People for a New Beginning.
Innovation: It Relies on People

Ian Plowman, Brisbane
Email: ian@plowman.com.au

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Part 1: Innovation: Why We Can't

Whilst considerable investment has been made in research intended to improve industry practices, the extent of practice change sometimes falls short. Less research has been conducted in understanding why change is so difficult to implement.

Agriculture has a long history of research into improving production systems. More recently, attention is also being paid to value chains beyond the farm gate. Yet every production system and value chain is first and foremost a social system, comprised of people with individual and collective behaviours. In this neglected arena lies the potential for greatest gains, socially, economically and environmentally.

The paper will explain why people tend to be naturally conservative and resistant to change. Based on the simple premise that **we cannot manage what we do not understand**, the intent of the paper is to suggest new behaviour that will help overcome this unconscious conservatism.

Sources of Behaviour and Individual Difference.

All humans are similar to each other. Most of us have two arms, a head and a heartbeat. Yet our differences are far more interesting. And those differences are important in aiding human survival. Central to this paper are the patterns of similarity and the patterns of difference and the reason for those patterns. These patterns throw light on our ability or otherwise to embrace change. These patterns occur within and between individuals; they occur within and between groups.

Genetics as a determinant of behaviour and individual difference

Human beings are small-tribe animals. For over 100,000 years we have roamed the earth in small bands. The characteristics that we possess today are the characteristics that equip us to be effective hunter-gathers. Though humans settled into more agrarian and urban lifestyles in the last 10,000 years, that period of time is too short for natural selection to have changed any of our individual or collective characteristics (Nicholson 1998).

The secret of natural selection is to avoid extinction. Any characteristic that does not aid survival is not transferred to offspring. Conversely, only those characteristics that favour survival are retained (Buss, 1995; Miller, 1997). Hence, human beings exhibit only a very small variation in genetic characteristics. The human genome project has revealed 99.8% genetic commonality, even between races. And the function of many of those genetic characteristics is to aid survival.

Yet there are genetic differences between people. Because adverse events might occur, nature deliberately provides humans with some small level of random genetic variation. That variation will aid or inhibit survival, dependent upon circumstances. One can imagine a context in which being slender and fast on one's feet might aid survival, yet is a different context might lead to starvation.

There are also genetically mediated differences within people. Each of us carry two forms of generalised intelligence. Fluid intelligence is the capacity to learn stuff; crystallized intelligence is the capacity to know stuff. When we are young we have lots of the former and little of the latter. As we mature, the proportions change. Hence older people know lots of stuff, though it takes much more effort to learn new stuff.

One of the consequences of this is that we respect our elders for their wisdom, and those elders expect to be respected. After all, someone who has lived for four decades has accumulated lots of wisdom of interest to those that also aspire to live that long. The wisdom of the elders has helped in humanity's survival for 90,000 years. Yet that wisdom is predicated upon the external environment being relatively stable, and the wisdom therefore being relevant. However, the present rapid rates of change tend to render the wisdom of the elders as increasingly problematic.

Another consequence is that as we age, we are increasingly risk averse. Young people are resilient and can bounce after a set-back. Older people have less recovery time and less recovery energy. Therefore as an industry ages, and in particular, as its leadership ages, it becomes increasingly conservative and increasingly unable to be flexible.

Key Learning: There are genetically mediated individual differences within and between people, differences which aid species survival. A critical characteristic of these strategies is that they are instinctive and unconscious. For example, in a rapidly changing world, the wisdom of the elders might be less relevant than it was in the past. Yet we instinctively defer to it.

Recommendation 1: That older members of the industry, who may regard themselves as knowledgeable and who may gravitate to positions of leadership, be partnered with younger members to ensure that appropriate knowledge and competence can be brought to contemporary issues.

Formative years as a determinant of individual difference

The human child is born with its brain only partially developed (Pinker, 1997). During developmental years, our brains adapt us to our particular surroundings. One of the adaptation techniques that has evolved is *niche differentiation*. Another is *motives.*

(i) Niche Differentiation

All human beings are born into the world with genetic characteristics and potential individual characteristics. How those individual characteristics develop is a function of the interaction between the environment into which the organism is born and the genetic potential characteristics the organism brings - the nature/nurture interaction (Plomin & Daniels, 1987).

A human baby arrives into the world instinctively wishing to survive. It quickly realizes that resources for survival come from parents, and so learns to manipulate the nature of interactions with parents to maximise resource flows. Whatever parental investment is available, the newborn wants 100% of it. One way of maximising resources is to choose an ecological niche, a set of characteristics in the

organism that maximises its fit with the external environment while at the same time minimising direct competition with others that share the same environment. For humans, the major competitors for scarce resources are parents and other siblings.

For infants, providers of scarce resources are parents, while siblings are direct competitors only. Therefore, in order to maximise resource flow and minimise competition, offspring differentiate. As a result, full biological siblings are not similar. In fact, considering personality, two children from within the same family are as different from each other as any two children chosen at random (Plomin & Daniels, 1987). Research finds that up to 45% of differences in personality are attributable to the different experiences of each sibling. Up to 90% of those different sibling experiences occur within the family. Further, those differences are enduring, remaining evident throughout adulthood (Sulloway, 1996).

Patterns of differentiation between siblings are not random. In fact, underwritten by some genetic script, patterns of difference within families form patterns of similarity between families.

Eldest children are generally more conscientious and seek parental favour through acting as surrogate parents toward younger siblings. They are commonly more responsible, conservative, and defensive. As adults, this conservatism is a product of wanting to retain or obtain the same or similar environments they experienced as a child. For example, among primary producers, it is commonly the first born who expects to be a farmer, an unconscious psychological expectation reciprocated by parents and resulting in primogeniture, the Western practice of land ownership passing to the first born. In consequence, first borns are more sceptical of and resistant to change than are their younger siblings. However, they are also commonly ambitious and materialistic, and often gravitate to leadership positions. In an effort to please their parents, they often excel academically, sometimes thereby opening up career opportunities that might take them away from the farm.

