in its broadest sense is, can we lead and manage for competition and change. We are today fortunate that a number of disciplines point in exactly the same direction. These are: The new discipline of evolutionary psychology, the new science of the psychology of financial behavior, contemporary genetic research, traditional marketing psychographics, empirical evidence from direct marketing and received historical wisdom. We can save ourselves and our organizations a lot of pain and money, if we accept this clear lesson and act accordingly.

Top from left to right: Bertie du Plessis interviewed by *SakeBeeld* for a feature on MindPilot's entrepreneurial success story. With Dr Frederick van Zyl Slabbert on the podium at the International Conference on CI and Innovation. Daniel Kahneman, Nobel Prize winner in economics for 2003 who has become one of the most cited authors in behavioural sciences. The cover of one of Gerd Gigerenzer's publications. Gigerenzer's and Nobel Prize winner, Herbert Simon's ideas formed the basis for Gladwell's bestseller, *Blink*.

Du Plessis has been a guest lecturer or lecturer in six different disciplines at South African tertiary institutions. He offers an elective, 'Imagination for the business mind' at Gordon Institute of Business Sciences' MBA programme. Du Plessis is a professional artist whose work is represented in public and private collections in South Africa, the USA, Canada and the UK. He founded MindPilot Marketing Strategists in 1995. Bertie du Plessis is the author of *Back to Basics: Strategy*.

**T**he words of the sixteenth century social philosopher, the first fully secular analyst of human society, have lost little of their keen acumen since they were first published posthumously in 1532. They are worth repeating extensively:

'And one should bear in mind that there is nothing more difficult to execute, nor more dubious of success, nor more dangerous to administer than to introduce a new order of things; for he who introduces it has all those who profit from the old order as his enemies, and he has only lukewarm allies in all those who might profit from the new. This lukewarmness partly stems from fear of their adversaries, who have the law on their side, and partly from skepticism of men, who do not truly believe in new things unless they have actually had personal experience of them. Therefore, it happens that whenever those who are enemies have the chance to attack, they do so enthusiastically, whereas those others defend hesitantly, so that they, together with the prince, are in danger (Niccolò Machiavelli, 1998:21-22).'

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When Machiavelli wrote *Il Principe*, military conquest and political intrigue were the drivers of change, today change is driven by the forces of technology, globalization, mergers, acquisitions, political transformation and leadership succession that unleash wave upon wave of change in organizations. The fickleness and untrustworthiness, though, of change agents in organizations have remained a constant.

The frequency of change projects in the modern global economy and the importance of their success for corporate competitiveness and survival, make cooperation or at least compliance from employees crucially important.

Those who resist changing their old habits and who are averse to innovation are therefore viewed as the enemies, the fifth columns in our organizations. No wonder then that they are branded as backward and recalcitrant, if not down and outright stupid (see the popular bestseller, *Who moved my cheese?* Johnson 1999).

But consider the following:

1. Is this true? Is being resistant to change and innovation a behavioral aberration?
2. How deeply and widespread is resistance embedded in human behavior?
3. If resistance to change is not a behavioral aberration, how will it change our attitude to those in our organizations who resist?
4. Can we alter individuals' propensity to change?
5. Is there a scientific way to persuade people to change? Can we design change programs scientifically?

I came quite by accident to large organizational change projects from a marketing environment, rather than from the field of organizational development, when our company was asked to devise persuasive communication strategies and products for some large South African financial, petrochemical and media organizations. These projects were driven by cultural change because of a change in leadership, by new technology and by political transformation.

It quickly became evident to me that the disciplines of organizational development (seated in the human resources function of organizations) and marketing were divided by a deep chasm, although both purported to deal with influencing human behavior.

I also developed some sympathy for the executives and managers who had to drive the change. Where could they find guidance? A cursory glance at the available literature showed a wide variety in which 'feel good,' scientifically unsubstantiated notions abounded (see as an example of many others Joseph

Jaworski, *Synchronicity* 1998, or even Peter Senge, *The fifth discipline*). How could these managers choose between the different approaches? On what basis would they make decisions on the proposed programs offered to them by their OD specialists?

This paper is a report of a quest to find scientific foundations for change leadership and management in organizations.

Let us begin with the second of the five questions outlined above.

### HOW PERVASIVE IS RESISTANCE TO CHANGE?

If we look from a marketing perspective at campaigns for products or services aimed at the 'outside world,' that is the general consumer market, we know what to expect. After all, the distribution of individuals, from keen on innovation to totally adverse or simply oblivious to the new, is part and parcel of 'Marketing 101' (Schiffman & Kanuk 1997: 539).