Middle children have broader interests, lower self-esteem and tend to be more independent, innovative, and risk tolerant. The radicalism of middle children is reflected in them, as youths and adults, finding their ecological niche by moving away from their environment of origin. Unlike older siblings with much to lose and little to gain, middle children have everything to gain and nothing to lose through embracing change. Middle children are less likely to be found in mature multigenerational industries (since they leave), and more likely to be found in fledgling ones (which they start), where established practice either doesn't exist or is there to be tested and varied.

Youngest siblings are commonly less ambitious, less conscientious, and more socially oriented. They are sometimes described as popular, easy going, lazy or spoilt. As adults, they frequently possess excellent interpersonal skills, but are commonly less "driven" than older siblings, often "cruising through life" in a carefree way, expecting, and frequently receiving, support from others, particularly parents. With less ambition than their older siblings, career choices for the youngest are less obvious, sometimes resulting in them choosing to do nothing. In consequence, when their older siblings have left, staying on the farm can be a default option.

The concept of birth order as a shaper of personality is misleading, since it is a proxy for a more important but invisible phenomenon - niche differentiation. We are all born with a set of potential strategies (potential personalities, if you will) for dealing with the world. Our formative years' experience evokes a workable strategy. The important point here is that *each sibling will establish a niche that differentiates it from other siblings*. The niche chosen is sometimes, though not always, predictable by birth order.

Birth order niche differentiation has important implications for willingness to initiate or embrace change. Research into the 23 major shifts in scientific thinking between the 15th and 20th Centuries revealed that those who were the keepers of the prevailing wisdom were overwhelmingly the only children or the oldest in their families whilst those who challenged them and created new wisdom were overwhelmingly laterborns. The statistical probability of this finding being a fluke, given the database of 3,800 scientists, is less than a billion to one!! (Sulloway, 1996). It is the role of the oldest to protect the status quo, while it is the role of younger siblings to explore, challenge and invent the new.

Key Learning: As well as genetics, formative year experiences are also a source of individual differences and are also an aid to survival. They have implications for willingness or otherwise to embrace change. Those who leave the establishment are also often those with a propensity to risk and a willingness to initiate new industries and new practices. In contrast, those who naturally gravitate to positions of leadership in the industry might unconsciously also be the most conservative. Further, those most likely to inherit the farm may be those least able to bring in creative ideas.

Recommendation 2: It is recommended that the cotton industry adopt a strategy of diversity by deliberately including 'mavericks' in all levels of governance, people with the capacity to think outside the square and the willingness to challenge conventional wisdom. These same people should be encouraged to take up positions of leadership, a responsibility they are unlikely to seek. Further, those who gravitate naturally and willingly to positions of leadership should not necessarily be encouraged.

(ii) Human Motives

Human behaviour is driven by *motives.* Motives explain *why* we do what we do and are largely unconscious. Three social motives that have been extensively studied are *need for affiliation*, *need for achievement*, and *need for power* (McClelland, 1987). Need for achievement can be further subdivided into *achievement via conformity* and *achievement via independence.*

Plowman (2005) confirmed that motives establish during formative years as one of the strategies of niche differentiation. That research confirmed *need for power* is most common in first-borns. It also suggested that *need for achievement via conformity* is highest in the eldest, *need for achievement via independence* is highest in middle-borns, and *need for affiliation* is highest in the youngest.

Though established in formative years, motives continue through adult life, influencing the choice of occupations and societal roles (Plowman, 2005). Those with a high need for affiliation seek roles where they can experience mateship; those with a high need for achievement seek individually challenging but achievable tasks, seeking feedback on their efforts; those with a high need for power seek roles that involve influencing others whilst attracting status and prestige. Research has demonstrated that social groups under the guidance of a leader with a high need for power show less creative capacity to solve problems. Need for power commonly correlates with conservatism.

Key Learning: Motives developed during formative years are unconscious and are also highly resistant to more recent influences. Creative people and those with an entrepreneurial bent are likely to be driven by achievement via independence. As the cotton industry matures into a second generation industry, those at the helm of industry structures are less likely to be driven by achievement via independence, and more likely to be motivated by achievement via conformity and need for power, both of which serve to maintain the status quo and inhibit creativity.

Recommendation 3: Since motives have implications for willingness or otherwise to embrace change, it is recommended that the cotton industry adopt a strategy of populating its systems of

governance with people driven by a need for achievement via independence. At the same time, any new projects should be shielded, for at least the first half of their developmental life, from those driven by a need for achievement via conformity and need for power.

Contemporary influences as a determinant of behaviour and individual difference

The third of the four determinants of behaviour is *contemporary society*. People quickly pick up social mannerisms when they relocate between countries or cultures. "When in Rome, do as the Romans do." Accents are an obvious example. We acquire them unconsciously in order to fit in. The need for acceptance, for not being too different (in other words the 'need for affiliation') is prewired within us, strongly influencing the second and third determinants of behaviour.

How people behave within a particular social group is known as *culture*. Whilst accents are an obvious example, less obvious are the shared practices and shared belief systems that shape how members of a social group view their world.

And yet people are not equally influenced by their peers. There are individual differences here too. As Rogers (1995) has argued, only a small proportion of people, about 3%, known as *innovators*, are independent-minded and cosmopolitan enough to follow their own creative beliefs; about 13% , known as *early adopters*, or opinion leaders, pay attention to the independent innovators and give legitimacy to new ideas; about 34%, known as the *early majority* are influenced by the opinion leaders; another 34%, known as the *late majority*, are influenced by their peers; whilst a final 16%, the *laggards* or non-adopters, are socially isolated and get left behind.

If people in the cotton industry, particularly its decision makers, interact more frequently with people from within the industry than with those outside it, then they are increasingly likely to have their prevailing views confirmed and their biases reinforced rather than having them challenged.

Key Learning: Cultural norms are invisible yet have the effect of maintaining the status quo. Any change has cultural consequences and therefore may be fiercely, even unconsciously, resisted by those negatively affected.

Recommendation 4: Since cultural norms and other contemporary influences are unconsciously maintaining the status quo, then change efforts that do not take them into account are destined to fail. One way of avoiding this failure is to adopt an R&D strategy of force field analysis, thereby identifying all of those cultural forces that will be negatively influenced by the proposed change and which will therefore resist it. Change is more easily influenced by working on the less apparent restraining forces than on the more apparent driving forces. Another way of identifying issues to which cotton industry insiders might be blind is to deliberately populate decision-bodies with outsiders as well as insiders, people who can fill the role of 'critical friend'.

Creativity as a determinant of behaviour and individual difference

The fourth determinant of behaviour is creativity or innovation - the ability to imagine, construct or do something hitherto unknown. Although the bounds of our creativity are limited by prewiring, by formative years and by contemporary society (technology, for example) we'll never know what those bounds are until we push them.

Behaviours based on the fourth determinant are very fragile. Witness the extent, in normal discourse, to which suggestions are tentative and easily dissuaded. The conservatism of the human species (anchored to prewiring, formative years, and contemporary society) attests to the extent to which creativity is not a strong behavioural determinant.

Yet it might be argued that all change ultimately fits into this fourth determinant, doing or thinking something hitherto unknown. Therefore all change challenges the status quo. And the conservative forces of the status quo, embedded in genes, in formative years, and in contemporary society, are strong indeed.

Plowman (2005) invited 379 siblings, each from families of three adult siblings, to provide adjectives that described each sibling accurately yet differentiated it from other siblings. The word 'creative' was offered to describe the middle and last offspring. It was not offered to describe the eldest. Sulloway's (1996) research into paradigm shifts in science, mentioned earlier, supports the point.

Key Learning: People are not equally creative. Further, creative sparks are very fragile and are easily snuffed out.

Recommendation 5: Include in developmental projects people who are perceived as 'mavericks', for new ideas are more likely to come from them. Place them in some form of innovation incubator, where there is shelter from criticism, such shelter being necessary for those creative ideas to gather some momentum before subjecting them to rational critical analysis.

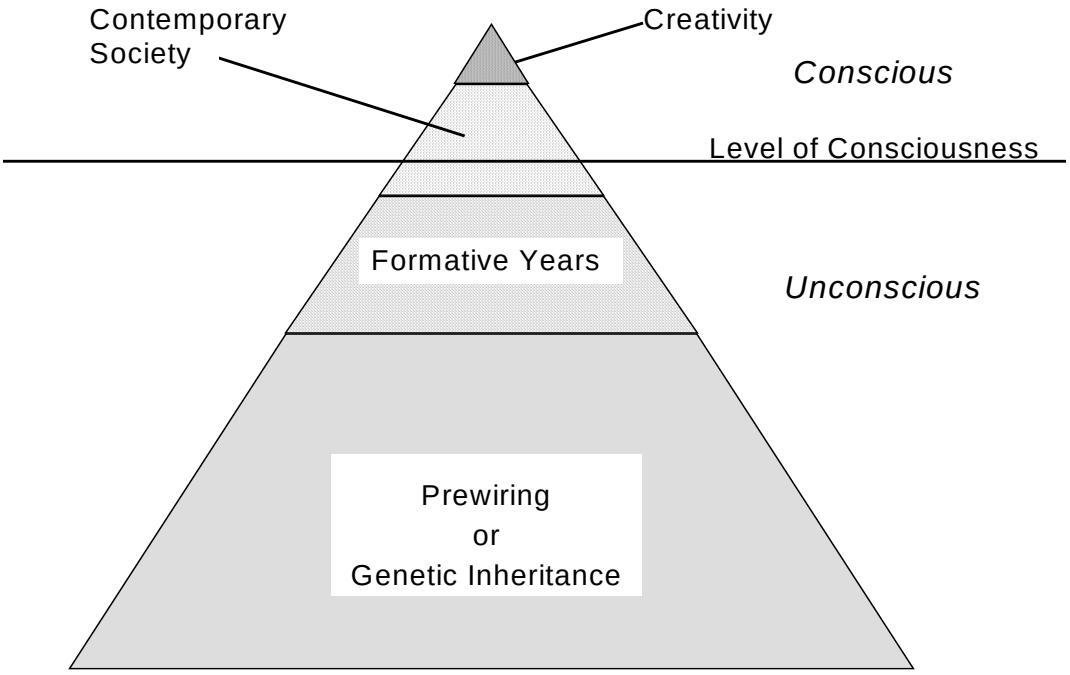
The combined effect of sources of individual difference on capacity to embrace change.

This paper has, so far, explained the sources of individual difference and how those individual differences, as separate components, can embrace or resist change. More important however is the combined effect of these four determinants.

The literature suggests that up to 50% of variability of personality is genetic, and that up to 45% is a product of the environmental influences in our formative years, and the bulk of that occurs within the family (Plomin & Daniels, 1987). Contrary to parental folk law, the influence of parenting practices on individual differences is comparatively small while the perceptual differences of children in relation to siblings is a major contributor to personality (Sulloway, 1996). Note that both of these determinants are largely unconscious. In contrast the influence of contemporary society on personality and behaviour is perhaps 5% to 15% at best. The influence of creativity or new experience is small indeed, perhaps less than 1%. So what makes each of us unique are the four contributors of (i) my genes (up to 50% of my personality, interests and behaviour), (ii) my formative years experience (up to 45% of my personality, interests and behaviour), (iii) societal influences (up to 15%) and (iv) creativity or originality (less that 1%).