Let us refresh our memories:

1	<b>Innovators</b>	<b>2.5%</b>
2	<b>Early Adopters</b>	<b>13.5%</b>
3	<b>Early Majority</b>	<b>34%</b>
4	<b>Late Majority</b>	<b>34%</b>
5	<b>Laggards</b>	<b>16%</b>

Every new product brought to market is plotted according to the demographics of this table which hundreds of thousands, if not millions of freshman marketing students learn each year. Innovators are those that will accept anything new simply because it is new. Early Adopters first want to see before they buy, but will quickly climb on the bandwagon. Early users will still join on the upward of the s-curve towards market maturity and so on. The Laggards will only join once the technology is completely mature and on the way out.

The figures are either disturbing or encouraging, depending on the perspective. To launch a new product successfully you initially need only 50% of the population (or at least 50% of the population will initially resist your new product). Schiffman and Kanuk (1997:540) point out that this table deal with those that will eventually adopt the new technology/product/service and excludes those that will never adopt. The real figures will therefore even be worse.

Of course we must assume that these numbers will be skewed in organizations depending on the type of

organization (manufacturing, knowledge workers, etc.) And in small organizations the sample would not be representative.

By and large however, in big organizations, we could expect that the workforce would mirror the demographics of the general population. After all it is the same people who buy milk, mobile phones, ipods and dishwashers, motor cars and end of year holidays, who will 'buy' new corporate IT 'products,' systems and policies.

If resistance to change is so deeply embedded across such a wide proportion of the population, it means that we should take resistance to change and innovation much more seriously and change our view of individuals who resist change and innovation.

### **IS RESISTANCE TO CHANGE A BEHAVIORAL ABERRATION?**

Resistance to change may be pervasive, even more pervasive than we thought, but does this mean that resistance to change is normal behavior? It could, after all, be pervasive and still be aberrant behavior.

Let us consider our Marketing 101 table one more time. What is curious about this table is the 50% change resistant individuals. It begs the question: If innovative behavior had been such a huge competitive advantage as we have been lead to believe by modern media an organizational hype, how have such a large portion of the population managed to survive on an evolutionary time scale?

Enter Gerd Gigerenzer (Head of the Max Planck Institute for Human Sciences in Berlin). Gigerenzer is one of the main proponents of the discipline of 'bounded rationality' (see also Gigerenzer 1999), a discipline that aims at explaining and giving guidelines for real world decision making under time constraints. Within bounded rationality, heuristic decision-making is an important feature.

Gigerenzer teamed up with an evolutionary psychologist, Peter Todd in researching a specific application of heuristic decision-making (Recognition Heuristic). The conclusion, reported in (Brown 1999, p32-35) is that, from an evolutionary perspective it is a safer long-term strategy to choose the familiar option, rather than the novel.

Todd (1999:33) is quoted:

'...given Dr Seuss's famous menu of green eggs and ham, most people would opt for the ham. By choosing the "familiar" as the only cue worth considering, you get your calories

without wasting time trying to discover whether eggs are edible. Brown rats follow the same strategy, preferring foods that they have smelt on the breath of other rats. But the Recognition heuristic doesn't work only with food. Imagine you are a Stone Age man choosing a hunting party or a computer-age woman looking for business partners. Chances are you'll pick people you know, or have heard are good. The benefits are obvious.'

How does this relate to the larger framework of the most comprehensive theory on successful competitive behavior yet developed, Darwinian natural selection? The argument of *Origin of species* convincingly demonstrates that evolving too slow or too fast proves fatal to survival. It is all about the timing of the adaptation. Consider the following paragraph (Darwin 2004:155):

'Finally, I believe that many lowly organized forms now exist throughout the world, from various causes. In some cases variations or individual differences of favorable nature may never have arisen for natural selection to act on and accumulate...But the main cause lies in the fact that under very simple conditions of life a high organization would be of no service -- possibly would be of actual disservice, as being of a more delicate nature, and more liable to be put out of order and injured.'

To emphasize the point with an analogy, sophisticated industrial machinery developed for first world environments and requiring specialized support, tend quickly to wear out and break down in harsh third world rural conditions.

The negative effects of both changing too slowly or too quickly would go a long way to explain the fifty-fifty division between the more innovatively minded and the change resistant individuals in the general population (according to our table from Marketing 101). You would expect that in the long haul, over evolutionary time scales, making the right (or the wrong decision) in a specific situation to adapt would distribute evenly between either too early or too late. Thus there would be an equal measure of slow innovators and eager innovators in the population.