All four determinants of behaviour are not independent of each other. Genetics will shape what I can experience in my formative years, and later, as well as how others might influence me. The same applies to the influence of both genetics and formative years upon my contemporary behaviour. Second order effects will impact on all but the first determinant. These unconscious influences on individual and organisational behaviour render impotent much individual and organisational efforts to promote change. Figure 1 illustrates the relationships between the four determinants.

Figure 1: Genetic, developmental, contemporary and creative determinism



The argument being put here is that there are individual differences in capacity to change. Most of these influences are unconscious. Further a change inducing event, new and original for the organism, will only be feasible if consistent with the influences of the other determinants.

To illustrate, learning to use a mobile phone is supported by a natural human predisposition to communicate (genetics), learning to communicate as a child (developmental), seeing other people using mobile phones (contemporary), and discovering for one's self the benefits (new). In contrast, learning to be peaceful in the Middle East is mediated against by the predisposition of young males to run in packs, to be aggressive, and to desire revenge (genetics), childhood experiences of civil mayhem (formative), adult experiences of civil mayhem (contemporary). In this context, the voice of the pacifist is indeed frail. Learning to make peace is very problematic given the other three determinants stacked against it. The reader will readily identify examples in the cotton industry where change has succeeded because of alignment or failed because of misalignment.

Key Learning: The capacity of any individual to embrace change is a function of the alignment or otherwise of the four determinants of behaviour. Further, at a collective level, change will only occur if enough individuals support it.

Recommendation 6: If alignment across determinants influences which creative ideas find favour and which do not, a suggested strategy is to subject new ideas to the 'four determinants' test as part of any critical assessment. Further, individual members of any developmental project team will be more valuable if their personal four determinants are pro-change, rather than conservative.

Mobility Choice

People have mobility choice; to move towards an industry or a location that they find attractive, to stay in an industry or location that is satisfying, or to move away from an industry or location they find unsatisfying. These acts of mobility are not random. So the questions are: Who moves? Who doesn't? And why?

Florida (2002) investigated why certain regions and cities in the USA were thriving whilst others were dying. He found that growth areas had net inflows. People who moved tended to include a higher proportion of young professionals who moved to a location that offered them a diversity of lifestyle interests; not to a location that offered them a job. In response, high tech industries followed the migration of these younger professionals, setting up where there was a desired labour pool. Florida's analysis of the characteristics necessary for a vital thriving learning community is summarized as the three T's: high on *talent* (education), high on *technology*, and high on *tolerance* for diversity. The cosmopolitan nature of such communities gives them the edge.

In his research into sibling differentiation, Sulloway (1996) found that laterborns tend to leave home first and to travel three times more extensively than their older sibling. The notion of mobility, tolerance, talent and technological sophistication also arose in Rogers' (1995) research where he found those characteristics more likely higher up the adaptation curve than further down it.

Plowman, Ashkanasy, Gardner & Letts (2003), investigating the characteristics of innovative towns, found the same phenomena. Towns that were growing were not typified by location, by size, by thriving industry or some other unique advantage. Rather, they had net inflows of educated, technologically sophisticated, entrepreneurial people. And what attracted them? Finding kindred spirits who were tolerant of diversity. In contrast those towns that were not thriving showed an intolerance, thereby chasing away the very creative talent they craved.

Similarly, in research examining innovative primary industry associations (Plowman, Ashkanasy, Gardner & Letts, 2004), the two most innovative demonstrated the three T's found by Florida (2002). This research revealed that the less innovative industries often lost their youngest and brightest to other callings. More importantly, less innovative industries had negligible 'new blood', people coming in from other industries and thereby able to provide an infusion of new ideas. This is particularly an issue for the decision-making bodies within the industry. Further, both Plowman et al, (2004) and Damanpour (1991) stress the importance of freshness in leadership if innovation is to be fostered.

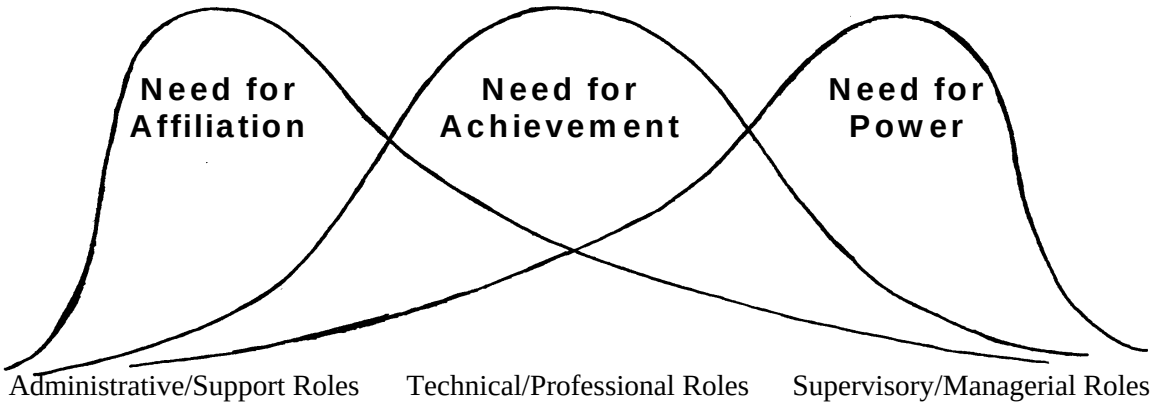
Key Learning: People's mobility choices are not random. People who are more innovative are also more mobile. Industries with net outflows are increasingly more conservative.