The point, though, is that those who are change skeptical, as Gigerenzer and Todd have demonstrated, follow a long (and on evolutionary time scales) prudent survival strategy. Whatever else they are, backward and stupid they are not. Thus we have answered

the first of the five questions posed in our introduction.

### **CAN WE ALTER THE INDIVIDUAL'S PROPENSITY TO CHANGE?**

While it should now be quite clear that our change focused culture (and rightly so focused, seeing how quickly and continuously technological change alters the landscape) should not view resistance to change as a deviant form of behavior, the question remains: Are some individuals by their very nature hesitant to change or are we dealing with conditioned behavior. Our short excursus on classical Darwinism and its relations to the Marketing 101 table of adopters already indicated the way. There should be some genetic base for pro and anti change dispositions.

We find further proof and nuance in the explosion of genetic research over the past couple of years which is already tentatively showing us the possible answer to our question. In 2002 a team led by Robert Moyzis (like Peter Todd and evolutionary psychologist) at the University of California in 2002 related (Carter, 2003:34) that the long form of the gene DRD4 probably arose around 40,000 years ago. Apparently it spread rapidly through the human population, because novelty seekers were more likely to have multiple sexual partners. It might be that the radical technological advances of 40,000 years ago might be linked to the spread of the gene.

Moyzis research (first published in the *Proceedings of the National Academy of Sciences* (19) 2002:309) is quoted in the NewScientist article (Carter 2003 30-35) within the context of the emerging attempt to construct a model of personality on a genetic basis (as opposed to the psychological personality models such as the widely used Meyers-Briggs). Novelty seeking is one of five factors isolated as features of a genetic model of personality (the others being: neuroticism, extroversion, agreeableness, conscientiousness).

Carter (2003:35) stresses how weak and controversial these findings still are, but the indicators are clearly emerging. There is a genetic basis for novelty seeking, as there is a genetic basis for neuroticism.

If this is true, we cannot simply retrain people to become optimistic, change embracing 'happy camper' innovators. The human 'resources' are to a large extent (if we believe our Marketing 101 table to the extent of 50%) inherently adverse to innovative behavior.

### **HOW SHOULD WE CHANGE OUR ATTITUDE TOWARDS THOSE THAT RESIST CHANGE?**

Within our change focused organizational cultures, as we have pointed out, it is those that are resistant to change that are branded as uncooperative, backward or stupid.

But let us, for a moment, return to the astute observer from the Renaissance. Once again it is worthwhile quoting fully:

'Princes, and especially those who are new, have discovered more loyalty and more utility in those men who, at the beginning of their rule, were considered suspect than those who were first trusted... And considering carefully the reason for this, with the examples taken from antiquity and from modern times, it will be seen that he can more easily win friends for himself from among those men who were content with the preceding state, and therefore were his enemies, than from those who, since they were not satisfied with it, became his allies and helped him to occupy it (Machiavelli 1984:71-72).'

Machiavelli here predates by some six centuries the exegesis of the 'Innovator' category in the Marketing 101 table of pro innovative distribution among the general population.

The 2,5% innovators are of little use. They are prone to be socially poorly integrated in their communities and are therefore not successful agents of change (the typical 'techie' with poor communication skills). The crucial category is the Early Adopters (Shiffman & Kanuk 1997:539) because they are 'more integrated into the local social system; the persons to check with before adopting a new idea...'

Thus not all those eager to accept change in our organizations are good candidates for enduring change. Some of the change resisters are better candidates for long-term cultural changes. In our eagerness to get our programs off the ground and complete them successfully we may choose the wrong champions.

In any case the lines between the 'good guys' and the 'bad guys' are blurred from a change perspective and we cannot judge on the face value of early support or denial.

### **HOW TO GET PEOPLE TO ADAPT?**

We now turn to the work of 2002 Nobel Prize laureate Daniel Kahneman and his co-researcher Amos Tversky.

Let's look at Kahneman and Tversky's contributions which demonstrate through empirical observation and experimentation how humans behave when confronted with financial risk. We will make our deductions regarding change/innovation as behavior entailing risk. Their research is available in extensive publications. (Kahneman D and Tversky A 1979).

Daniel Kahneman, with Amos Tversky founded what they called Prospect Theory, and what quickly developed into the discipline of the psychology of financial behavior. The gist of the theory, as far as it impacts on our theme, is easily accessible in Kahneman's interview with Michael Schrage in the Booz Allen Hamilton journal Strategy + Business (2003: 121-126).

Kahneman's and Tversky's point is that we are not risk averse as such. Rather, we have a propensity for risk if and when we are confronted with the threat of loss. They devised numerous experiments to demonstrate this point. Their experiments show how the participants will accept the same mathematical risk when confronted with the threat of loss which they had previously declined when there was merely the promise of reward. It is not so much that people hate uncertainty, it is that they hate losing.

This conclusion impacts on human motivation. According to Kahneman we are motivated twice as much by the fear of loss than by the promise of reward (BBC Nobel Laureate Interview, December 2002). Tversky had formulated it earlier (1990:75):

'Probably the most significant and pervasive characteristic of the human pleasure machine is that people are much more sensitive to negative than to positive stimuli...think about how well you feel today, and then try to imagine how much better you *could* feel...there are a few things that will make you feel better, but the number of things that would make you feel worse is unbounded.'

The assumption for our argument is that change entails risk, because outcomes are uncertain.

Ergo: If change entails risk, then getting people to change behavior will be twice as effective if the threat of loss is made explicit.

Of course, Nobel Laureates have been known to have been wrong. Science progress and theories are overturned.

Support, though, for these conclusions of Kahneman and Tversky come from an interesting non academic, but experientially well proven source.

We are talking about the discipline of direct mailing. It's an unforgiving discipline which is perfectly measurable. Now, here in the world of Reader's Digest letters and promises, let us compare two different endings to such letters:

Option A: 'Please remember to enter this competition and win the holiday of a lifetime.'

Option B: 'Don't miss the holiday of a lifetime, please remember to enter!'

The pull of option B is substantially stronger (Mills: 2000, p128)

The point is: Given the pervasive demographical distribution of people who are adverse to change, and the fact that this change aversion is not merely culturally (environmentally, 'nurture') conditioned, but seems to have a strong genetic base, the balance sheet of loss and reward should be clearly drawn.

The threat of loss is twice as powerful as the promise of reward in getting people to accept risk (that is change perceived as risk). Promise of reward should remain part of the equation.

In modern organizations where potential threats are limited (for instance the threat of losing a job for non compliance) the challenge of getting people to change is translated into a communication challenge.

We have better chances of being successful, the more effectively we communicate that people will suffer more *if they do not accept change than if they accept change.* A classic example comes from recent South African politics.

When, in the advent to a democratic South Africa, Nobel Peace Laureate, F W de Klerk, experienced resistance from within the white community, he called out a referendum (1993).

The campaign was run along the following leitmotif: 'If we remain as we are, we will lose everything we have. If you take the risk of voting 'yes,' I am optimistic that we will lose much less in the long run.'

The result is history. De Klerk got a resounding victory

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## CONCLUSIONS

Rarely in the field of human behavior do we see such convergence as on these issues:

- Evolutionary psychology
- Classic Darwinism
- Genetic research
- Marketing science
- Experiments in the psychology of financial behavior (Prospect Theory)
- Direct marketing experience
- Conventional wisdom...

...all point in the same direction.

We can now sketch the principles for change leadership and management:

1. Resistance to change is natural. It is the result of long-term successful evolutionary strategies and probably has a genetic base.
2. Resistance to change is widespread, at least 50% in the general population seems to be resistant to adopting new products or services. This number would reflect in large organizations. It is important to note (although we have only anecdotal evidence) that technological innovators seem to be adverse to embracing procedural innovation.
3. It is not prudent or effective to demonize those that are change resistant. Accept this as a fact of life and treat these people with respect by acknowledging that they represent a successful evolutionary gambit and act according to their nature.
4. It is in fact prudent to be more skeptical of those that are initially very keen on change.
5. Some initial resisters may be very good long-term prospects for a culture of change and innovation.
6. Threat is an indispensable ingredient of change cultures. High performance, competitive cultures need an ingredient of 'The enemy at the gates.'
7. It is naïve to think that you can move people by only being optimistic.
8. Communicate threats of loss clearly and continuously.
9. Communicate the rewards of risk continuously and vividly
10. Be optimistic about success.
11. It is all about continuous communication. The classic leitmotif is: 'If we remain as we are, we will lose more than what we risk by changing. I am positive that in the end we will succeed if we take this course of action!

Good, natural leaders and managers will recognize a lot here of what they have always known and practiced. At least now they know that there is a sound scientific basis for their conduct. Lastly, we have, or should have clear guidelines to judge literature on the change behavior.

What remains is to develop strategy into operational plans and tactical roll-outs.

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