Recommendation 7: The cotton industry should explore mechanisms to broaden the experience and expertise available to it. Producers having the capacity to shift to whatever commodity will bring the highest prices is both a strength (broader mindsets) and a weakness (less crop and hence less political and financial clout). More effort may be needed to open up the industry, its governance and its decision processes to those with higher and more diverse levels of professional expertise and experience. In particular, industry decision bodies would benefit from inclusion of people from the arts, from international business, from law, from social science, and from tertiary education, to name a few.

Industry structures and their consequences for innovation

Plowman (2005) found that motive preferences underpinned occupational preferences. As a result, any hierarchical organization might comprise three different motive groups of people, each marching to the beat of a different drum. Figure 2 illustrates:

Figure 2: Probable motive distributions in less innovative organizations



Not only do the three groups differ in their prevailing motive, this difference extends to their language. Table 1 illustrates.

Table 1: The relationship between motive preference and language

Motive	Nature of the language
Affiliation	Subjective, invitational, asking, people oriented "We" (building a relationship)
Achievement	Objective, rational, telling and asking, task oriented. "It" (attention to task)
Power	Subjective (disguised as objective), telling, self-oriented. "I" (drawing attention to self). **Note: No genuine information-seeking**

All primates, humans included, know how to operate co-operatively without any hierarchy, and competitively within hierarchy (Pierce & White, 1999). Which patterns of behaviour is chosen is a function of resource centrality or otherwise. For example, when the cotton industry was young, people depended upon their peers for advice. Note that this is the preferred modus operandi of mavericks, those who pursue achievement via independence. Now that the industry is mature, professional advice is more likely to come from specialist advisors. And the industry organization, supported by centralised budgets, is more likely to be hierarchical. This is the form of organizational structure that mature industries gravitate to, since it is the form most suited to those pursuing achievement via conformity and those with a need for power.

Hierarchies have a particularly interesting communication profile. In a hierarchy, status, influence, power and funds are all bestowed from above. Unconsciously, people in hierarchies are hard-wired (genetics) to pay more attention upwards than downwards. Between hierarchical layers, there is an unconscious propensity to 'ask' upwards, and to 'tell' downwards. In consequence, critical strategic information, known to lower levels in the hierarchy, those closest to operational issues, is often unable to be delivered upwards. Every level of the hierarchy acts unconsciously as a filter, designed to block the upward flow of information.

In consequence, Plowman's (2005) research found that people who occupied senior organizational roles tended to have a distortedly optimistic view of the health of their organization. They tended to be less objective and showed a marked propensity to make statements and inability to ask questions. No questions mean no learning. As a result, senior people, who tend, by virtue of the nature of their role, to rub shoulders more frequently with those who are similar, distance themselves from the field and the critical strategic information available to them.

Note that this characteristic is quite consistent with deference to the elders mentioned earlier. And it would have no negative consequences at all if the external environment was stable. Unfortunately, it no longer is.

When the structure of an industry is comprised of specialist segments, such as growing, ginning, marketing, research, consulting, etc, and those segments tend to meet formally, then the occasion may be of strategic importance to each of the parties. This context may favour those who thrive on need for power and who pursue sectoral interests. The resulting relationships, despite being between parties who depend upon the other for their success, may unconsciously seek to benefit one of the parties at the expense of another and hence at the expense of the industry overall.

Unfortunately, there is an inverse relationship between need for power on the one hand and creativity and collaboration on the other. Genuine inquiry is unlikely to occur, thereby limiting effective problem-solving and solution-finding.

Key Learning: Hierarchical industry structures tend to form into three clusters of personality types, each operating on an unconsciously different mind-set. The separation of these three distinct clusters into different roles renders that structure far less capable than it otherwise might be. Hierarchy blocks upward flows of strategic information. Further, division of an industry into specialist sectors can lead to the pursuit of sectoral interests over and above the interests of the industry overall.

Recommendation 8: It is recommended that those who hold senior positions in industry structures be educated to understand how their unconscious attributes of motives, language and mental models, together with hierarchy itself, can be detrimental to the industry as a whole. Further, it is recommended that they be trained in adopting alternate and more constructive ways of operating, such as those outlined in the latter part of this paper.

In partial summary …..

We cannot manage what we do not understand. The human species is generally conservative, not innovative. As a result, industry structures are also conservative and become increasingly so with each generation. Resistance to change is normal. It is also unconscious. Individual differences between people and the causes of those differences offer a means of understanding resistance to change and, alternatively, a vehicle for consciously and successfully bringing about appropriate change. The cotton

industry will meet with greater success if it adopts a strategy of deliberately taking into account the ideas offered in this paper.

Part 2: Innovation: How we can

The first half of this paper took principles from evolutionary psychology to explain how individual and collective human characteristics combine to unconsciously render industry structures less innovative than they might be.

The second half of the paper takes a more proactive approach, offering ideas at the individual and collective levels designed to improve the health of the cotton industry. The cotton industry, like every other industry, is first and foremost a social system. Social systems are typified by individuals, by small groups, and by larger groups. If social systems are to become more effective, then new behaviours are necessary at each of these levels.

This paper offers the cotton industry ideas for different scales of social systems. It aims to provide futurist thinking, to challenge norms and to be ambitious. Though each of the sets of ideas are described separately, and could be adopted separately, they are all complementary. Used in combination, these suggested ideas have the potential to transform the cotton industry.

Micro-level interventions: Improving our conversations.

As has been argued, most human behaviour is below the level of consciousness. Our social behaviour, in the main, is either instinctive or learned unconsciously. Unfortunately, what we have learned is often sub-optimal for effective relationship-building. For example, no one has ever formally taught us how to engage in effective conversation. Yet conversation, the exchanging of information, the generation of ideas, and the making of decisions, is an essential element of any successful enterprise and industry. In fact, the quality of internal communication is one of the vital characteristics of innovation (Damanpour, 1991). If we could improve, through conscious endeavour, the quality of our conversations, the cotton industry would be better off.

Have you ever attended a meeting or conversation where ….

1. There was no clear agenda or where people did not stick to it,
2. People waffled or got off track,
3. Where one or two people dominated while quieter people said nothing,
4. Where decisions did not get made, or were made without considering all information,
5. Where you really wondered if you wanted to attend the next meeting, given that you had better things to do with your time?

These experiences are common and result in groups self-destructing, despite a great reason for being.

Now imagine a meeting where the following occurs:

1. We begin with a clear focussing question so that everyone is clear why we are here.
2. We know how long we have for our conversation, we understand how we are going to work together, and we have introduced ourselves to each other, in small groups.

3. We all have an opportunity to think and take notes before talking begins. In fact, throughout our meeting, there is just as much quiet thinking as there is talking. Throughout the meeting, this pattern of thinking, writing, then talking is repeated over and over.
4. Only one person talks at a time while others listen actively. Nobody interrupts and nobody is long-winded. Regardless of age, gender, seniority or other differences, equality of participation is central. Everybody is respectful of the opinions of others, even when that opinion might differ from ours. There is no need for disagreement, voice-raising or other disruptive behaviour.
5. Ideas that are shared get written up where we can all see them. That way, we are saved the burden of having to remember lots of ideas.
6. Decisions are made in a fashion that is democratic and transparent. The decision process is fast, efficient and non-adversarial.
7. The decisions represent the pooled wisdom of everyone. Consequently, whatever idea(s) we decide upon, nobody can remember who suggested it, and it doesn't matter. People are collectively committed to the decisions we have just made.
8. Proposed actions, responsibilities and time lines are clear.
9. Participants enjoy the process, appreciate the opportunity to contribute and be listened to as equals, and look forward to participate in the next meeting.

Yes, this is possibly quite different from what you may have experienced. And yes, it works - beautifully. Everybody has their say, nobody disagrees with anybody and all options are explored before rational decisions are made. The processes are fun, efficient and build good relationships, being respectful of everyone, regardless of age, gender, ethnicity, or experience. They work effectively in any sized group, from three people to three hundred. Called 'Meetings without Discussion' (MWD) (Plowman, 2007), this processes work for any purposeful conversation, whether that conversation occurs in an organization, club, association, or community. MWD owes its origins to the doctoral research of the author of this paper (Plowman 2005), research which used evolutionary psychology to examine and understand the unconscious blockages to innovation that occur in social groups. MWD is a vehicle for effectively circumventing those unconscious blockages.

In most meetings or conversations, there are two personality types, namely *extraverts* and *introverts*. Extraverts are born under-stimulated and spend the rest of their lives pursuing stimulation. One way extraverts do this is to talk, and that act helps them to think. Extraverts are socially dominant, frequently talking over others. Introverts, in contrast, are born overstimulated and spend the rest of their lives avoiding excessive stimulation. Introverts think before talking and often choose not to talk. Not surprisingly, in most meetings, extraverts take the majority of the airtime. Yet they only make up 40% of the Australian population. Sixty percent of the population are introverts. It seems a trifle unwise not to listen to those good ideas that can come from any participant. MWD provides simple processes that give equality to all of the wisdom, regardless of the personalities from which it comes.

One of the strengths of MWD is having the right voices in the room. As a general rule, conversations that are to lead to decisions that can and will be implemented need to involve the following voices:

1. Those with the authority to permit or block the decision;
2. Those with the necessary professional expertise to advise the decision;
3. Those with the local indigenous knowledge of in-field practicalities;
4. Those with the resources needed to implement any decision;
5. Those with the expressed need, or those who will be the recipients of the consequences of the decision.

When decisions are made in the absence of any of these five groups of people, those decisions are often difficult to implement or maintain. In other words, they are not sustainable.

Sometimes it is necessary to have multiple conversations, say with each of these groups in turn. To avoid anger, disappointment and delay, each of those five groups of constituents need to be willing to be open to the ideas, wishes, and constraints of the other four groups; and to be willing to reconsider any decisions in the light of better knowledge or changing circumstances.

Another of the strengths of MWD is the manner in which decisions are made. Commonly, groups make decisions using one of the following four methods: (1) by exhaustion *("We've talked about this for the last three hours. Let's make a decision so we can all go home!"*); (2) by squeaky wheel ("*Fred Bloggs has been driving us mad with his complaints on this issue. Let's just deal with it, so we can get him off our backs!"*); (3) by social dominance (an individual or sub-group manipulates things to get their way): (4) by supposedly democratic processes such as moving a motion, getting a seconder followed by a show of hands. (Note this process commonly creates winners and losers). Each of these four processes is used throughout society. We use them only because they are the only ones we know. They each commonly result in poor decisions or lack of commitment to support the decision. 'Meetings without Discussion' offers a number of alternate decision protocols that avoid the previous shortcomings, that are fast, that involve all of the wisdom in the room, and which generate high commitment.

The concept of "meetings without discussion" might seem like an impossibility, a contradiction in terms. Once you are exposed to the process, it is hoped that you will regard it as possibly the most effective way to conduct a meeting or conversation, particularly one that is democratic rather than autocratic. If this is too bold a hope, then it will be sufficient for you to be aware that there is another way, one that people who have used it find immensely satisfying.

The skills are very easily acquired. Participants at a 'Meetings without Discussion®' coaching workshop get to practice the skills on topics of their own choosing. Further, every participant receives a workbook/resource kit that contains all of the information needed to take the skills back to your own organization or association. The result for your group will be greater participation, greater commitment, more creativity, more shared responsibility and more fun.

Key Learning: Social interactions in general and conversations in particular are conducted by individuals using behaviours that are largely unconscious. Further, those behaviours, in the aggregate, render the interaction far less effective than it otherwise might be using a number of easily learned and applied processes for dialogue.

Recommendation 9: It is recommended that the cotton industry trial alternate forms of dialogue, such as 'Meetings without Discussion' and then conduct research that compares two otherwise similar industry groups, one of which uses the new dialogue process and one that doesn't. The research should pay attention to (a) the level of participant satisfaction, (b) the willingness to continue to participate, (c) the duration of the meeting, (d) the quality of the information considered, (e) the level of creativity and innovation exhibited, (f) the quality of the decisions made, and (g) the willingness to commit to the implementation of those decisions. It is expected that all of these measures will be more favourable in the experimental group than in the control group.

Meso-level interventions: Improving our governance.

The earlier half of this paper described how hierarchical systems of governance, though common worldwide, can be dysfunctional. The distribution of motives within hierarchy and the subsequent language patterns tend to block information flows, entrenching conservatism, and inhibiting innovation.

There is an alternate system of governance, called *sociocracy*, which retains the benefits of hierarchy, whilst reducing its costs. Whereas 'Meetings without Discussion' applies at a single social level, sociocracy applies at multiple levels. Nevertheless the two approaches are complimentary and each would considerably enhance the other.

Hierarchical systems are comprised of layers of authority arranged in pyramidal fashion, at the top of which sits a CEO or Chair. Sociocracy is also hierarchical, though with some very important differences. It is a method of governance that ensures inclusiveness, accountability and transparency. Developed in Holland in the mid 20th Century, sociocracy is used throughout Europe in a number of large multinational organizations, such as Shell, Heinekin, Phillips, and Pfizzer. Meetings using sociocracy are said to take about 30% less time. The concept has only recently found its way to Australia. Like MWD, sociocracy has been designed to overcome the unconscious dysfunctional effects of hierarchy.

Sociocracy has four organizing principles. They are: (1) circle organization, (2) overlapping circles, (3) decisions by consent, and (4) elections by consent.

1. Circle Organization. The organization's structure is made up of semiautonomous circles (or industry units, such as branches). Within each circle, everyone has equal status. Each voice is heard. Each circle determines its own goals and has the responsibility to execute, measure, and control its own processes. It also decides how it will meet the aims of the organization (or industry) most effectively. Each circle exists within the context of a higher-level circle. No circle is fully autonomous; the needs of its higher-level circles and lower-level circles must be taken into account.

At the highest level, there is a "Top Circle," which is similar to a traditional board of directors, except each member represents a different part of the organization's functional environment: legal/governmental, financial (including investors), cultural, its technical field, workers, and management.

2. Overlapping circles. Circles are connected through a double link: Two or more people are elected by the lower-level circle and one (who has overall accountability for the lower-level circle's results) is chosen by the higher-level circle. Each belongs to and takes part in the decision making of both circles. In this sense, sociocracy differs from conventional hierarchy where a senior person at one level is the representative at the level above. In the case of sociocracy, both the senior person at one level and other two elected people participate at the level above, as well as at their own circle level, and all have equal status and power. Note that each person has equal power within the domain of their own circle and nowhere else (unless they are a member of another circle, which they could be by being a leader or a representative). Note also how the concept of overlapping circles is similar to the MWD concept of having all of the voices in the room.

3. Decisions by consent. In making decisions, the interests of all members must be considered, with the individual bowing to the wishes of the whole. All members, including employees, have a direct

voice within their domain of responsibility, guaranteed by the principle of consent, in the policies that affect their role in the organization. No action can be taken if there are no solutions found that everyone can accept. All members must then be ready to act according to these unanimous decisions. Consent governs policy decision making. Note that 'consent' does not means 'consensus' (unanimous decisions). Consent means there are no argued and paramount objections to a proposed decision. Decisions are easier to make when we understand what aims those decisions are to fulfil. And if we raise objections or withdraw our consent, this is done within the context of the specified aims of our circle within the organization.

Consent is a decision to which one has no paramount objection. 'Can I live with it?'
The principle of consent is profound. It means that any decision circle cannot move forward if one of its members object. The objector must be able to explain the reasons for their objection to other members of the group, and how the proposed decision will be detrimental to the group's specified aims. Any objection is not a veto. Objections are constructive since they help the group to find alternate solutions acceptable to all.

Note that the decision tools of MWD have the same 'consent' consequences of sociocracy, though the MWD decision tools are much more efficient.

4. Elections by consent. People are elected to functions and tasks by consent, following open dialogue. First, each person writes his or her name on a ballot, as well as the name of a nominee. The meeting leader reads each nomination, asking members to explain why they chose their candidate. After dialogue, people can (and often do) change their nominations. Finally, the chairperson formally proposes the person with the strongest arguments, and everyone then has a chance to present objections. This may continue for a few rounds, and when there are no more objections to a candidate, he or she is selected. If no one is suitable, the circle has to find someone to fill the vacancy.

[Note: The material on sociocracy is sourced from the Web, which has a number of useful sites. See References]

Key Learning: Sociocracy is a multilevel system of governance that retains the benefits of hierarchy, whist overcoming some of its costs. The concept could easily be combined with 'Meetings without Discussion' with which it is totally complementary.

Recommendation 10: It is recommended that the cotton industry trial sociocracy as a system of governance, and as with MWD, conduct a controlled experiment whereby the performance of a branch of the industry is compared with an otherwise similar control group.

Some best practice suggestions from other industries and other countries.

In their research into innovation in primary industry associations, Plowman, Askanasy, Gardner and Letts (2004) compared six different primary industries and their associations. Included in the many recommendations that flowed from that research are three that may have relevance to the cotton industry.

Producers, in Rogers' (1995) terms, range from innovators to laggards. The higher the proportion in the first group, the more progressive the industry is likely to be. When the situation is reversed, the 'tail' tends to drag down the capacity of the industry. Industry associations that wish to become more progressive might consider whether or not, as a condition of membership, producers are willing to

adhere to some minimum base standard of quality, farming systems, environmental management systems, and the like.

Second, associations have members, commonly producers. Membership normally accords its members certain rights and privileges. Those rights and privileges need to be balanced with obligations and responsibilities. For example, the most innovative association from Plowman et al's (2004) study required, as a condition of membership, that every member of the industry should take an active role in its governance. Though only a small association of 70 enterprises, at any time 40 of those enterprises are on one of its various committees. In this fashion, the burden is shared and managerial knowledge distributed. As a result, this particular association has no paid administrative support. In another industry, its association has a very well established administrative infrastructure which provides excellent member services. However, the down-side is that even the most rudimentary administrative tasks are looked after by 'the girls in the office', rendering many of the producers ignorant of basic managerial functions. Another acknowledged downside is that paid employees have a vested interest in looking after their employment, while the producers remain passive but demandingly dependent.

Third, the innovation literature suggests that one of the characteristics necessary for sustained innovation is freshness of leadership (Damanpour, 1991). The most innovative association identified in Plowman et al.'s (2004) research had a constitutional requirement that nobody on the executive could hold their office for more than one elected term – in their case, two years. This ensures that leadership is a privilege, not a right. As a result, effective leadership and managerial knowledge is distributed broadly throughout the association, not closely held by a few incumbents.

Key Learning: Innovative industry associations have characteristics that distinguish them from non-innovative ones. Those characteristics are easily adopted.

Recommendation 11 (a): (i) It is strongly recommended that cotton producers adopt benchmarking of performance relative to each other across a range of variables. Those that fall into the lower quartile might be helped to lift their performance or supported as they exit the industry, thereby removing the necessity of their peers to provide cross-subsidisation. (ii) It is strongly recommended that cotton grower associations consider the extent to which they have a dependency relationship between members and association staff and investigate ways of embedding obligation and responsibility broadly across their membership. (iii) It is strongly recommended that the cotton industry examine its system of leadership with a view to avoiding incumbency and raising levels of innovation.

In the nation of Argentina, there is no government agency looking after primary production. Yet its primary producers are among that country's social and economic elite. The cause of this good fortune is AACREA, a producer organization formed over 40 years ago and now supporting over 200 producer groups. It operates on the basis of participative action research. The following is a direct extract from their website (http://www.aacrea.org.ar/).

The process is based on monthly meetings, held in rotation on the farms of the 10 to 12 enterprises in each group. The main objective of each meeting is to assist the host farmer in solving his problems and planning his management, using the combined expertise of his neighbours.

Key Learning: By acting as members of a Board of Management for each other, neighbours provide the mechanism for continuous improvement through participative action research. This shared responsibility is status free.

Recommendation 11 (b): Rogers' (1995) adaptation literature suggests that most people are more likely to be influenced by their peers. Therefore, it seems evident that a model like the AACREA system will provide the cotton industry with a new and effective lever for change. It is recommended that participative action research by formally created groups of neighbourhood producers be adopted as a strategy of continuous improvement.

Coutts, Roberts, Frost & Coutts (2004) undertook a review of extension in Australia as practiced between 2001 and 2003. One of most innovative projects they came across was Meat and Livestock Australia's *BeefPlan*, a number of self-directed groups operating under what the researchers called the *facilitation/empowerment* model. A group forms in a self-directed fashion in response to an invitation from MLA. Each group, regionally located, is provided with a set of operating guidelines, an MLA-funded workshop within which they are taught methods of self-facilitation (MWD), and tools which they use in the same workshop to develop an initial strategic plan. On incorporation, the group is provided with $10,000 worth of funding which they are to use to provide capacity building in any of the four domains of production, business, environmental and social. Whether through workshops, seminars, field days or study tours, each BeefPlan group chooses activities which address local needs. The one stipulation that MLA places on these activities is that they be open to the broader industry in the region, thereby embracing the adaptation curve philosophy by having BeefPlan members influence those further down the curve.

Key Learning: Effective industry groups are local, self-managing and pursue common interests for mutual benefit.

R&D Recommendation 11 (c): (i) MLA's BeefPlan offers the cotton industry a possible option for leveraging change more broadly. Funded capacity-building groups, say one per grower region, could be established as pilots to test their efficacy in the cotton industry. (ii) The facilitation/empowerment model, whereby grower groups gain the skills necessary to facilitate their own agenda, fits nicely with the appropriately increasing interest into capacity-building. Note that MWD is a suite of skills that provides that empowerment.

Conclusion

This paper acknowledges that the cotton industry, whilst a system of production, ginning, and marketing, is first and foremost a complex social system in which most of the behaviours are unconscious and many of those are suboptimal. By the conscious adoption of alternate social systems, substantial gains can be made.

'Meetings without Discussion' is a suite of processes for more effective dialogue. It has application at any scale in the industry. Sociocracy is a complimentary system of governance within a hierarchical industry. AACREA and BeefPlan are international and Australian examples of innovative semi-autonomous industry organization that could be easily adapted to the cotton industry. Research into innovative primary industry associations recommends industry responsibility across all members and freshness of leadership. Adaptation by the cotton industry of the recommendations presented in this paper can only be beneficial.

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